Ignyta, Inc.
Form 424B3
November 12, 2014
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Filed pursuant to Rule 424(b)(3)
Registration No. 333-192956

PROSPECTUS SUPPLEMENT NO. 4

IGNYTA, INC.

9,010,238 Shares of Common Stock

This prospectus supplement No. 4 supplements and amends the prospectus dated April 4, 2014, as supplemented and amended by prospectus supplement dated May 14, 2014, prospectus supplement No. 2 dated June 16, 2014 and prospectus supplement No. 3 dated August 13, 2014 (as so supplemented and amended, the prospectus), relating to the resale of up to 9,010,238 outstanding shares of common stock of Ignyta, Inc. (the Company). These shares include 7,740,142 shares of common stock issued and sold to accredited investors in a private placement offering closed on November 6, 2013 (the Initial Private Placement), and 1,270,096 shares of common stock issued and sold to accredited investors in a private placement offering closed on November 29, 2013 (together with the Initial Private Placement, the Private Placements). All shares of common stock issued in the Private Placements were sold at a purchase price of $6.00 per share.

This prospectus supplement incorporates into our prospectus the information contained in our attached:

Quarterly Report on Form 10-Q for the quarter ended September 30, 2014, filed with the Securities and Exchange Commission on November 7, 2014;

Current Reports on Form 8-K, which were filed with the Securities and Exchange Commission on September 8, 2014 and October 1, 2014.

This prospectus supplement is not complete without, and may not be delivered or utilized in connection with the prospectus, including any supplements and amendments thereto. This prospectus supplement should be read in conjunction with the prospectus, which is to be delivered with this prospectus supplement. This prospectus supplement is qualified by reference to the prospectus, except to the extent that the information in this prospectus supplement updates or supersedes the information contained in the prospectus, including any supplements and amendments thereto.

Investing in our common stock involves a high degree of risk. Before making any investment in our common stock, you should read and carefully consider matters discussed under the caption Risk Factors beginning on

page 8 of the prospectus, as updated or superseded by the Risk Factors section beginning on page 29 of the attached Quarterly Report on Form 10-Q.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

This prospectus supplement is dated November 12, 2014

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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

x **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended September 30, 2014

OR

¨ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission file number: 001-36344

Ignyta, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**45-3174872**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
11095 Flintkote Avenue, Suite D, San Diego, CA	**92121**
(Address of principal executive offices)	**(Zip Code)**

(858) 255-5959

(Registrant s telephone number, including area code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. x Yes ¨ No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). x Yes ¨ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act (check one):

Large accelerated filer ¨	Accelerated filer ¨
Non-accelerated filer ¨	Smaller reporting company x

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ¨ No x

The number of outstanding shares of the registrant s common stock, par value $0.0001 per share, as of November 1, 2014 was 19,580,769.

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IGNYTA, INC.

FORM 10-Q QUARTERLY REPORT

FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2014

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PART I FINANCIAL INFORMATION

Item 1. Financial Statements

Ignyta, Inc.

(A Development Stage Company)

Condensed Balance Sheets

	September 30, 2014 (Unaudited)	December 31, 2013 (Audited)
Assets		
Current Assets		
Cash and cash equivalents	$ 21,529,992	$ 51,803,716
Short term investments	54,663,003	
Prepaid expenses and other current assets	1,125,822	671,373
Total current assets	77,318,817	52,475,089
Fixed Assets - Net	2,838,183	830,706
Long term investments	18,480,924	
Other Assets	736,477	13,045
	$ 99,374,401	$ 53,318,840
Liabilities and Stockholders Equity		
Current Liabilities		
Accounts payable	$ 797,928	$ 811,600
Accrued expenses and other liabilities	2,632,983	590,235
Lease payable, current portion	53,311	
Warrant liability	155,500	129,400
Total current liabilities	3,639,722	1,531,235
Note payable, net of current portion and discount	20,161,600	8,950,000
Lease payable, net of current portion	116,689	
Other liabilities	630,000	1,050,000
Total liabilities	24,548,011	11,531,235
Commitments and Contingencies (Note 11)		
Stockholders Equity		

Preferred Stock, $.0001 par value; 10,000,000 shares authorized; no shares issued or outstanding		
Common Stock, $.0001 par value; 150,000,000 shares authorized; 19,579,588 and 13,934,876 shares issued and outstanding, respectively	1,958	1,393
Additional paid-in capital	110,670,365	57,359,152
Deficit accumulated during the development stage	(35,805,507)	(15,572,940)
Accumulated other comprehensive loss	(40,426)	
Total stockholders equity	74,826,390	41,787,605
	$ 99,374,401	$ 53,318,840

The accompanying notes are an integral part of these financial statements.

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Ignyta, Inc.

(A Development Stage Company)

Unaudited Condensed Statements of Operations and Comprehensive Loss

	Three Months Ended September 30, 2014	Three Months Ended September 30, 2013	Nine Months Ended September 30, 2014	Nine Months Ended September 30, 2013	Period from August 29, 2011 (Inception) through September 30, 2014
Revenue	$	$	$ 150,000	$	$ 150,000
Expenses					
Research and development	8,622,547	724,153	14,380,914	1,944,818	25,299,693
General and administrative	2,223,311	485,407	6,018,276	1,389,102	10,336,673
Loss from Operations	(10,845,858)	(1,209,560)	(20,249,190)	(3,333,920)	(35,486,366)
Other Income (Expense)					
Other income (expense)	30,778	100	(21,880)	5,800	(127,832)
Interest income (expense)	111,827	(30,108)	43,807	(65,583)	(182,601)
Total Other Income (Expense)	142,605	(30,008)	21,927	(59,783)	(310,433)
Loss Before Income Taxes	(10,703,253)	(1,239,568)	(20,227,263)	(3,393,703)	(35,796,799)
Income tax provision			5,304	2,095	8,708
Net Loss	$ (10,703,253)	$ (1,239,568)	$ (20,232,567)	$ (3,395,798)	$ (35,805,507)
Basic and diluted loss per share	$ (0.55)	$ (0.55)	$ (1.13)	$ (1.58)	$
Weighted average shares	19,579,588	2,272,832	17,905,134	2,153,735	
Comprehensive Loss					
Net loss	$ (10,703,253)	$ (1,239,568)	$ (20,232,567)	$ (3,395,798)	$ (35,805,507)
Unrealized loss on available for sale securities	(45,988)		(40,426)		(40,426)
Comprehensive loss	$ (10,749,241)	$ (1,239,568)	$ (20,272,993)	$ (3,395,798)	$ (35,845,933)

The accompanying notes are an integral part of these financial statements.

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Ignyta, Inc.

(A Development Stage Company)

Condensed Statements of Stockholders Equity

	Convertible Preferred Stock Series A		Series B		Common Stock		Additional Paid-in Capital	Deficit Accumulated During the Development Stage	Accumulated Other Comprehensive Income (Loss)	Total
	Shares	Amount	Shares	Amount	Shares	Amount				
nce at ust 29,		$		$		$	$	$	$	$
nce of icted k					666,668	66	1,934			2,(
nce of s A rred Stock 29,221 in ing costs	416,667	42					220,736			220,7
k-based pensation nse							781			7
oss								(79,445)		(79,4
nce at mber 31, (Audited)	416,667	42			666,668	66	223,451	(79,445)		144,2
rchase of mon Stock					(13,334)	(1)	(39)			
nce of s A rred Stock 858 in ing costs	416,667	42					249,100			249,1
nce of s B rred Stock f $80,969 fering			1,835,000	183			5,423,848			5,424,0
k-based pensation nse							23,373			23,3

oss								(1,279,852)	(1,279,
nce at mber 31, (Audited)	833,334	84	1,835,000	183	653,334	65	5,919,733	(1,359,297)	4,560,
nce of mon Stock o stock ns cised					12,290	1	2,999		3,
nce of icted k due to gene er					1,583,336	158	5,542		5,
ersion of mon Stock o reverse er	(833,334)	(84)	(1,835,000)	(183)	2,675,678	267			
nce of mon Stock f 47,687 in ing costs					9,010,238	902	51,012,839		51,013,
k-based pensation nse							370,439		370,
nce of ant							47,600		47,
oss								(14,213,643)	(14,213,
nce at mber 31, (Audited)					13,934,876	1,393	57,359,152	(15,572,940)	41,787,
nce of mon Stock o stock ns cised					12,962	2	5,470		5,
rchase of icted k					(400,000)	(40)	(1,400)		(1,
nce of mon Stock f 08,670 in ing costs					6,031,750	603	51,581,240		51,581,
k-based pensation nse							1,517,503		1,517,
							208,400		208,

nce of ant							
alized loss vailable for ecurities						(40,426)	(40,
oss					(20,232,567)		(20,232,
nce at ember 30,							
udited)	$	$ 19,579,588	$ 1,958	$ 110,670,365	$ (35,805,507)	$ (40,426)	$ 74,826,

The accompanying notes are an integral part of these financial statements.

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Ignyta, Inc.

(A Development Stage Company)

Unaudited Condensed Statements of Cash Flows

	Nine Months Ended September 30, 2014	Nine Months Ended September 30, 2013	Period from August 29, 2011 (Inception) through September 30, 2014
Cash Flows From Operating Activities			
Net loss	$ (20,232,567)	$ (3,395,798)	$ (35,805,507)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation	257,839	76,519	384,111
Loss on sale of assets	1,437		30,788
Stock-based compensation	1,517,503	57,628	1,912,096
Change in fair value of warrant liabilities	26,100	(5,800)	102,700
Accretion and amortization on debt securities	560,188		560,188
Warrant issued for license agreement			47,600
Amortization of debt discount	219,327	34,629	382,883
Increase (decrease) in cash resulting from changes in:			
Prepaid expenses and other current assets	(192,208)	(292,063)	(987,382)
Accounts payable trade	(13,672)	102,335	797,928
Accrued expenses and other liabilities	1,942,748	124,337	2,532,983
Net cash used in operating activities	(15,913,305)	(3,298,213)	(30,041,612)
Cash Flows From Investing Activities			
Purchases of investments	(79,419,409)		(79,419,409)
Sales of investments	5,674,868		5,674,868
Purchases of fixed assets	(1,996,753)	(256,596)	(2,993,082)
Proceeds received from sale of assets			10,000
Net cash used by investing activities	(75,741,294)	(256,596)	(76,727,623)
Cash Flows From Financing Activities			
Net proceeds from issuance of Common Stock	51,581,843		102,595,584
Proceeds from issuance of notes payable	21,000,000	1,000,000	32,500,000
Payments on notes payable	(10,000,000)		(11,500,000)
Payment of deferred financing costs	(1,050,000)		(1,050,000)
Payment of financing costs	(155,000)		(155,000)
Net proceeds from issuance of Restricted Stock		5,700	7,700
Net proceeds from issuance of Preferred Stock		2,500	5,893,951
Net proceeds from stock options exercised	5,472		8,472

Repurchase of Common Stock	(1,440)		(1,480)
Net cash provided by financing activities	61,380,875	1,008,200	128,299,227
Net Change in Cash and Cash Equivalents	(30,273,724)	(2,546,609)	21,529,992
Cash and Cash Equivalents at Beginning of Period	51,803,716	5,032,307	
Cash and Cash Equivalents at End of Period	$ 21,529,992	$ 2,485,698	$ 21,529,992
Supplemental Disclosures of Cash Flow Information:			
Interest	$ 1,574,767	$ 30,955	$ 1,636,223
Income taxes	$ 5,304	$ 2,095	$ 8,708
Noncash investing and Financing Activities:			
Warrants issued with debt financing recorded as debt discount	$ 208,400	$ 28,300	$ 261,200
Final loan fee recorded as debt discount	$ 630,000	$	$ 630,000
Leased capital equipment	$ 170,000	$	$ 170,000
Leasehold improvement paid by landlord	$ 100,000	$	$ 100,000
Unrealized loss on available for sale securities	$ 40,426	$	$ 40,426

The accompanying notes are an integral part of these financial statements.

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Notes to Financial Statements

1. Summary of Significant Accounting Policies

A summary of the Company s significant accounting policies consistently applied in the preparation of the accompanying financial statements follows.

Nature of operations

Ignyta, Inc. (Ignyta) was founded in 2011 and is incorporated in the state of Delaware. On June 12, 2014, Ignyta, Inc., a corporation incorporated in the state of Nevada, merged with and into Ignyta (then known as Ignyta Operating, Inc.) with Ignyta Operating, Inc. surviving the merger and changing its name to Ignyta, Inc. (see Note 2).

On October 31, 2013, Ignyta merged with and into IGAS Acquisition Corp., a wholly-owned subsidiary of Ignyta, Inc., a Nevada corporation previously named Infinity Oil & Gas Company (see Note 2). As used in these financial statements, unless the context indicates or otherwise requires, the Company , we , us , and our refer to Ignyta.

In May 2013, the Company acquired Actagene Oncology, Inc. (Actagene), a San Diego based privately held biotechnology company developing precision medicines for high unmet need cancer indications, based on cancer genome mining and sequencing. With the acquisition, the Company changed its business strategy from a prior focus on molecular diagnostics for autoimmune disease to an integrated drug and diagnostic, or Rx/Dx, focus on drug and biomarker discovery and development for oncology (see Note 3).

The Company is a precision oncology biotechnology company dedicated to discovering or acquiring, then developing and commercializing, targeted new drugs for cancer patients whose tumors harbor specific molecular alterations. The Company is pursuing an integrated therapeutic and diagnostic, or Rx/Dx, strategy, where it anticipates pairing each of its product candidates with biomarker-based companion diagnostics that are designed to identify the patients who are most likely to benefit from the precisely targeted drugs the Company develops.

Basis of Presentation

The accompanying unaudited condensed financial statements have been prepared in accordance with U.S. generally accepted accounting principles (GAAP) for interim financial information, the instructions to Form 10-Q and related Securities and Exchange Commission (SEC) rules and regulations. Accordingly, they do not include all of the information and footnotes required by GAAP for complete financial statements. In management s opinion, the accompanying financial statements reflect all adjustments, consisting of normal recurring adjustments, considered necessary for a fair presentation of the results for the interim periods presented.

Interim financial results are not necessarily indicative of results anticipated for the full year. These unaudited financial statements should be read in conjunction with the Company s audited financial statements and footnotes included in the Company s Annual Report on Form 10-K for the fiscal year ended December 31, 2013, from which the balance sheet information herein was derived.

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. Actual results could differ from those estimates.

Development stage

As of September 30, 2014, the Company has devoted substantially all of its efforts to product development, raising capital and building infrastructure, and has not realized revenues from its planned principal operations. Accordingly, the Company is considered to be in the development stage.

Liquidity

As of September 30, 2014, the Company had an accumulated deficit of approximately $35,806,000. The Company also had negative cash flow from operations of approximately $15,913,000 during the nine months ended September 30, 2014.

The Company expects that it will need additional capital to further fund development of, and seek regulatory approvals for, its product candidates, and begin to commercialize any approved products.

We are currently focused primarily on the development of our RXDX-101, RXDX-103, RXDX-104 and Spark programs. We believe such activities will result in our continued incurrence of significant research and development and other expenses related to those programs. If the clinical trials for any of our products fail or produce unsuccessful results and those product candidates do not gain regulatory approval, or if any of our product candidates, if approved, fails to achieve market acceptance, we may never become profitable. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. The Company intends to cover its future operating expenses through cash on hand and through

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additional financing from existing and prospective investors. We cannot be sure that additional financing will be available when needed or that, if available, financing will be obtained on terms favorable to us or to our stockholders.

While we expect that our existing cash, cash equivalents and available-for-sale securities will enable us to fund our operations and capital expenditure requirements for at least the next twelve months having insufficient funds may require us to delay, reduce, limit or terminate some or all of our development programs or future commercialization efforts or grant rights to develop and market product candidates that we might otherwise prefer to develop and market ourselves. Failure to obtain adequate financing could eventually adversely affect our ability to operate as a going concern. If we raise additional funds from the issuance of equity securities, substantial dilution to our existing stockholders would likely result. If we raise additional funds by incurring debt financing, the terms of the debt may involve significant cash payment obligations as well as covenants and specific financial ratios that may restrict our ability to operate our business.

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. Actual results could differ from those estimates. Significant estimates used in preparing the financial statements include those assumed in computing the valuation allowance on deferred tax assets and the valuation of warrants, and those assumed in calculating stock-based compensation expense.

Cash and cash equivalents

The Company considers all highly liquid investments with an original maturity of 90 days or less when purchased to be cash equivalents. Cash equivalents primarily represent amounts invested in money market funds whose cost equals market value.

Investments

Investments consist of corporate notes and bonds and commercial paper. The Company classifies investments as available-for-sale at the time of purchase. All investments are recorded at estimated fair value. Unrealized gains and losses for available-for-sale securities are included in accumulated other comprehensive income, a component of stockholders equity. The Company evaluates its investments as of each balance sheet date to assess whether those with unrealized loss positions are other-than-temporarily impaired. Impairments are considered to be other-than-temporary if they are related to deterioration in credit risk or if it is likely that the Company will sell the securities before the recovery of its cost basis. Realized gains and losses and declines in value judged to be other-than-temporary are determined based on the specific identification method and are reported in other income (expense), net in the Statements of Operations. No other-than-temporary impairment charges have been recognized since inception.

Fixed assets

Fixed assets are recorded at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the related assets, generally three to seven years, or, in the case of leasehold improvements, over the lesser of the useful life of the related asset or the lease term.

Impairment of long-lived assets

In accordance with authoritative guidance related to impairment or disposal of long-lived assets, management reviews the Company s long-lived asset groups for impairment whenever events indicate that their book value may not be recoverable.

When management determines that one or more impairment indicators are present for an asset group, it compares the book value of the asset group to net future undiscounted cash flows that the asset group is expected to generate. If the book value of the asset group is greater than the net future undiscounted cash flows that the asset group is expected to generate, it compares the fair value to the book value of the asset group. If the fair value is less than the book value, it recognizes an impairment loss. The impairment loss would be the excess of the book value of the asset group over its fair value. To date, the Company has not experienced any impairment losses on its long-lived assets used in operations.

Stock-based compensation

The Company accounts for stock-based compensation in accordance with Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 718, *Compensation Stock Compensation*, which establishes accounting for equity instruments exchanged for employee services. Under such provisions, stock-based compensation cost is measured at the grant date, based on the calculated fair value of the award, and is recognized as an expense, under the straight-line method, over the employee s requisite service period (generally the vesting period of the equity grant).

The Company accounts for equity instruments, including restricted stock or stock options, issued to non-employees in accordance with authoritative guidance for equity based payments to non-employees. Stock options issued to non-employees are accounted for at their estimated fair value determined using the Black-Scholes option-pricing model. The fair value of options granted to non-employees is re-measured as they vest, and the resulting increase in value, if any, is recognized as expense during the period the related services are rendered. Restricted stock issued to non-employees is accounted for at its estimated fair value as it vests.

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Fair value of financial instruments	The Company s financial instruments consist of cash and cash equivalents, investments, prepaid expenses and other assets, accounts payable, accrued expenses, and notes payable. Fair value estimates of these instruments at a specific point in time are made based on relevant market information. These estimates may be subjective in nature and involve uncertainties and matters of significant judgment and therefore cannot be determined with precision. As of September 30, 2014 and December 31, 2013, the book values are generally considered to be representative of their respective fair values because of the short-term nature of those instruments.
Derivative liabilities	The Company accounts for its warrants as either equity or liabilities based upon the characteristics and provisions of each instrument. Warrants classified as derivative liabilities are recorded on the Company s balance sheet at their fair value on the date of issuance and revalued on each subsequent balance sheet date until such instruments are exercised or expire, with any changes in the fair value between reporting periods recorded as other income or expense. Management estimates the fair value of these liabilities using option pricing models and assumptions that are based on the individual characteristics of the warrants or instruments on the valuation date, as well as assumptions for future events, expected volatility, expected life, yield, and risk free interest rate.
Income taxes	Deferred income taxes are recognized for the tax consequences in future years of differences between the tax basis of assets and liabilities and their financial reporting amounts at each year end based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized. Income tax expense is the combination of the tax payable for the year and the change during the year in deferred tax assets and liabilities.
Earnings per share (EPS)	Basic and diluted loss per common share have been computed by dividing the losses applicable to common stock by the weighted average number of common shares outstanding. The Company s basic and fully diluted EPS calculation are the same since the increased number of shares that would be included in the diluted calculation from the assumed exercise of stock equivalents would be anti-dilutive to the net loss in each of the years shown in the financial statements.
Comprehensive income (loss)	Comprehensive income (loss) is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources. The Company is required to record all components of comprehensive income (loss) in the financial statements in the period in which they are recognized. Net income (loss) and other comprehensive income (loss), including unrealized gains and losses on investments, are reported net of their related tax effect, to arrive at comprehensive income (loss).
Research and development costs	The Company is actively engaged in new product development efforts for which related costs are expensed as incurred.
Fair value measurement	Financial assets and liabilities are measured at fair value, which is defined as the exchange price that would be received for an asset or paid to transfer a liability (an

exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The following is a fair value hierarchy based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value:

Level 1 Quoted prices in active markets for identical assets or liabilities.

Level 2 Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

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The following table presents the Company s fair value hierarchy for assets and liabilities measured at fair value on a recurring basis as of September 30, 2014 and December 31, 2013 (in thousands):

	September 30, 2014				December 31, 2013			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Cash and cash equivalents	$ 21,530	$	$	$ 21,530	$ 51,804	$	$	$ 51,804
Short-term investments:								
Corporate debt securities								
Financial		32,562		32,562				
Industrial		13,699		13,699				
Utility		4,206		4,206				
Commercial paper								
Financial		4,196		4,196				
Industrial								
Total short-term investments	$	$ 54,663	$	$ 54,663	$	$	$	$
Long-term investments:								
Corporate debt securities								
Financial		10,932		10,932				
Industrial		7,549		7,549				
Utility								
Total long-term investments	$	$ 18,481	$	18,481	$	$	$	$
Total assets measured at fair value	$ 21,530	$ 73,144	$	$ 94,674	$ 51,804	$	$	$ 51,804
Liabilities:								
Warrant liability			156	156			129	129
Total liabilities measured at fair value	$	$	$ 156	$ 156	$	$	$ 129	$ 129

The Company holds available-for-sale securities that consist of highly liquid, investment grade debt securities. The Company determines the fair value of its debt securities based upon one or more valuations reported by its investment accounting and reporting service provider. The investment service provider values the securities using a hierarchical security pricing model that relies primarily on valuations provided by an industry-recognized valuation service. Such valuations may be based on trade prices in active markets for identical assets or liabilities (Level 1 inputs) or valuation models using inputs that are observable either directly or indirectly (Level 2 inputs), such as quoted prices for similar assets or liabilities, yield curves, volatility factors, credit spreads, default rates, loss severity, current market and contractual prices for the underlying instruments or debt, and broker and dealer quotes, as well as other relevant economic measures.

The Company used Level 3 inputs for its valuation methodology for the warrant derivative liabilities. The estimated fair values were determined using a binomial option pricing model based on various assumptions (see Note 9). The Company s derivative liabilities are adjusted to reflect estimated fair value at each period end, with any decrease or increase in the estimated fair value being recorded in other income or expense accordingly, as adjustments to fair value of derivative liabilities.

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The following table presents the activity for liabilities measured at estimated fair value using unobservable inputs for the nine months ended September 30, 2014:

Fair Value Measurements Using Significant Unobservable Inputs (Level 3)

	Warrant Derivative Liability
Beginning Balance at December 31, 2011	$
Issuances	24,500
Ending Balance at December 31, 2012	$ 24,500
Issuances	28,300
Adjustments to estimated fair value	76,600
Ending Balance at December 31, 2013	$ 129,400
Adjustments to estimated fair value	26,100
Ending Balance at September 30, 2014	$ 155,500

2. Reverse Merger

For purposes of the below descriptions in this Note 2, all references to Ignyta shall refer to Ignyta, Inc., a Nevada corporation whose name was changed from Infinity Oil & Gas Company on October 31, 2013 in connection with the closing of the Merger; and all references to Merger Sub shall refer to IGAS Acquisition Corp., a Delaware corporation and a wholly owned subsidiary of Ignyta.

On October 31, 2013, Ignyta, Merger Sub, and the Company entered into an Agreement and Plan of Merger and Reorganization (the Merger Agreement). The Merger Agreement provided for the merger of Merger Sub with and into the Company (the Merger), with the Company surviving the transaction as a wholly owned subsidiary of Ignyta. The Merger closed on October 31, 2013 concurrently with the execution and delivery of the Merger Agreement.

Also on October 31, 2013, prior to the execution and delivery of the Merger Agreement and the concurrent closing of the Merger, (i) the holders of all series of outstanding preferred stock of the Company, consisting of Series A Preferred Stock and Series B Preferred Stock, voluntarily converted such shares into shares of the Company s common stock in accordance with the certificate of incorporation of the Company and at the then-effective conversion rates therefor, which were one-to-one in all cases, and (ii) the Company amended its certificate of incorporation to change its name to Ignyta Operating, Inc. and to effect a three-to-one reverse stock split of its capital stock, resulting in 4,916,469 outstanding shares of the Company s common stock, outstanding warrants to acquire up to an aggregate of 25,001 shares of the Company s common stock, and outstanding options granted under the Company s 2011 Stock Incentive Plan (as amended and restated, the 2011 Plan) to purchase up to an aggregate of 358,986 shares of the Company s common stock.

At the closing of the Merger and pursuant to the terms of the Merger Agreement, Ignyta issued an aggregate of 4,916,469 shares of its common stock to the former stockholders of the Company in exchange for all of the outstanding shares of the Company s capital stock. That number of shares was negotiated and agreed to by Ignyta and the Company prior to entering into the Merger Agreement. As of immediately following the closing of the Merger, the Company became a wholly-owned subsidiary of Ignyta, and the former stockholders of the Company collectively owned approximately 99.85% of the outstanding shares of Ignyta s common stock. In addition, pursuant to the terms of the Merger Agreement, as of the closing of the Merger Ignyta assumed (i) the 2011 Plan, under which an aggregate of 342,209 shares were reserved for issuance pursuant to future equity grants, (ii) the obligation to issue up to an aggregate of 358,986 shares of its common stock upon the exercise of all options granted under the 2011 Plan that were outstanding as of immediately prior to the closing of the Merger, and (iii) the obligation to issue up to an aggregate of 25,001 shares of its common stock upon the exercise of two warrants previously issued by the Company and outstanding as of immediately prior to the closing of the Merger.

On June 12, 2014, Ignyta merged with and into the Company, with the Company surviving the merger and changing its name to Ignyta, Inc. (the Reincorporation Merger). At the closing of the Reincorporation Merger, (i) each outstanding share of Ignyta s common stock was converted into one share of common stock of the Company, (ii) each outstanding option to purchase, or other equity award relating to, Ignyta s common stock was deemed to constitute an option to purchase, or other equity award relating to, common stock of the Company with no change in the exercise price or other terms or provisions of the award, (iii) the shares of Ignyta s common stock that remained available for issuance under the 2011 Plan and the 2014 Incentive Award Plan (the 2014 Plan, and, together with

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the 2011 Plan, the Ignyta Plans), were deemed to relate to shares of the Company s common stock, and (iv) each outstanding warrant to purchase Ignyta s common stock was deemed to constitute a warrant to purchase an equal number of shares of common stock of the Company with no change in the exercise price or other terms or provisions of the warrant.

3. Actagene Merger

In May 2013, the Company entered into an Agreement and Plan of Reorganization with Actagene. In accordance with the agreement, Actagene was merged into the Company and the separate corporate existence of Actagene ceased, with the Company continuing as the surviving corporation. On May 20, 2013, the merger was effected and the Company issued 1,583,336 shares of restricted common stock in exchange for the cancellation of all of the outstanding shares of Actagene.

The merger was accounted for as a combination of entities under common control. The majority stockholder of the Company was also the majority stockholder of Actagene, with approximately 60% of the voting power in each entity. Additionally, representatives of the majority stockholder controlled the day to day operations and were on the board of directors of each entity.

4. Investments

The Company determines the appropriate designation of investments at the time of purchase and reevaluates such designation as of each balance sheet date. As of September 30, 2014, the Company s short-term investments have maturity dates of less than one year from the balance sheet date. The Company s long-term investments have maturity dates of greater than one year from the balance sheet date.

The cost of securities sold is based on the specific identification method. Amortization of premiums, accretion of discounts, interest, dividend income, and realized gains and losses are included in investment income.

The following table summarizes investments by security type as of September 30, 2014:

	September 30, 2014 (in thousands)			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Market Value
Available-for-sale securities:				
Corporate debt securities, short-term	$ 54,689	$	$ (26)	$ 54,663
Corporate debt securities, long-term	$ 18,495	$	$ (14)	$ 18,481
Total	$ 73,184	$	$ (40)	$ 73,144

5. Fixed Assets Fixed assets consisted of the following:

	September 30, 2014	December 31, 2013
Manufacturing and lab equipment	**$ 2,733,560**	$ 775,872
Office furniture	**137,262**	59,095
Computers and equipment	**202,705**	110,857
Leasehold Improvements	**136,356**	
	3,209,883	945,824
Less accumulated depreciation and amortization	**(371,700)**	(115,118)
	$ 2,838,183	$ 830,706

Depreciation expense for the three months ended September 30, 2014 and 2013 was $146,131 and $28,442, respectively, and for the nine months ended September 30, 2014 and 2013 and for the period from inception (August 29, 2011) through September 30, 2014 was $257,839, $76,519, and $384,111, respectively.

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6. Notes Payable

On September 30, 2014 the Company entered into an amended and restated loan and security agreement (the New Loan Agreement) with a financial institution. The New Loan Agreement replaced the prior loan and security agreement (the Loan Agreement) which was first entered into in June 2012, amended in February 2013 and amended and restated in December 2013. The amount borrowed under the New Loan Agreement was increased from $10,000,000 to $21,000,000, with an option to receive an additional $10,000,000, which may be drawn down at any time prior to September 30, 2015 provided the Company has initiated the Phase IIa portion of its ongoing, global Phase I/II clinical study of RXDX-101 and subject to other customary conditions for funding. All principal and interest due on the prior Loan Agreement was paid in full and the Company was advanced the net proceeds on September 30, 2014. This transaction was accounted for as a debt modification. Payments of principal and interest are due on the New Loan Agreement on a fully amortized basis of 30 months in equal monthly installments, commencing after a twelve-month period of interest only payments, such that all amounts owed under the New Loan Agreement will mature on April 1, 2018. The number of months of interest-only payments and the number of months over which the principal will be amortized each will be increased by six months if the second loan tranche has been drawn down or the Company has raised net proceeds of at least $50 million through the offering of its equity securities, in each case prior to October 31, 2015. Upon the final maturity date, the Company will also owe to the lender a final payment equal to 3% of the full principal amount under the New Loan Agreement. The final payment of $630,000, which is based on the initial amount borrowed under the New Loan Agreement, is presented as a debt discount on the related debt to be amortized to interest expense. Interest on the note was fixed on the date of funding at 8.56%. Pursuant to the New Loan Agreement, the Company is bound by certain affirmative and negative covenants setting forth actions that it must and must not take during the term thereof. Upon the occurrence of an event of default under the New Loan Agreement, subject to cure periods for certain events of default, all amounts owed by the Company thereunder shall begin to bear interest at a rate of 11.56% and may be declared immediately due and payable by SVB. The Company has granted SVB a security interest in substantially all of its personal property, rights and assets, other than intellectual property, to secure the payment of all amounts owed to SVB under the New Loan Agreement. The Company has also agreed not to encumber any of its intellectual property without SVB s prior written consent.

In connection with entering into the New Loan Agreement, the Company issued to SVB and its affiliate warrants to purchase an aggregate of 37,849 shares of its common stock. The warrants are exercisable immediately, have a per-share exercise price of $7.518 and have a term of seven years. The warrants were recorded at a fair value of $208,400 and are presented as a debt discount on the related debt to be amortized to interest expense over the term of the Loan Agreement (See Note 9). If the Company draws down the second loan tranche, at that time it will issue to SVB and its affiliate additional warrants which will be exercisable immediately and have a term of seven years. Those warrants will be exercisable for an aggregate number of shares equal to $135,500 divided by the lower of (a) the trailing 10-day average

of the closing price of the Company s common stock on the Nasdaq Capital Market prior to the funding date of the second loan tranche and (b) the closing price of the Company s common stock on the Nasdaq Capital Market on the funding date of the second loan tranche, at an exercise price equal to such divisor.

On December 31, 2013 the Company entered into the Loan Agreement. The Loan Agreement replaced the prior loan and security agreement (the Prior Loan Agreement) which was first entered into in June 2012 and amended in February 2013. The maximum borrowing amount under the Loan Agreement was increased from $1,500,000 to $10,000,000. On the maturity date, the Company also owed to the lender a final payment of $1,050,000 which was presented as a debt discount on the related debt. On September 30, 2014, in conjunction with the New Loan Agreement, this note along with the final loan payment of $1,050,000 was paid in full.

As additional consideration for the cost and risk associated with the Prior Loan Agreement, the Company issued to the lender a warrant to purchase up to 8,334 shares of Series B Preferred Stock in June 2012, and an additional warrant to purchase up to a number of shares of Series B Preferred Stock equal to 5% of the amount loaned under the Prior Loan Agreement on February 27, 2013 and thereafter, subject to adjustment as set forth in the warrant, including without limitation for stock combinations and splits. As a result, following the final advance under the Prior Loan Agreement in July 2013, the warrant became exercisable for 16,667 shares of the Company s Series B Preferred Stock. The warrants issued in 2013 and 2012 were recorded at fair values of $28,300 and $24,500, respectively, and were presented as a debt discount on the related debt to be amortized to interest expense over the term of the Prior Loan Agreement (See Note 9). Both warrants were assumed by Ignyta in connection with the Merger (see Note 2). As a result of the payoff of the original loan, the debt discount was written off on December 31, 2013.

Interest expense due to amortization of the debt discounts for the three months ended September 30, 2014 and 2013 was $71,864 and $5,203, respectively, and for the nine months ended September 30, 2014 and 2013 and for the period from inception (August 29, 2011) through September 30, 2014 was $219,327, $34,629 and $382,883, respectively.

Future minimum principal payments on notes payable are as follows:

Twelve Months ending September 30,	
2015	$
2016	7,700,000
2017	8,400,000
2018	4,900,000
Total	$ 21,000,000

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7. Stockholders Equity

The Company is authorized to issue 150,000,000 shares of common stock and 10,000,000 shares of preferred stock, with the preferred stock having the rights, preferences and privileges that our Board of Directors may determine from time to time. Each share of the Company s common stock is entitled to one vote, and all shares rank equally as to voting and other matters.

On March 19, 2014, the Company completed a secondary public stock offering providing for the issuance and sale to investors of an aggregate of 6,031,750 shares of its common stock at a purchase price of nine dollars and fifteen cents ($9.15) per share for gross proceeds of approximately $55.2 million.

On November 29, 2013, the Company completed a PIPE financing with 195 accredited investors, providing for the issuance and sale to such investors of an aggregate of 1,270,096 shares of its common stock at a purchase price of six dollars ($6.00) per share, for gross proceeds of approximately $7.6 million.

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On November 6, 2013, the Company completed a PIPE financing, providing for the issuance and sale of an aggregate of 7,740,142 shares of its common stock to 52 accredited investors at a purchase price of six dollars ($6.00) per share, for gross proceeds of approximately $46.4 million.

On October 31, 2013, Ignyta, Inc. approved a 100-for-1 reverse stock split of its capital stock, and the Company approved a 3-for-1 reverse stock split of its capital stock (the Reverse Stock Splits). The par value of Ignyta, Inc. s outstanding capital stock changed from $0.0001 to $0.00001 per share on such date. At the closing of the Reincorporation Merger, the par value of the Company s outstanding capital stock changed back from $0.00001 to $0.0001 per share. The stockholders equity section of the accompanying financial statements and all share numbers disclosed throughout the financial statements have been retroactively adjusted to give effect to the Reverse Stock Splits and the Reincorporation Merger.

Series A Convertible Preferred Stock

During 2012, the Company issued 416,667 shares of Series A Preferred Stock at $0.60 per share for proceeds consisting of $250,000 in cash.

During 2011, the Company issued 416,667 shares of Series A Preferred Stock at $0.60 per share for proceeds consisting of $250,000 in cash.

On October 31, 2013, prior to the Reverse Stock Splits, the holders of shares of the Company s Series A Preferred Stock elected to convert all issued and outstanding shares of such preferred stock into shares of common stock at the applicable conversion rate, which was one-to-one.

Series B Convertible Preferred Stock

During 2012, the Company issued 1,835,000 shares of Series B Preferred Stock at $3.00 per share for proceeds consisting of $5,505,000 in cash.

On October 31, 2013, prior to the Reverse Stock Splits, the holders of shares of the Company s Series B Preferred Stock elected to convert all issued and outstanding shares of such preferred stock into shares of common stock at the applicable conversion rate, which was one-to-one.

8. Stock-Based Compensation

On June 11, 2014, the Company adopted the 2014 Plan. The 2014 Plan provides for the issuance of equity awards to employees and non-employees of 3,000,000 shares, plus one share for each share subject to a stock option that was outstanding under the 2011 Plan as of the effective date of the 2014 Plan that subsequently expires, is forfeited or is settled in cash.

On February 28, 2014, the Company adopted the Employment Inducement Incentive Award Plan (the Inducement Plan). The Inducement Plan provided for the issuance of equity awards to new employees of 1,000,000 shares.

In 2011, the Company adopted the 2011 Plan. The 2011 Plan provided for the issuance of incentive stock options to employees and nonstatutory stock options, restricted stock awards, stock appreciation rights and stock bonuses to directors, employees and consultants. In February 2013, October 2013 and December 2013, the 2011 Plan was amended to, among other things, increase the number of shares of the Company s common stock available for issuance thereunder from 166,666 shares to 666,666 shares, to 712,652 shares and to 2,712,652 shares, respectively.

Stock option activity

There are a total of 3,000,000 shares of common stock reserved under the 2014 Plan, plus one share for each share subject to a stock option that was outstanding under the 2011 Plan as of the effective date of the 2014 Plan that subsequently expires, is forfeited or is settled in cash. As of September 30, 2014, 2,101,319 shares remain available under the 2014 Plan. There were a total of 2,712,652 shares of common stock reserved under the 2011 Plan. As of September 30, 2014, 1,607,071 shares remained available; however, under applicable rules of the NASDAQ Stock Market, the Company may not make additional grants under the 2011 Plan unless the 2011 Plan is approved by the Company s stockholders. The Company did not seek stockholder approval and adopted the 2014 Plan. In addition, there were 1,000,000 shares of common stock reserved under the Inducement Plan. As of September 30, 2014, 190,000 shares remained available under the Inducement Plan. From and after the effective date of the 2014 Plan, no additional equity grants may be made by the Company under the 2011 Plan or the Inducement Plan.

At the closing of the Reincorporation Merger, (i) each outstanding option to purchase, or other equity award relating to, Ignyta, Inc. s common stock was deemed to constitute an option to purchase, or other equity award relating to, common stock of the Company with no change in the exercise price or other terms or provisions of the award, and (ii) the shares of Ignyta, Inc. s common stock that remained available for issuance under the Ignyta Plans were deemed to relate to shares of the Company s common stock.

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The options that are granted under the Ignyta Plans and the Inducement Plan are exercisable at various dates and will expire no more than ten years from their dates of grant. The exercise price of each option to be granted under the 2014 Plan shall be determined by the administrator of the 2014 Plan, which is the Company s Board of Directors or the Compensation Committee thereof, and shall not be less than 100% of the fair market value of the Company s common stock on the date the option is granted. Generally, options are granted with an exercise price equal to the fair market value of the Company s common stock on the date of the option grant. For holders of more than 10% of the Company s total combined voting power of all classes of stock, incentive stock options may not be granted at less than 110% of the fair market value of the Company s common stock on the date of grant and for a term not to exceed five years.

A summary of the Company s stock option activity and related information is as follows:

	Options Outstanding	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Balance at December 31, 2011	12,500	$ 0.18		$
Granted	144,159	0.39		
Exercised				
Cancelled				
Balance at December 31, 2012	156,659	0.36		
Granted	1,061,325	4.60		
Exercised	(12,290)	0.24		
Expired	(2,154)	0.54		
Forfeited	(70,387)	0.45		
Balance at December 31, 2013	1,133,153	$ 4.33	9.71	$ 3,026,430
Granted	2,252,000	7.92		
Exercised	(12,962)	0.42		
Expired	(4,999)	0.58		
Forfeited	(238,355)	7.64		
Balance at September 30, 2014	3,128,837	$ 6.68	9.46	$ 4,753,159
Exercisable at September 30, 2014	157,299	$ 0.74	8.23	$ 1,153,281

The fair value of options granted to employees and non-employee directors was estimated at the date of grant using a Black-Scholes option pricing model with the weighted-average assumptions stated below.

	Three Months Ended September 30, 2014	Three Months Ended September 30, 2013
Risk free interest rate	**1.83%**	2.05%
Dividend yield	**0.00%**	0.00%
Volatility	**67.61%**	59.10%
Weighted-average expected life of option (years)	**6**	6

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	Nine Months Ended September 30, 2014	Nine Months Ended September 30, 2013
Risk free interest rate	**1.83%**	1.63%
Dividend yield	**0.00%**	0.00%
Volatility	**65.20%**	59.45%
Weighted-average expected life of option (years)	**6.01**	6

The estimated weighted-average per-share fair value of stock options granted to employees and non-employee directors for the three months ended September 30, 2014 and 2013 was $4.76 and $0.57, respectively and for the nine months ended September 30, 2014 and 2013 was $4.72 and $0.45, respectively.

The fair value of options granted to non-employees was estimated at the vesting date using a Black-Scholes option pricing model with the weighted-average assumptions stated below.

	Three Months Ended September 30, 2014	Three Months Ended September 30, 2013
Risk free interest rate	**0.00%**	2.88%
Dividend yield	**0.00%**	0.00%
Volatility	**0.00%**	57.59%
Weighted-average expected life of option (years)	**0**	10

	Nine Months Ended September 30, 2014	Nine Months Ended September 30, 2013
Risk free interest rate	**2.46%**	2.50%
Dividend yield	**0.00%**	0.00%
Volatility	**67.09%**	58.36%
Weighted-average expected life of option (years)	**9.60**	10

The estimated weighted-average per-share fair value of stock options granted to non-employees for the three months ended September 30, 2014 and 2013 was $0.00

and $0.70, respectively, and for the nine months ended September 30, 2014 and 2013 was $6.65 and $0.57, respectively.

Dividend Yield The Company has never declared or paid dividends on common stock and has no plans to do so.

Expected Volatility Volatility is a measure of the amount by which a financial variable such as a share price has fluctuated or is expected to fluctuate during a period. The Company considered the historical volatility of peer companies and business and economic considerations in order to estimate the expected volatility, due to the Company not being publicly traded for a significant period.

Risk-Free Interest Rate This is the U.S. Treasury rate for the day of each option grant during the quarter having a term that most closely resembles the expected life of the option.

Expected Life of the Option Term This is the period of time that the options granted are expected to remain unexercised. Options granted during the period have a maximum contractual term of ten years. The Company estimates the expected life of the option term based on the simplified method as defined in Staff Accounting Bulletin 110. For non-employee options granted, this is the remaining contractual term of the option as of the reporting date.

Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The Company assesses the forfeiture rate on an annual basis and revises the rate when deemed necessary.

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Stock-based compensation expense for employees and non-employees for the three months ended September 30, 2014 and 2013 was $662,451 and $13,362, respectively, and for the nine months ended September 30, 2014 and 2013 and the period from inception (August 29, 2011) through September 30, 2014 was $1,323,597, $52,348 and $1,688,210, respectively. For the three months ended September 30, 2014 and 2013, $244,549 and $8,878 was recorded to research and development expense, respectively, and $417,902 and $4,484 was recorded to general and administrative expense, respectively. For the nine months ended September 30, 2014 and 2013 and the period from inception (August 29, 2011) through September 30, 2014, $397,808, $38,182 and $625,541 was recorded to research and development expense, respectively, and $925,789, $14,166, and $1,062,669 was recorded to general and administrative expense, respectively.

As of September 30, 2014, there was an additional $11,144,501 of total unrecognized compensation cost related to unvested stock-based awards granted under the Ignyta Plans and the Inducement Plan. This unrecognized compensation cost is expected to be recognized over a weighted-average period of 3.52 years.

Restricted stock activity

In 2011, Ignyta sold 666,668 shares of restricted common stock for gross proceeds of $2,000 in accordance with restricted stock purchase agreements with various advisors. Approximately 600,000 shares were vested immediately and the remaining 66,668 are subject to vesting requirements based on future service.

The terms of each of the agreements state that the Company has the right to repurchase the unvested shares of stock if the shareholder stops providing services to the Company. The Company repurchased 13,334 shares of common stock in 2012. The Company records stock-based compensation expense, calculated as the difference between the fair value of the common stock at each reporting period less the proceeds received, upon vesting of the restricted stock. Related stock-based compensation for the three months ended September 30, 2014 and 2013 was $15,794 and $2,040, respectively, and for the nine months ended September 30, 2014 and 2013 and the period from inception (August 29, 2011) through September 30, 2014 was $50,574, $5,280 and $80,554, respectively. All stock-based compensation relating to restricted stock was expensed to research and development. At September 30, 2014, 637,334 shares were vested and 16,000 shares remained unvested.

On May 20, 2013, in connection with Ignyta s merger with Actagene, Ignyta issued 1,583,336 shares of restricted common stock in exchange for the cancellation of all of the outstanding shares of Actagene (see Note 3). In February of 2014, in connection with the termination of employment of an employee, the Company repurchased 400,000 restricted shares. Of the remaining restricted shares, approximately 1,000,000 shares were vested immediately and 183,336 are subject to vesting requirements based on future service. The shares vest over four years, with one-third having vested in February 2014 and the remaining unvested shares vesting over the next 36 months. Related stock-based compensation for the three months ended September 30, 2014 and 2013 was $21,927 and $0, respectively, and for the nine months ended September 30, 2014 and 2013 and the period from inception (August 29, 2011) through September 30, 2014 was $143,331, $0 and $143,331, respectively. All stock-based compensation relating to restricted stock was expensed to research and development. At September 30, 2014, 1,143,983 shares were vested and 39,353 shares remained unvested.

All of the foregoing restricted stock was exchanged for shares of Ignyta, Inc. common stock in connection with the Merger and for the Company s common stock in connection with the Reincorporation Merger (see Note 2).

9. Warrants

On September 30, 2014, the Company issued two warrants to acquire an aggregate of up to 37,849 shares of its common stock in connection with the New Loan Agreement. The warrants both have an exercise price of $7.518 per share and are exercisable at the option of the holder, in whole or in part, at any time until September 30, 2021. The terms of such warrants provide for adjustments in the event of certain stock dividends, stock splits, recapitalizations, reclassifications and consolidations.

The Company valued the warrants at $208,400 in the aggregate using a binomial model with an exercise price of $7.518, risk free interest rate of 2.22%, volatility of 69.7%, and a useful life of 7 years. The entire amount was recorded as a debt discount on the related debt.

On November 6, 2013, the Company issued Nerviano Medical Sciences S.r.l. (NMS) a warrant to acquire up to 16,667 shares of its common stock in connection with the license agreement between the Company and NMS. The warrant has an exercise price of $6.00 per share and is exercisable at the option of the holder, in whole or in part, at any time until November 6, 2018. The terms of such warrant provide for adjustments in the event of certain stock dividends, stock splits, recapitalizations, reclassifications and consolidations. Upon exercise, the aggregate exercise price of the warrant issued is payable by NMS in cash.

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The Company recognized warrant expense of $47,600 using a binomial model with an exercise price of $6.00, risk free interest rate of 1.68%, volatility of 54.8%, and a useful life of 4.85 years. The entire amount was expensed to research and development in 2013.

During 2012, the Company issued a warrant to purchase 8,334 shares of Series B Preferred Stock in connection with the Prior Loan Agreement (see Note 6). The exercise price of the warrant is $3.00 per share.

On February 27, 2013, the Company issued a warrant to purchase up to a number of shares of Series B Preferred Stock equal to 5% of the amount loaned under the Prior Loan Agreement on February 27, 2013 and thereafter, subject to adjustment as set forth in the warrant, including without limitation for stock combinations and splits (see Note 6). As a result, following the February 2013 and July 2013 advances under the Prior Loan Agreement, the warrant became exercisable for 16,667 shares of the Company s Series B Preferred Stock. The exercise price of the warrant is $3.00 per share and the warrant expires February 27, 2020.

The exercise price of the warrants issued in conjunction with the 2012 and 2013 loan financings is protected against dilutive financing through the term of the warrants. Pursuant to ASC 815-15 and ASC 815-40, the fair value of the warrants was recorded as a derivative liability on the issuance dates.

Each of the warrants was valued at the grant date and at the end of each reporting period thereafter.

The Company revalued all of the warrants at the end of each reporting period, and the estimated fair value of the outstanding warrant liability was $155,500 and $47,000 at September 30, 2014 and 2013, respectively. The change in the estimated fair value of the derivative liability resulted in other expense of $26,100 for the nine month period ended September 30, 2014 and other income of $5,800 for the nine month period ended September 30, 2013.

The derivative liabilities were valued at their issuance dates and at the end of each reporting period using a binomial pricing model and the following weighted average assumptions:

	September 30, 2014	September 30, 2013
Expected volatility	**67.3%**	40.8%
Risk-free interest rate	**1.84%**	1.81%
Dividend yield	**0.00%**	0.00%
Remaining expected term of underlying securities (years)	**5.32**	6.32

10. Income Taxes

The Company maintains deferred tax assets that reflect the net tax effects of temporary differences between the book values of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. These deferred tax assets include net operating loss carryforwards, deferred revenue and stock-based compensation. In assessing the potential for realization of deferred tax

assets, the Company considers whether it is more likely than not that some or all of the deferred tax assets will not be realized.

The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during periods in which those temporary differences become deductible. The Company considers projected future taxable income and planning strategies in making this assessment. Based on the level of historical operating results and projections for the taxable income for the future, the Company has determined that it is more likely than not that the deferred tax assets will not be realized. Accordingly, the Company has recorded a valuation allowance to reduce deferred tax assets to zero. The Company may not ever be able to realize the benefit of some or all of the federal and state loss carryforwards, either due to ongoing operating losses or due to ownership changes, which limit the usefulness of the loss carryforwards.

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11. Commitments and Contingencies

Capital leases

On September 29, 2014, the Company entered into a capital lease agreement for the purchase of certain lab equipment. As of September 30, 2014, property held under the current capital lease was as follows:

	September 30, 2014
Lab equipment	$ 170,000
	170,000
Less accumulated depreciation and amortization	
Total	$ 170,000

There was no depreciation expense recorded at September 30, 2014 with respect to such capital lease.

As of September 30, 2014, future minimum payments under all capital leases are as follows:

Twelve Months ending September 30,	Lease Payment
2015	$ 62,061
2016	62,061
2017	62,060
Total minimum payments	$ 186,182
Less amounts representing interest	(16,182)
Present value of net minimum payments	$ 170,000
Less current portion	(53,311)
Long-term capital lease obligations	$ 116,689

Operating leases

The Company leases office space under non-cancelable operating leases expiring on various dates through October 2019. Rent expense under those operating leases for the three months ended September 30, 2014 and 2013 was $131,202 and $41,414, respectively, and for the nine months ended September 30, 2014 and 2013, and for the period from inception (August 29, 2011) through September 30, 2014 was $288,344, $100,796 and $465,215, respectively.

The Company leases lab equipment under a non-cancelable operating lease that expires in March 2016. Monthly payments are $5,758. Rent expense under that operating lease for the three months ended September 30, 2014 and 2013 was $22,126 and $22,126, respectively, and for the nine months ended September 30, 2014 and 2013, and for the period from inception (August 29, 2011) through September 30, 2014 was $66,378, $38,494 and $126,998, respectively.

Future minimum lease payments required under the operating leases are as follows:

Twelve Months Ending September,	
2015	$ 627,200
2016	776,500
2017	764,200
2018	787,100
2019	810,800
Thereafter	68,700
Total	$ 3,834,500

License agreements

On August 4, 2014, the Company entered into a license agreement with NMS granting the Company an exclusive license to its RXDX-103 and RXDX-104 development programs, and related intellectual property. Under the license agreement, the Company made an initial payment to NMS of $3.5 million in August 2014. The entire amount was expensed to research and development as no future benefit can be determined at this time. Tiered royalties in the mid-single digits to low double digits will be paid based upon aggregate annual net sales. The agreement also requires that the Company makes development and regulatory milestone payments to NMS of up to $102.0 million in the aggregate if specified clinical study initiations and regulatory approvals are achieved across multiple products or indications.

The Company has entered into a license agreement with NMS which became effective on November 6, 2013, whereby the Company obtained an exclusive license to the Company s RXDX-101 and RXDX-102 product candidates, and related intellectual property. An initial payment of $7,000,000 was paid in November 2013. The entire amount was expensed to research and development in 2013 as no future benefit can be determined at this time. In addition, NMS was issued on November 6, 2013 a five

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year warrant to purchase 16,667 shares of our common stock at an exercise price per share of six dollars ($6.00). Tiered royalties in the low single digits to mid double digits will be paid based upon aggregate annual net sales. The agreement also requires that the Company makes development and regulatory milestone payments to NMS of up to $105.0 million in the aggregate if specified clinical study initiations and regulatory approvals are achieved across multiple products or indications.

On March 31, 2014, the Company entered into an agreement with a contract research organization for clinical studies to be conducted both within and outside the U.S., at an estimated cost of approximately $10 million over a two-year period.

12. Concentrations

Credit risk

The Company maintains cash balances at various financial institutions. Accounts at these institutions are secured by the Federal Deposit Insurance Corporation. At times these balances exceed federally insured limits. The Company has not experienced any losses in such accounts.

With respect to our available-for-sale securities, our primary exposure to market risk is interest rate sensitivity. This means that a change in prevailing interest rates may cause the value of the investment to fluctuate. For example, if we purchase a security that was issued with a fixed interest rate and the prevailing interest rate later rises, the value of our investment will probably decline. Currently, our holdings are in money market funds and available-for-sale securities, and therefore this interest rate risk is minimal. To minimize our interest rate risk going forward, we intend to continue to maintain our portfolio of cash, cash equivalents and available-for-sale securities in a variety of securities consisting of money market funds and debt securities, all with various maturities. In general, money market funds are not subject to market risk because the interest paid on such funds fluctuates with the prevailing interest rate. We also generally time the maturities of our investments to correspond with our expected cash needs, allowing us to avoid realizing any potential losses from having to sell securities prior to their maturities.

Our cash is invested in accordance with a policy approved by our Board of Directors which specifies the categories, allocations, and ratings of securities we may consider for investment. We do not believe our cash, cash equivalents and available-for-sale securities have significant risk of default or illiquidity. We made this determination based on discussions with our treasury managers and a review of our holdings. While we believe our cash, cash equivalents and available-for-sale securities are well diversified and do not contain excessive risk, we cannot provide absolute assurance that our investments will not be subject to future adverse changes in market value.

13. Related Parties

In 2012, the Company executed an employee lease agreement with its majority stockholder. Under the terms of the agreement, the Company is reimbursed for certain administrative services provided to the related party. In addition, the Company was reimbursed for various operating expenses related to shared utilities and telecommunications and/or may make payments to its majority shareholder for these shared operating expenses.

Total reimbursements received during the three months ended September 30, 2014 and 2013 was $0 and $332, respectively, and for the nine months ended September 30, 2014 and 2013 and the period from inception (August 29, 2011) through September 30, 2014 was $0, $5,704 and $19,729, respectively. There was $0 in accounts receivable at September 30, 2014 and 2013, respectively. Total payments made during the three months ended September 30, 2014 and 2013 was $0 and $621, respectively, and for the nine months ended September 30, 2014 and 2013 and the period from inception (August 29, 2011) through September 30, 2014 was $1,165, $23,031 and $40,215, respectively.

In May 2013, the Company and Actagene effected a merger pursuant to which Actagene merged with and into the Company. The majority stockholder of Ignyta was also the majority stockholder of Actagene, and representatives of the majority stockholder controlled the day to day operations and were on the board of directors of each entity (see Note 3).

14. 401(k) Plan

In 2014, the Company established a defined contribution plan, organized under Section 401(k) of the Internal Revenue Code, which allows employees who have completed at least one month of service and have reached age 21 to defer up to 100% of their pay on a pre-tax basis. The Company does not contribute a match to the employees contribution.

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Item 2. Management s Discussion and Analysis of Financial Condition and Results of Operations

The interim financial statements and this Management s Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with the financial statements and notes thereto for the year ended December 31, 2013, and the related Management s Discussion and Analysis of Financial Condition and Results of Operations, both of which are contained in our Annual Report on Form 10-K for the year ended December 31, 2013. In addition to historical information, this discussion and analysis contains forward-looking statements that involve risks, uncertainties, and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of certain factors, including but not limited to those set forth under the caption Risk Factors in the Annual Report on Form 10-K for the year ended December 31, 2013 and the caption Risk Factors in this Quarterly Report on Form 10-Q.

On October 31, 2013, Ignyta Operating, Inc., a private Delaware corporation previously named Ignyta, Inc., or Ignyta Operating, merged with and into IGAS Acquisition Corp., a wholly owned subsidiary of Ignyta, Inc., a Nevada corporation previously named Infinity Oil & Gas Company, or Ignyta, formerly a shell company under applicable rules of the Securities and Exchange Commission, or the SEC. Ignyta Operating survived the merger as a wholly owned subsidiary of Ignyta. In the merger, Ignyta acquired the business of Ignyta Operating and continued the business operations of Ignyta Operating. The merger is accounted for as a reverse merger and recapitalization, with Ignyta Operating as the acquirer and Ignyta as the acquired company for financial reporting purposes. As a result, the assets and liabilities and the operations that are reflected in the historical financial statements prior to the merger are those of Ignyta Operating and are recorded at the historical cost basis of Ignyta Operating, and the consolidated financial statements after completion of the merger will include the assets and liabilities of Ignyta and Ignyta Operating, the historical operations of Ignyta Operating and the operations of the combined enterprise of Ignyta and Ignyta Operating from and after the closing date of the merger. As a result of the accounting treatment of the merger and the change in Ignyta s business and operations from a shell company to a precision oncology biotechnology company, a discussion of the past financial results of the shell company is not pertinent or material, and the following discussion and analysis of our financial condition and results of operations are based on Ignyta Operating s financial statements.

On June 12, 2014, Ignyta, Inc. merged with and into Ignyta Operating, with Ignyta Operating surviving the merger and changing its name to Ignyta, Inc. This merger had no material impact on the accounting of the company.

Unless the context indicates or otherwise requires, the terms we, us, our and our company refer to (i) Ignyta Operating for discussions relating to periods before and through October 31, 2013, (ii) Ignyta and its consolidated subsidiary, Ignyta Operating, for discussions relating to periods after October 31, 2013 and through June 12, 2014, and (iii) Ignyta, Inc., the surviving company to the June 12, 2014 merger, for discussions relating to periods after June 12, 2014.

Overview

We were incorporated under the laws of the State of Delaware on August 29, 2011 with the name NexDx, Inc. We changed our name to Ignyta, Inc. on October 8, 2012. On October 31, 2013, a wholly owned subsidiary of Ignyta merged with and into our company, pursuant to which we became the wholly owned subsidiary of Ignyta. We changed our name to Ignyta Operating, Inc. in connection with the closing of the merger. On October 31, 2013, prior to the closing of the merger, (i) all then-outstanding shares of each series of our preferred stock were voluntarily converted by the holders thereof into shares of our common stock in accordance with our certificate of incorporation, and (ii) we effected a three-to-one reverse stock split of our issued and outstanding shares of capital stock. All share information in this discussion and analysis relating to our capital stock gives retroactive effect to that reverse stock split. On May 20, 2013, we completed our acquisition of Actagene Oncology, Inc., or Actagene, which merged with

and into our company on that date.

On June 12, 2014, Ignyta Operating merged with and into Ignyta, with Ignyta Operating surviving the merger, resulting in our reincorporation from Nevada to Delaware. In connection with this merger, each share of Ignyta common stock was converted into one share of Ignyta Operating common stock, and we changed our name to Ignyta, Inc.

We are a precision oncology biotechnology company dedicated to discovering or acquiring, then developing and commercializing, targeted new drugs for cancer patients whose tumors harbor specific molecular alterations. We are pursuing an integrated therapeutic and diagnostic, or Rx/Dx, strategy, where we anticipate pairing each of our product candidates with biomarker-based companion diagnostics that are designed to identify the patients who are most likely to benefit from the precisely targeted drugs we develop. Our current development plans focus on our lead product candidate: RXDX-101, a tyrosine kinase inhibitor directed to the Trk family tyrosine kinase receptors (TrkA, TrkB and TrkC), ROS1 and ALK proteins, which is in two Phase I/II clinical studies in molecularly defined patient populations for the treatment of solid tumors. We have entered into a license agreement with Nerviano Medical Sciences, S.r.l., or NMS, granting us exclusive global development and marketing rights to RXDX-101 which became effective in November 2013.

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In August 2014, we entered into a second license agreement with NMS pursuant to which NMS granted us exclusive global development and marketing rights to RXDX-103, a development candidate stage inhibitor of the cell division cycle 7-related, or Cdc7, protein kinase and RXDX-104, a lead optimization stage program designed to inhibit the RET tyrosine kinase.

We also have our Spark discovery programs, which are directed to emerging oncology targets identified through mining of our database of information from proprietary and publicly available tumor samples, called Oncolome . Our strategy is to leverage the biomarker insights that we gain through our genetic and epigenetic mining of our Oncolome database and the knowledge of cancer biology of our management and drug discovery team, with the goal of discovering or acquiring, validating, developing and commercializing a pipeline of novel product candidates for the treatment of cancer.

Since inception, our operations have focused on organizing and staffing our company, business planning, raising capital, assembling our core capabilities in genetic and epigenetic based biomarker and drug target discovery, identifying potential product candidates and developing such candidates. Our product candidate development operations include preparing, managing and conducting preclinical and clinical studies and trials, preparing regulatory submissions relating to those product candidates and establishing and managing relationships with third parties in connection with all of those activities. We expect that in the future our operations may also, if regulatory approval is obtained, include pursuing the commercialization of our product candidates.

Financial Operations Overview

Revenue

To date, we have not generated any material revenue from services, product sales or otherwise.

In the future, we expect that we will seek to generate revenue primarily from product sales, but may also seek to generate revenue from research funding, milestone payments and royalties on future product sales in connection with any out-license or other strategic relationships we may establish.

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for our research activities, including our drug and biomarker discovery efforts and the development of our product candidates, which include:

- license fees;
- expenses incurred under agreements with third parties, including consultants and advisors we engage for research-related services and any contract research organizations, or CROs, that we may engage in connection with conducting preclinical and clinical activities on our behalf;
- employee-related expenses, including salaries, benefits and stock-based compensation expense;

the cost of laboratory supplies; and

facilities, depreciation, and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance and other operating costs.

Research and development costs are expensed as incurred. Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are delivered or the services are performed.

We have not yet begun tracking our internal and external research and development costs on a program-by-program basis. As such, we do not have historical research and development expenditures by program and we use our employee and infrastructure resources across multiple research and development programs.

Research and development activities are central to our business model. Our research and development programs that we expect will be our focus in the immediate future consist of the development of RXDX-101, RXDX-103 and RXDX-104, and drug discovery activities for the development of our Spark discovery programs. All of those research and development programs are in the early stage, and since product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials, we expect research and development costs relating to each of those programs to increase significantly for the foreseeable future. However, the successful development of any of those product candidates, or any others we may seek to pursue, is highly uncertain. As such, at this time, we cannot reasonably estimate or know the nature, timing and estimated costs of the efforts that will be necessary to complete the remainder of the development of these product candidates, or whether any of these product candidates will reach successful

commercialization. We are also unable to predict when, if ever, any net cash inflows will commence from any of the product candidates we currently or may in the future pursue. This lack of predictability is due to the numerous risks and uncertainties associated with developing medicines, many of which, such as our ability to obtain approvals to market and sell those medicines from the U.S. Food and Drug Administration, or FDA, and other applicable regulatory authorities, are beyond our control, including the uncertainty of:

- establishing an appropriate safety profile with toxicology studies adequate to submit to the FDA in an Investigational New Drug application, or IND, or comparable applications to foreign regulatory authorities;
- successful enrollment in and adequate design and completion of clinical trials;
- receipt of marketing approvals from applicable regulatory authorities, including the FDA and comparable foreign authorities;
- establishing commercial manufacturing capabilities or, more likely, seeking to establish arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- launching commercial sales of the products, if and when approved, including establishing an internal sales and marketing force and/or establishing relationships with third parties for such purpose;
- developing and commercializing, individually or with third-party collaborators, companion diagnostics; and
- a continued acceptable safety profile of the products following approval, if any.

A change in the outcome of any of these variables with respect to the development of any of our product candidates would significantly change the costs, timing and likelihood of success associated with the development of that product candidate.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in executive, finance, accounting, business development, legal and human resources functions. Other significant costs include facility costs not otherwise included in research and development expenses, legal fees relating to patent and corporate matters and fees for accounting and consulting services.

We anticipate that our general and administrative expenses will increase in the future to support continued research and development activities, potential commercialization of our product candidates and increased costs of operating as a public company. These increases will likely include increased costs related to facilities expansion, the hiring of additional personnel and increased fees to outside consultants, lawyers and accountants, among other expenses. Additionally, increased costs associated with operating as a public company are expected to include expenses related to services associated with maintaining compliance with requirements of the SEC, insurance and investor relations costs.

Critical Accounting Policies and Estimates

This discussion and analysis of our financial condition and results of operations is based on our condensed financial statements, which we have prepared in accordance with United States generally accepted accounting principles. The preparation of these condensed financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of expenses during the reporting periods. We base our estimates on historical experience and on various other factors and assumptions that we believe are reasonable under the circumstances at the time the estimates are made, the results of which form the basis for making judgments about the book value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We periodically evaluate our estimates and judgments, including those described in greater detail below, in light of changes in circumstances, facts and experience.

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Our critical accounting policies are those accounting principles generally accepted in the United States that require us to make subjective estimates and judgments about matters that are uncertain and are likely to have a material impact on our financial condition and results of operations, as well as the specific manner in which we apply those principles. Our significant accounting policies are described in more detail in the notes to our financial statements included in this Quarterly Report on Form 10-Q and our Annual Report on Form 10-K for the year ended December 31, 2013. We believe the critical accounting policies used in the preparation of our financial statements that require significant estimates and judgments are as follows:

Revenue Recognition

To date, we have not generated any material revenue.

Income Taxes

Deferred income taxes are recognized for the tax consequences in future years of differences between the tax basis of assets and liabilities and their financial reporting amounts at each year end based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized. Income tax expense is the combination of the tax payable for the year and the change during the year in deferred tax assets and liabilities.

Cash and Cash Equivalents

We consider all highly liquid investments with an original maturity of 90 days or less when purchased to be cash equivalents. Cash equivalents primarily represent amounts invested in money market funds whose cost equals market value.

Investments

Investments consist of corporate notes and bonds and commercial paper. We classify investments as available-for-sale at the time of purchase. All investments are recorded at estimated fair value. Unrealized gains and losses for available-for-sale securities are included in accumulated other comprehensive income, a component of stockholders equity. We evaluate our investments as of each balance sheet date to assess whether those with unrealized loss positions are other than temporarily impaired. Impairments are considered to be other-than-temporary if they are related to deterioration in credit risk or if it is likely that we will sell the securities before the recovery of our cost basis. Realized gains and losses and declines in value judged to be other-than-temporary are determined based on the specific identification method and are reported in other income (expense), net in the statement of operations. No other-than-temporary impairment charges have been recognized since inception.

Stock-Based Compensation

We account for stock-based compensation in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718, *Compensation Stock Compensation,* which establishes accounting for equity instruments exchanged for employee services. Under such provisions, stock-based compensation cost is measured at the grant date, based on the calculated fair value of the award, and is recognized as an expense, under the straight-line method, over the employee s requisite service period (generally the vesting period of the equity grant).

We account for equity instruments, including restricted stock or stock options, issued to non-employees in accordance with authoritative guidance for equity based payments to non-employees. Stock options issued to non-employees are accounted for at their estimated fair value determined using the Black-Scholes option-pricing model. The fair value of options granted to non-employees is re-measured as they vest, and the resulting increase in value, if any, is recognized as expense during the period the related services are rendered. Restricted stock issued to non-employees is accounted for at its estimated fair value as it vests.

Derivative Liabilities

We account for our warrants as either equity or liabilities based upon the characteristics and provisions of each instrument. Warrants classified as derivative liabilities are recorded on our balance sheet at their fair value on the date of issuance and revalued on each subsequent balance sheet date until such instruments are exercised or expire, with any changes in the fair value between reporting periods recorded as other income or expense. We estimate the fair value of these liabilities using option pricing models and assumptions that are based on the individual characteristics of the warrants or instruments on the valuation date, as well as assumptions for future events, expected volatility, expected life, yield and risk-free interest rate.

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Recently Issued Accounting Pronouncements

There are no recent accounting pronouncements likely to have a material impact on the financial statements.

Results of Operations

Comparison of the Three Months Ended September 30, 2014 and 2013

The following table summarizes our results of operations for the three months ended September 30, 2014 and 2013, together with the changes in those items in dollars and as a percentage:

	Three Months ended September 30,		Dollar change	% change
	2014	2013		
	(in thousands)			
Revenue	$	$	$	%
Operating expenses:				
Research and development	8,623	724	7,899	1,091
General and administrative	2,223	485	1,738	358
Loss from operations	(10,846)	(1,209)	(9,637)	797
Other income (expense)	143	(30)	173	577
Provision for income taxes				
Net loss	$ (10,703)	$ (1,239)	$ (9,464)	764%

Revenue. We recorded no revenue for the three months ended September 30, 2014 or the three months ended September 30, 2013.

Research and Development Expense. Research and development expense increased by approximately $7.9 million for the three months ended September 30, 2014 as compared to the three months ended September 30, 2013, an increase of 1,091%. The increase in research and development expenses was primarily attributable to the payment of the upfront license fee of $3.5 million to NMS for rights to our RXDX-103 and RXDX-104 product candidates, as well as an increase in activities relating to development of our RXDX-101 product candidate. We also incurred an increase between periods for personnel expenses related to hiring and engaging additional employees and consultants to help us advance our product candidates and facilities related expenses as a result of the expansion of our leased facilities space.

General and Administrative Expense. General and administrative expenses increased by approximately $1.7 million for the three months ended September 30, 2014 as compared to the three months ended September 30, 2013, an increase of 358%. The increase in general and administrative expenses was primarily attributable to increases in personnel, audit, legal and intellectual property costs, some of which resulted from activities relating to operating as a public company, and facilities related expenses as a result of the expansion of our leased facilities space.

Other Income (Expense). Other income increased by approximately $0.2 million for the three months ended September 30, 2014 as compared to the three months ended September 30, 2013, an increase of 577%. The increase in other income was primarily attributable to interest income earned on our available for sale securities, offset by increased interest owed under loan agreement with Silicon Valley Bank, or SVB, as well as the change in the fair

value of the warrant liability associated with the warrants we issued to SVB.

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Comparison of the Nine Months Ended September 30, 2014 and 2013

The following table summarizes our results of operations for the nine months ended September 30, 2014 and 2013, together with the changes in those items in dollars and as a percentage:

	Nine Months ended September 30, 2014	2013	Dollar change	% change
	(in thousands)			
Revenue	$ 150	$	$ 150	N/A
Operating expenses:				
Research and development	14,381	1,945	12,436	639
General and administrative	6,018	1,389	4,629	333
Loss from operations	(20,249)	(3,334)	(16,915)	507
Other income (expense)	22	(60)	82	137
Provision for income taxes	5	2	3	150
Net loss	$ (20,232)	$ (3,396)	$ (16,836)	496%

Revenue. We recorded revenue of $150,000 for the nine months ended September 30, 2014. We did not record any revenue for the nine months ended September 30, 2013. The increase was due to a one-time service-fee for research services conducted in the second quarter of 2014.

Research and Development Expense. Research and development expense increased by approximately $12.4 million for the nine months ended September 30, 2014 as compared to the nine months ended September 30, 2013, an increase of 639%. The increase in research and development expenses was primarily attributable to the payment of the upfront license fee of $3.5 million to NMS for rights to our RXDX-103 and RXDX-104 product candidates, as well as an increase in activities relating to development of our RXDX-101 product candidate. We also incurred an increase between periods for personnel expenses related to hiring and engaging additional employees and consultants to help us advance our product candidates and facilities related expenses as a result of the expansion of our leased facilities space.

General and Administrative Expense. General and administrative expenses increased by approximately $4.6 million for the nine months ended September 30, 2014 as compared to the nine months ended September 30, 2013, an increase of 333%. The increase in general and administrative expenses was primarily attributable to increases in personnel costs and investor relations, audit, legal and intellectual property costs, some of which resulted from activities relating to operating as a public company and completion of our March 2014 public offering of our common stock, and facilities related expenses as a result of the expansion of our leased facilities space.

Other Income (Expense). Other income increased by approximately $0.1 million for the nine months ended September 30, 2014 as compared to the nine months ended September 30, 2013, an increase of 137%. The increase in other income was attributable to interest income earned on our available for sale securities, offset by increased interest owed under our loan agreement with SVB, as well as the change in the fair value of the warrant liability associated with the warrants we issued to SVB.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception, and through September 30, 2014, we have raised an aggregate of approximately $146 million to fund our operations, of which approximately $21 million was received from the incurrence of indebtedness under our September 2014 loan agreement with SVB (with approximately $11 million of such amount used to repay our then-existing loan with SVB), $55 million was received from our issuance and sale of our common stock in an underwritten public offering in March 2014, approximately $54 million was received from our issuance and sale of our common stock in two private placements in November 2013, approximately $6 million was received from our issuance and sale of our preferred stock and $10 million was received from the incurrence of indebtedness under our December 2013 loan agreement with SVB. As of September 30, 2014, we had also received a small amount of funding from our issuance of common stock upon the exercise from time to time of stock options, and from our issuance of common stock to our founders in August and September 2011. As of September 30, 2014, we had approximately $94.7 in cash, cash equivalents and available-for-sale securities, consisting of approximately $21.5 million in cash and cash equivalents and approximately $73.2 million in available-for-sale securities.

Amended and Restated Loan Agreement with SVB. On September 30, 2014, we entered into an amended and restated loan agreement with SVB under which we incurred $21 million of indebtedness, approximately $11 million of which was used to repay our then-existing loan with SVB. We also have an option to receive an additional $10 million loan tranche, which may be drawn down by us at any time prior to September 30, 2015, provided that we have initiated the Phase IIa portion of our ongoing, global Phase I/II clinical study of RXDX-101 and subject to other customary conditions for funding. We will be required to pay interest on the borrowings under the amended and restated loan agreement at a fixed, per-annum rate of 8.56% on a monthly basis through October 31, 2015. Thereafter, we will be required to repay the principal plus interest in 30 equal monthly installments. The number of months of interest-only payments and the number of months over which the principal will be amortized will each be increased by six months if the second loan tranche has been drawn down or we have raised net proceeds of at least $50 million through the offering of our equity securities, in each case prior to October 31, 2015. Further, the terms of the amended and restated loan agreement require that we make a final lump-sum payment of 3% of the principal amount of the loans thereunder. We may elect to prepay all amounts owed under either or both of the loan tranches prior to the maturity date therefor, provided that a prepayment fee is also paid, equal to 2% of the amount prepaid if the prepayment occurs prior to September 30, 2015, or 1% of the amount prepaid if the prepayment occurs thereafter.

Pursuant to the amended and restated loan agreement, we are bound by certain affirmative and negative covenants setting forth actions that we must and must not take during the term thereof. Upon the occurrence of an event of default under the amended and restated loan agreement, subject to cure periods for certain events of default, all amounts owed by us thereunder shall begin to bear interest at a rate of 11.56% and may be declared immediately due and payable by SVB. We have granted SVB a security interest in substantially all of our personal property, rights and assets, other than intellectual property, to secure the payment of all amounts owed to SVB under the amended and restated loan agreement. We have also agreed not to encumber any of our intellectual property without SVB s prior written consent.

In connection with entering into the amended and restated loan agreement, we issued to SVB and its affiliate warrants to purchase an aggregate of 37,849 shares of our common stock. The warrants are exercisable immediately, have a per-share exercise price of $7.518 and have a term of seven years. If we draw down the second loan tranche, at that time we will issue to SVB and its affiliate additional warrants which will be exercisable immediately and have a term of seven years. Those warrants will be exercisable for an aggregate number of shares equal to $135,500 divided by the lower of (a) the trailing 10-day average of the closing price of our common stock on the Nasdaq Capital Market prior to the funding date of the second loan tranche and (b) the closing price of our common stock on the Nasdaq Capital Market on the funding date of the second loan tranche, at an exercise price equal to such divisor.

Public Offering. In March 2014, we issued an aggregate of 6,031,750 shares of our common stock in an underwritten public offering. All of the shares issued in the public offering were sold by the underwriters at a purchase price per share of $9.15, for aggregate gross proceeds of approximately $55.2 million and aggregate net proceeds, after deducting underwriting discounts and commissions and other offering fees and expenses, of approximately $51.6 million.

Private Placements. In November 2013, we entered into securities purchase agreements with accredited investors providing for the issuance and sale to such investors of an aggregate of 9,010,238 shares of our common stock in private placement transactions. All of the shares issued in the private placements were sold at a purchase price per share of $6.00, for aggregate gross proceeds of approximately $54.1 million and aggregate net proceeds, after deducting placement agent and other offering fees and expenses, of approximately $51.0 million.

Preferred Stock Financings. We received approximately $6.0 million from the issuance and sale of our series A preferred stock and our series B preferred stock prior to the closing of our October 31, 2013 merger. We received

approximately $500,000 from our issuance and sale of an aggregate of 833,334 shares of our series A preferred stock at a price per share of $0.60 to one investor in October 2011 and March 2012. We received approximately $5.5 million from our issuance and sale of an aggregate of 1,835,000 shares of our series B preferred stock at a price per share of $3.00 to a number of investors in June 2012 and December 2012. On October 31, 2013, prior to the closing of the merger in which we became the wholly owned subsidiary of Ignyta, all then-outstanding shares of each series of our preferred stock were voluntarily converted by the holders thereof into shares of our common stock in accordance with our certificate of incorporation.

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Cash Flows

The following table provides information regarding our cash flows for the nine months ended September 30, 2014 and 2013:

	Nine Months ended, September 30,	
	2014	2013
	(in thousands)	
Net cash (used in) operating activities	$ (15,913)	$ (3,298)
Net cash (used in) investing activities	(75,741)	(257)
Net cash provided by financing activities	61,381	1,008
Net decrease in cash and cash equivalents	$ (30,273)	$ (2,547)

Net Cash Used in Operating Activities. The use of cash in all periods resulted primarily from our net losses adjusted for non-cash charges and changes in components of working capital. Net cash used in operating activities was approximately $15.9 million during the nine months ended September 30, 2014 compared to approximately $3.3 million during the nine months ended September 30, 2013. The increase in cash used in operating activities was driven primarily by our net loss.

Net Cash Used in Investing Activities. Net cash used in investing activities was approximately $75.7 million during the nine months ended September 30, 2014 compared to approximately $0.3 million during the nine months ended September 30, 2013. The cash used in investing activities was primarily the result of investments in available-for-sale securities and to a lesser extent purchases of fixed assets.

Net Cash Provided by Financing Activities. Net cash provided by financing activities was approximately $61.4 million during the nine months ended September 30, 2014 compared to approximately $1.0 million during the nine months ended September 30, 2013. The cash provided by financing activities for the nine months ended September 30, 2014 was primarily the result of our September 2014 loan arrangement with SVB and our March 2014 public offering of common stock.

Funding Requirements

We expect our expenses to increase in connection with the ongoing development and manufacturing of RXDX-101, RXDX-103 and RXDX-104 and as we continue the research and development of our Spark discovery programs. In addition, if we obtain marketing approval for any of our product candidates in the future, which we anticipate would not occur for several years if at all, we expect we would then incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution to the extent that such sales, marketing and distribution are not the responsibility of any collaborators with whom we may engage. Further, we expect to incur additional costs associated with operating as a public company.

Even after giving effect to our September 2014 loan arrangement with SVB and our March 2014 and November 2013 common stock offerings, we expect to need to obtain additional funding in order to continue our operations and pursue our business plans. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or future commercialization efforts.

We expect that our existing cash, cash equivalents and available-for-sale securities will enable us to fund our operations and capital expenditure requirements for at least the next twelve months. Our future capital requirements will depend on many factors, including:

- the scope, progress, results and costs of drug discovery, preclinical development, laboratory testing and clinical trials for our product candidates;
- the scope, progress, results and costs of companion diagnostic development for our product candidates;
- the achievement of development milestones that trigger payments due to our licensing partners;
- the extent to which we acquire or in-license other medicines, biomarkers and/or technologies;
- the costs, timing and outcome of regulatory review of our product candidates;
- the costs of future commercialization activities, including product sales, marketing, manufacturing and distribution, for any of our product candidates for which we receive marketing approval (to the extent that such sales, marketing, manufacturing and distribution are not the responsibility of collaborators with whom we may engage);
- revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims; and

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our ability to establish and maintain development, manufacturing or commercial collaborations on favorable terms, if at all.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of medicines that we do not expect to be commercially available for many years, if at all. Accordingly, we will likely need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. Any or all of those sources of funding may not be available when needed on acceptable terms or at all. Except for our conditional option to acquire a second loan tranche of $10 million from SVB, we do not have any committed external source of additional funds. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the ownership interest of existing equityholders will be diluted. Also, the terms of any additional equity securities that may be issued in the future may include liquidation or other preferences that adversely affect the rights of common stockholders. Debt financing may not be available when needed and may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings or relationships with third parties when needed or on acceptable terms, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we might otherwise prefer to develop and market ourselves. Failure to obtain adequate financing could eventually adversely affect our ability to operate as a going concern.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under applicable SEC rules.

Caution on Forward-Looking Statements

Any statements in this report about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and are forward-looking statements. In some cases, you can identify these forward-looking statements by the use of words or phrases such as believe, may, could, will, estimate, continue anticipate, intend, seek, plan, expect, should or would, or the negative of these terms or other comparable Among the factors that could cause actual results to differ materially from those indicated in the forward-looking statements are risks and uncertainties inherent in our business including, without limitation: the results of our research and development activities, including uncertainties relating to the discovery of potential product candidates and the preclinical and clinical testing of our product candidates; the early stage of our product candidates presently under development; our ability to obtain and, if obtained, maintain regulatory approval of our current product candidates, and any future product candidates, and any related restrictions, limitations and/or warnings in the label of any approved product candidate; our need for additional funds in order to pursue our business plan and the uncertainty of whether we will be able to obtain the funding we need; our ability to retain or hire key scientific or management personnel; our ability, with partners, to validate, develop and obtain regulatory approval of companion diagnostics for

our product candidates; our ability to protect our intellectual property rights, including patent and other intellectual property rights; our dependence on third-party manufacturers, suppliers, research organizations, testing laboratories and other potential collaborators; our ability to develop successful sales and marketing capabilities in the future as needed; the size and growth of the potential markets for any of our product candidates, and the rate and degree of market acceptance of any of our product candidates; competition in our industry; the impact of healthcare reform legislation; regulatory developments in the United States and foreign countries; and other risks detailed under Part II Item 1A Risk Factors in this report and under Part I Item 1A Risk Factors in our most recent Annual Report on Form 10-K, as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Although we believe that the expectations reflected in our forward-looking statements are reasonable, we cannot guarantee future results, events, levels of activity, performance or achievement. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, unless required by law. This caution is made under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

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Item 3. Quantitative and Qualitative Disclosures about Market Risk

As a smaller reporting company we are not required to provide the information required by this item in this report.

Item 4. Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC s rules and forms and that such information is accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

As required by SEC Rule 13a-15(b), we carried out an evaluation, under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this report. Based on the foregoing, our chief executive officer and chief financial officer concluded that our disclosure controls and procedures were effective as of September 30, 2014 at the reasonable assurance level.

There has been no change in our internal control over financial reporting during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II OTHER INFORMATION

Item 1. Legal Proceedings

We are currently not a party to any material legal proceedings.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. Our Annual Report on Form 10-K for the year ended December 31, 2013 includes a detailed discussion of our risk factors under the heading Part I, Item 1A Risk Factors. Set forth below are certain changes from the risk factors previously disclosed in our Annual Report on Form 10-K. You should carefully consider the risk factors discussed in our Annual Report on Form 10-K as well as the other information in this report before deciding whether to invest in shares of our common stock. The occurrence of any of the risks discussed in the Annual Report on Form 10-K or this report could harm our business, financial condition, results of operations or growth prospects. In that case, the trading price of our common stock could decline, and you may lose all or part of your investment. Except with respect to our trademarks, the trademarks, trade names and service marks appearing in this report are the property of their respective third party owners.

We have incurred significant losses since our inception and anticipate that we will continue to incur losses for the foreseeable future. We are a development-stage company with no approved products, and have generated no material revenue to date and may never generate material revenue or achieve profitability.

We are a development-stage biopharmaceutical company with a limited operating history. We have not generated any material revenue to date and are not profitable, and have incurred losses in each year since our inception. Our net loss for the year ended December 31, 2013 and the nine months ended September 30, 2014 was $14.2 million and $20.2 million, respectively. As of September 30, 2014, we had an accumulated deficit of $35.8 million. We expect to continue to incur losses for the foreseeable future, and we expect these losses to increase as we continue our development of, and seek regulatory approvals for, our product candidates, and begin to commercialize any approved products. We are currently focused primarily on the development of our RXDX-101, RXDX-103, RXDX-104, and Spark programs, which we believe will result in our continued incurrence of significant research and development and other expenses related to those programs. If the clinical trials for any of our products fail or produce unsuccessful results and those product candidates do not gain regulatory approval, or if any of our product candidates, if approved, fails to achieve market acceptance, we may never become profitable. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders equity and working capital.

We expect to need additional funding to continue our operations, which could result in dilution or restrictions on our business activities. We may not be able to raise capital when needed, if at all, which would force us to delay, reduce or eliminate our product development programs or commercialization efforts and could cause our business to fail.

Our operations have consumed substantial amounts of cash since inception. We expect to need substantial additional funding to pursue the clinical development of our product candidates and launch and commercialize any product candidates for which we receive regulatory approval, which may include building internal sales and marketing forces to address certain markets.

Even after giving effect to the proceeds received from our September 2014 loan arrangement with SVB and our March 2014 and November 2013 common stock offerings, we expect to require substantial additional capital for the further development and commercialization of our product candidates. Further, we expect our expenses to increase in connection with our ongoing activities, particularly as we continue to expand the ongoing development of RXDX-101 and our other product candidates, and if we acquire rights to additional product candidates. For example, in February 2014 we submitted an IND to the FDA for RXDX-101, which IND became active with the FDA in March 2014. In July 2014, we initiated a new, global Phase I/II clinical trial of oral RXDX-101 in adult patients with metastatic cancer detected to be positive for relevant molecular alterations. We anticipate that this clinical trial will involve clinical sites in the United States, Europe, and Asia.

In addition, if we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution. Furthermore, we expect to incur additional costs associated with operating as a public company. We may also encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may increase our capital needs and/or cause us to spend our cash resources faster than we expect. Accordingly, we expect to need to obtain substantial additional funding in order to continue our operations.

To date, we have financed our operations entirely through equity investments by founders and other investors and the incurrence of debt, and we expect to continue to do so in the foreseeable future. We may also seek funding through collaborative arrangements. Additional funding from those or other sources may not be available when or in the amounts needed, on acceptable terms, or at all. If we raise capital through the sale of equity, or securities convertible into equity, it would result in dilution to our then existing stockholders, which could be significant depending on the price at which we may be able to sell our securities. If we raise additional capital through the incurrence of further indebtedness, as we have done under our loan agreement with SVB and under which our ability to incur additional indebtedness is limited, we would likely become subject to additional covenants restricting our business activities, and holders of debt instruments may have rights and privileges senior to those of our equity investors. In addition, servicing the interest and principal repayment obligations under debt facilities could divert funds that would otherwise be available to support research and development, clinical or commercialization activities. If we obtain capital through collaborative arrangements, these arrangements could require us to relinquish rights to our technology or product candidates and could result in our receipt of only a portion of the revenues associated with the partnered product.

If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts. Any of these events could significantly harm our business, financial condition and prospects.

We have incurred significant indebtedness under our loan agreement with SVB, which will require substantial cash to service and which subjects our business to certain restrictions.

On September 30, 2014, we entered into an amended and restated loan agreement with SVB under which we incurred $21 million of indebtedness, approximately $11 million of which was used to repay our then-existing loan with SVB. We also have an option to receive an additional $10 million loan tranche, which may be drawn down by us at any time prior to September 30, 2015, provided that we have initiated the Phase IIa portion of our ongoing, global Phase I/II clinical study of RXDX-101 and subject to other customary conditions for funding. We will be required to pay interest

on the borrowings under the amended and restated loan agreement at a fixed, per-annum rate of 8.56% on a monthly basis through October 31, 2015. Thereafter, we will be required to repay the principal plus interest in 30 equal monthly installments. The number of months of interest-only payments and the number of months over which the principal will be amortized will each be increased by six months if the second loan tranche has been drawn down or we have raised net proceeds of at least $50 million through the offering of our equity securities, in each case prior to October 31, 2015. Further, the terms of the amended and restated loan agreement require that we make a final lump-sum payment of 3% of the principal amount of the loans thereunder. We may elect to prepay all amounts owed under either or both of the loan tranches prior to the maturity date therefor, provided that a prepayment fee is also paid, equal to 2% of the amount prepaid if the prepayment occurs prior to September 30, 2015, or 1% of the amount prepaid if the prepayment occurs thereafter.

Our ability to make scheduled payments on or to refinance our indebtedness depends on our future performance and ability to raise additional sources of cash, which is subject to economic, financial, competitive and other factors beyond our control. If we are unable to generate sufficient cash to service our debt, we may be required to adopt one or more alternatives, such as selling assets, restructuring our debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. If we desire to refinance our indebtedness, our ability to do so will depend on the capital markets and our financial condition at such time.

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We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations. Additionally, the amended and restated loan agreement contains various covenants, including an obligation to deliver to SVB certain financial and insurance information and comply with certain notice requirements, and covenants that restrict our ability, without SVB s prior consent, to: incur certain additional indebtedness, enter into certain mergers, acquisitions or other business combination transactions, or incur any non-permitted lien or other encumbrance on our assets. Any failure by us to comply with any of those covenants, subject to certain cure periods, or to make all payments under the amended and restated loan agreement when due, would cause us to be in default. In the event of any such default, SVB may be able to declare all borrowed funds, together with accrued and unpaid interest, immediately due and payable, thereby potentially causing all of our available cash to be used to repay our indebtedness or forcing us into bankruptcy or liquidation if we do not then have sufficient cash available. Any such event or occurrence could severely and negatively impact our operations and prospects.

If we are not able to attract and retain highly qualified personnel, we may not be able to successfully implement our business strategy.

Our ability to compete in the highly competitive biotechnology and pharmaceuticals industries depends upon our ability to attract and retain highly qualified personnel. We are highly dependent on our management, scientific and medical personnel, especially Jonathan E. Lim, our President, Chief Executive Officer and Chairman of the Board, whose services are critical to the successful implementation of our product candidate development and regulatory strategies. Further, as our approach is built in part upon the drug discovery and development experience of our scientific drug hunter team, which we believe is a significant contributor to our competitive advantage, we are dependent on the maintenance and growth of that team with qualified members containing high levels of expertise in specific scientific fields.

We are not aware of any present intention of any of our executive officers or other members of management to leave our company. However, our industry tends to experience a high rate of turnover of management personnel and our personnel are generally able to terminate their relationships with us on short notice. All of our employment arrangements provide for at-will employment, which means that any of our employees could leave our employment at any time, with or without notice. Additionally, several members of our scientific team are consultants rather than employees, and could terminate their consulting relationships with us at any time or with short notice, depending on the terms of their respective consulting agreements with us. The loss of the services of any of our executive officers or other key employees and our inability to find suitable replacements could potentially harm our business, financial condition and prospects. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior and mid-level managers as well as junior and mid-level scientific and medical personnel.

Moreover, there is intense competition for a limited number of qualified personnel among biopharmaceutical, biotechnology, pharmaceutical and other businesses. Many of the other pharmaceutical companies against which we compete for qualified personnel have greater financial and other resources, different risk profiles, longer histories in the industry and greater ability to provide valuable cash or stock incentives to potential recruits than we do. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high quality candidates than what we are able to offer as an early-stage company. If we are unable to continue to attract and retain high quality personnel, the rate and success at which we can develop and commercialize product candidates will be limited.

We are heavily dependent on the success of our lead product candidates, which will require significant additional efforts to develop and may prove not to be viable for commercialization.

To date, we have invested significant efforts in the acquisition of four drug programs from NMS. Our future success is substantially dependent on our ability to successfully develop, obtain regulatory approval for, and then successfully commercialize RXDX-101, with RXDX-102 as a back-up compound in case the development of RXDX-101 is not successful, RXDX-103 and RXDX-104. Our business depends entirely on the successful development, clinical testing and commercialization of these and any other product candidates we may seek to develop in the future, which may never occur.

Before we could generate any revenues from sales of our lead product candidates, we must complete the following activities for each of them, any one of which we may not be able to successfully complete:

conduct substantial clinical development;

manage clinical, preclinical and manufacturing activities;

achieve regulatory approvals;

establish manufacturing relationships for the supply of the applicable product candidate;

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build a commercial sales and marketing team, if we choose to market any such product ourselves, or enter into a collaboration to access sales and marketing functions;

develop and implement marketing strategies;

develop and/or work with third-party collaborators to develop companion diagnostics and conduct clinical testing and achieve regulatory approvals for those companion diagnostics; and

invest significant additional cash in each of the above activities.

If the results of our ongoing RXDX-101 Phase I/II clinical trials are not successful, we may not be able to use those results as the basis for advancing the product candidate into further clinical development. In that case, we may not have the resources to conduct new clinical trials, and/or we may determine that further clinical development of this product candidate is not justified and may decide to discontinue the program. If the results of preclinical testing for RXDX-103 or RXDX-104 are not successful, we may not be able to use those results as the basis for advancing the product candidate into further development. If studies of our product candidates produce unsuccessful results and we are forced or elect to cease their development, our business and prospects could be substantially harmed, particularly if the product candidates for which development has ceased are at the clinical development stage.

Preclinical and clinical testing of our lead product candidates that has been conducted to date may not have been performed in compliance with applicable regulatory standards, which could lead to increased costs or material delays for their further development.

We have only recently licensed the rights to develop our product candidates from NMS, and the development of those product candidates prior to our licenses was conducted wholly by NMS or any third parties with which it had contracted. As a result, we were not involved with nor did we have any control over any of those development activities. In addition, with respect to RXDX-104, we will not assume control over development activities until the earlier of December 31, 2014 or the identification by NMS of a lead development candidate. Because we had no input on NMS s development activities relating to these product candidates, we may discover that all or certain elements of the trials and studies performed by NMS have not been in compliance with applicable regulatory standards or have otherwise been deficient. For instance, the development of each of these product candidates to date has been conducted only in Europe. As a result, although we may find that those studies meet the standards of applicable European regulatory bodies, the structure and design of those clinical trials and preclinical studies may not meet applicable FDA standards to allow immediate further development of those product candidates in the United States, and also may not meet the standards of applicable regulatory authorities in any non-European foreign country in which we desire to pursue marketing approval for these product candidates. If the studies conducted by NMS are not in full compliance with applicable regulatory standards or are otherwise not eligible for continued development in the United States, then we may be forced to conduct new studies in order to progress their development, which we may not have the funding or other resources to complete and which would severely delay any of our development plans for these product candidates. Any such deficiency in the prior development of these product candidates would significantly harm our business plans and prospects.

Clinical drug development involves a lengthy and expensive process with uncertain outcomes, and any of our clinical trials or studies could produce unsuccessful results or fail at any stage in the testing process.

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. Additionally, any positive results of preclinical studies and early clinical trials of a product candidate may not be predictive of the results of later-stage clinical trials, such that product candidates may reach later stages of clinical trials and fail to show the desired safety and efficacy traits despite having shown indications of those traits in earlier studies. For example, although the preclinical and early clinical results for our lead product candidate have been promising, those results and the results that may be generated in the ongoing Phase I/II clinical trials for RXDX-101 do not imply that later clinical trials will demonstrate similar results. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. The results of any future clinical trials we conduct may not be successful.

Although there are two clinical trials ongoing for RXDX-101, we may experience delays in pursuing those or any other clinical or preclinical studies. Clinical trials can be delayed for a variety of reasons, including delays related to:

- obtaining regulatory approval to commence a trial;

- reaching agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;

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obtaining approval from an independent institutional review board, or IRB, at each trial site;

enrolling suitable patients to participate in a trial;

developing and validating companion diagnostics on a timely basis, and utilizing such companion diagnostics on an effective and timely basis;

changes in formulation, dosing or administration regimens;

having patients complete a trial or return for post-treatment follow-up;

clinical sites deviating from the trial protocol or dropping out of a trial;

regulators instituting a clinical hold due to observed safety findings;

adding new clinical trial sites; or

manufacturing sufficient quantities of product candidate for use in clinical trials.

We currently rely, and we expect to continue to rely, on CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials. Although we have agreements in place with CROs governing their committed activities and conduct, and we expect we will have similar agreements with other CROs we may engage in the future, we have limited influence over their actual performance. As a result, we ultimately do not have control over a CRO s compliance with the terms of any agreement it may have with us, its compliance with applicable regulatory requirements, or its adherence to agreed time schedules and deadlines, and a CRO s failure to perform those obligations could subject any of our clinical trials to delays or failure.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by the Data Safety Monitoring Board for the trial, if applicable, or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a product candidate, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. If we were to experience delays in the completion of, or suspension or termination of, any clinical trial for our product candidates, the commercial prospects of the product candidate would be harmed, and our ability to generate product revenues from the product candidate would be delayed or eliminated. In addition, any delays in completing clinical trials would increase our costs, slow down our product candidate development and approval process and jeopardize regulatory approval of the product candidate. The occurrence of any of these events could harm our business, financial condition and prospects significantly.

If we experience delays or difficulties in the enrollment of patients in clinical trials, those clinical trials could take longer than expected to complete and our receipt of necessary regulatory approvals could be delayed or prevented.

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. In particular, because we are focused on patients with molecularly defined cancers, our pool of suitable patients may be smaller and more selective and our ability to enroll a sufficient number of suitable patients may be limited or take longer than anticipated. In addition, some of our competitors have ongoing clinical trials for product candidates that treat the same indications or target the same molecular alterations as our product candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors product candidates.

Patient enrollment for any of our clinical trials may also be affected by other factors, including without limitation:

- the severity of the disease under investigation;
- the frequency of the molecular alteration we are seeking to target in the applicable trial, and the ability to effectively identify such alterations;
- the willingness of clinical sites and principal investigators to subject candidate patients to molecular screening;
- the eligibility criteria for the study in question;
- the perceived risks and benefits of the product candidate under study;
- the availability of other treatment options;
- the extent of the efforts to facilitate timely enrollment in clinical trials;
- the patient referral practices of physicians;
- the ability to monitor patients adequately during and after treatment; and

the proximity and availability of clinical trial sites for prospective patients.

Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays and could require us to abandon one or more clinical trials altogether. Enrollment delays in our clinical trials would likely result in increased development costs for our product candidates, and we may not have or be able to obtain sufficient cash to fund such increased costs when needed, which could result in the further delay or termination of the trials.

Consistent with our general product development strategy, we designed our recently-initiated Phase I/II clinical trial of RXDX-101, and we intend to design any future trials for that or other product candidates, to include patients with the applicable molecular alterations or biomarkers which are the targets of our product candidates, with a view to assessing possible early evidence of potential therapeutic effect. If we are unable to locate and include such patients in those trials, then our ability to make those early assessments and to seek participation in FDA expedited review and approval programs, including accelerated approval, breakthrough therapy and fast track designation, or otherwise to seek to accelerate clinical development and regulatory timelines, could be compromised.

Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.

To date, patients treated with RXDX-101 have experienced some drug-related adverse events. Results of our ongoing clinical trials of RXDX-101 or trials for our other product candidates could reveal a high and unacceptable severity and frequency of these or other side effects. In such an event, our trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of, or deny approval of, our product candidates for any or all targeted indications. Further, any observed drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial, or result in potential product liability claims. Any of these occurrences could materially harm our business, financial condition and prospects.

Additionally, if one or more of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by such products, a number of potentially significant negative consequences could result, including:

regulatory authorities may withdraw approvals of such product;

regulatory authorities may require additional warnings on the product s label;

we may be required to create a medication guide for distribution to patients that outlines the risks of such side effects;

we could be sued and held liable for harm caused to patients; and

our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product, if approved, and could significantly harm our business, results of operations and prospects.

We rely on third parties to conduct preclinical and clinical trials of our product candidates. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.

We rely, and expect to continue to rely, upon third-party CROs to execute our preclinical and clinical trials and to monitor and manage data produced by and relating to those trials. However, we may not be able to establish arrangements with CROs when needed or on terms that are acceptable to us, or at all, which could negatively affect our development efforts with respect to our drug product candidates and materially harm our business, operations and prospects.

We currently have only limited control over the activities of the CROs we have engaged to continue the ongoing Phase I/II clinical trials for RXDX-101, and we expect the same to be true for any CROs we may engage in the future. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on any CRO does not relieve us of our regulatory responsibilities. Based on our present expectations, we, our CROs and our clinical trial sites are required to comply with good clinical practices, or GCPs, for all of our product candidates in clinical development. Regulatory authorities enforce GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our CROs fail to comply with applicable GCPs, the clinical data generated in the applicable trial may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving a product candidate for marketing, which we may not have sufficient cash or other resources to support and which would delay our ability to generate revenue from any sales of such product candidate. In addition, our clinical trials are required to be conducted with product produced in compliance with current good manufacturing practice requirements, or cGMPs. Our or our CROs failure to comply with those regulations may require us to repeat clinical trials, which would also require significant cash expenditures and delay the regulatory approval process.

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Agreements governing relationships with CROs generally provide those CROs with certain rights to terminate the agreement under specified circumstances. If a CRO that we have engaged terminates its relationship with us during the performance of a clinical trial, we would be forced to seek an engagement with a substitute CRO, which we may not be able to do on a timely basis or on commercially reasonable terms, if at all, and the applicable trial would experience delays or may not be completed. In addition, our CROs are not our employees, and except for remedies available to us under any agreements we enter with them, we are unable to control whether or not they devote sufficient time and resources to our clinical, nonclinical and preclinical programs. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to a failure to adhere to our clinical protocols, regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to obtain regulatory approval for, or successfully commercialize, the affected product candidates. As a result, our operations and the commercial prospects for the affected product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed.

We plan to rely completely on third parties to manufacture our preclinical and clinical drug supplies and any approved product candidates, and our operations could be harmed if those third parties fail to provide sufficient quantities of product in accordance with applicable regulatory and contractual obligations.

We do not currently have, nor do we plan to acquire, the infrastructure or capability internally to manufacture our preclinical and clinical drug supplies for use in the conduct of our preclinical studies and clinical trials or commercial quantities of any product candidates that may obtain regulatory approval. As a result, we expect that we will need to rely completely on third-party manufacturers for those services. We currently have a limited supply of RXDX-101. We have entered into non-exclusive clinical supply agreements with two independent third parties. We do not currently have arrangements in place for commercial supply of bulk drug substance. We may not be able to establish these or any other supply relationship when needed, on reasonable terms, or at all. Any failure to secure sufficient supply of our product candidates for preclinical or clinical testing or, in the future, commercial purposes would materially harm our operations and financial results.

We expect that the facilities to be used by any contract manufacturers we engage to manufacture our product candidates will be inspected by the FDA in connection with any NDA that we submit. We will not control the manufacturing process of, and will be dependent on, our contract manufacturing partners for compliance with cGMPs for the manufacture of clinical and, if regulatory approval is obtained, commercial quantities of our product candidates. If any of our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or other comparable foreign authorities, we would be prevented from obtaining regulatory approval for our product candidates or commercializing our products, if approved, unless and until we could engage a substitute contract manufacturer that could comply with such requirements, which we may not be able to do. Any such failure by any of our contract manufacturers would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

We expect to rely on our manufacturers to purchase from third-party suppliers the materials necessary to produce our product candidates for our preclinical studies and clinical trials or for commercial sale. We do not have, nor do we expect to enter, any agreements for the production of these raw materials, and we do not expect to have any control over the process or timing of our manufacturers acquisition of raw materials needed to produce our product candidates. Any significant delay in the supply of a product candidate or the raw material components thereof for an ongoing preclinical study or clinical trial due to a manufacturer s need to replace a third-party supplier of raw materials could considerably delay completion of our clinical trials, product testing and potential regulatory approval of our product candidates. Additionally, if our manufacturers or we are unable to purchase these raw materials to

commercially produce any of our product candidates that gain regulatory approval, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenues from the sale of our product candidates.

We face significant competition from other biotechnology and pharmaceutical companies, and our operating results will suffer if we fail to compete effectively.

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. In addition, the competition in the oncology market is intense. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, biotechnology companies and universities and other research institutions.

With respect to our lead product candidate, we are aware of two agents that have been approved by the FDA for ALK-positive NSCLC, Pfizer s Xalkori®/crizotinib and Novartis Zykadia®/ceritinib. We are also aware of several other products in development targeting TrkA, TrkB, TrkC, ROS1, ALK, RET and/or Cdc7 for the treatment of cancer, some of which may be in a more advanced stage of development than our product candidates. There are also many other compounds directed to other molecular targets that are in clinical development by a variety of companies to treat cancer types that we may choose to pursue with RXDX-101, RXDX-103 and RXDX-104.

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Many of our competitors have substantially greater financial, technical and other resources than we do, such as larger research and development staff and experienced marketing and manufacturing organizations. Additional mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in certain of our competitors. As a result of these or other factors, these companies may be able to obtain regulatory approval more rapidly than we can and may be more effective in selling and marketing their products. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors may succeed in developing, acquiring or licensing drug products that are more effective or less costly to produce or purchase on the market than any product candidate we are currently developing or that we may seek to develop in the future. If approved, our product candidates will face competition from commercially available drugs as well as drugs that are in the development pipelines of our competitors.

Established pharmaceutical companies may invest heavily to accelerate discovery and development of or in-license novel compounds that could make our product candidates less competitive. In addition, any new product that competes with an approved product must demonstrate compelling advantages in efficacy, convenience, tolerability and safety in order to overcome price competition and to be commercially successful. Our competitors may succeed in obtaining patent protection, receiving FDA, EMA or other regulatory approval, or discovering, developing and commercializing medicines before we do, which would have a material adverse impact on our business and ability to achieve profitability from future sales of our approved product candidates, if any.

We could be subject to product liability lawsuits based on the use of our product candidates in clinical testing or, if obtained, following marketing approval and commercialization. If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to cease clinical testing or limit commercialization of our product candidates.

We could be subject to product liability lawsuits if any product candidate we develop allegedly causes injury or is found to be otherwise unsuitable for human use during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability or a breach of warranties. Claims could also be asserted under state consumer protection acts or other laws. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates, if approved. Even successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our product candidates;
- injury to our reputation;
- withdrawal of clinical trial participants;
- initiation of investigations by regulators;

costs to defend the related litigation;

a diversion of management s time and our resources;

substantial monetary awards to trial participants or patients;

product recalls, withdrawals or labeling, marketing or promotional restrictions;

loss of revenues from product sales; and

the inability to commercialize our product candidates.

Our inability to retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the clinical testing and commercialization of products we develop. We have obtained product liability insurance covering our Phase I/II clinical trials of RXDX-101. We may wish to obtain additional such insurance covering studies or trials in other countries should we seek to expand those clinical trials or commence new clinical trials in other jurisdictions or increase the number of patients in any clinical trials we may pursue. We also may determine that additional types and amounts of coverage would be desirable at later stages of clinical development of our product candidates or upon commencing commercialization of any product candidate that obtains required approvals. However, we may not be able to obtain any such additional insurance coverage when needed on acceptable terms or at all. We could be responsible for some or all of the financial costs associated with a product liability claim relating to our preclinical and clinical development activities, in the event that any such claim results in a court judgment or settlement in an amount or of a type that is not covered, in whole or in part, by any insurance policies we may have or that is in excess of the limits of our insurance coverage. We may not have, or be able to obtain, sufficient capital to pay any such amounts that may not be covered by our insurance policies.

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If we breach any of the agreements under which we license from third parties the commercialization rights to our product candidates, we could lose license rights that are important to our business and our operations could be materially harmed.

We have in-licensed from NMS the use, development and commercialization rights for RXDX-101, RXDX-102, RXDX-103 and RXDX-104. As a result, our current business plans are dependent upon our satisfaction of certain conditions to the maintenance of those license agreements and the rights we license under them. Each of the license agreements provides that we are subject to diligence obligations relating to the commercialization and development of product candidates, milestone payments, royalty payments and other obligations. In addition to our license agreements with NMS, we may seek to enter into additional agreements with other third parties in the future granting similar license rights with respect to other potential product candidates. If we fail to comply with any of the conditions or obligations or otherwise breach the terms of either of our license agreements with NMS, or any future license agreement we may enter on which our business or product candidates are dependent, NMS or other licensors may have the right to terminate the applicable agreement in whole or in part and thereby extinguish our rights to the licensed technology and intellectual property and/or any rights we have acquired to develop and commercialize certain product candidates. The loss of the rights licensed to us under our license agreements with NMS, or any future license agreement that we may enter granting us rights on which our business or product candidates are dependent, would eliminate our ability to further develop the applicable product candidates and would materially harm our business, prospects, financial condition and results of operations.

If our efforts to protect the proprietary nature of the intellectual property related to our technologies are not adequate, we may not be able to compete effectively in our markets and our business would be harmed.

We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our technologies. Any disclosure to or misappropriation by third parties of our trade secret or other confidential information could enable competitors to quickly duplicate or surpass our technological achievements, thus eroding any competitive advantage we may derive from this information.

The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications we own or license may fail to result in issued patents in the United States or in foreign countries. Third parties may challenge the validity, enforceability or scope of any issued patents we own or license or any applications that may issue as patents in the future, which may result in those patents being narrowed, invalidated or held unenforceable. Even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from developing similar products that do not fall within the scope of our patents. If the breadth or strength of protection provided by the patents we hold or pursue is threatened, our ability to commercialize any product candidates with technology protected by those patents could be threatened. Further, if we encounter delays in our clinical trials, the period of time during which we would have patent protection for any covered product candidates that obtain regulatory approval would be reduced. Since patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain at the time of filing that we are the first to file any patent application related to our product candidates.

Our license agreements with NMS grant us an exclusive, worldwide license under a portfolio of patents and patent applications directed to the RXDX-101, RXDX-102, RXDX-103 and RXDX-104 composition of matter. The composition of matter patents in the United States expire in 2029 for the issued patent relating to RXDX-101, in 2028 for the issued patent relating to RXDX-102, in 2027 for the issued patent relating to RXDX-103 and in 2033 for any patents that may issue from the patent applications relating to RXDX-104. While patent term extensions under the Hatch-Waxman Act in the United States and under supplementary protection certificates in Europe may be available to extend our patent exclusivity for any of these product candidates, the applicable patents may not meet the specified

conditions for eligibility for any such term extension and, even if eligible, we may not be able to obtain any such term extension. Further, because filing, prosecuting and enforcing patents in multiple jurisdictions can be expensive, we may elect to pursue patent protection relating to our product candidates in only certain jurisdictions. As a result, competitors would be permitted to use our technologies in jurisdictions where we have not obtained patent protection to develop their own products, any of which could compete with our product candidates.

In addition to the protection afforded by patents, we seek to rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable, processes for which patents are difficult to enforce and any other elements of our discovery platform and drug development processes that involve proprietary know-how, information or technology that is not covered by patents or not amenable to patent protection. Although we require all of our employees and certain consultants and advisors to assign inventions to us, and all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology to enter into confidentiality agreements, our trade secrets and other proprietary information may be disclosed or competitors may otherwise gain access to such information or independently develop substantially equivalent information. Further, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant difficulty in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent material disclosure of the trade secret intellectual property related to our technologies to third parties, we may not be able to establish or maintain the competitive advantage that we believe is provided by such intellectual property, which could materially adversely affect our market position and business and operational results.

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We may desire, or be forced, to seek additional licenses to use intellectual property owned by third parties, and such licenses may not be available on commercially reasonable terms or at all.

A third party may hold intellectual property, including patent rights, that are important or necessary to the development of our product candidates, in which case we would need to obtain a license from that third party or develop a different formulation of the product candidate that does not infringe upon the applicable intellectual property, which may not be possible. Additionally, we may identify product candidates that we believe are promising and whose development and other intellectual property rights are held by third parties. In such a case, we may desire to seek a license to pursue the development of those product candidates, as we have done with the product candidates we licensed from NMS. Any license that we may desire to obtain or that we may be forced to pursue may not be available when needed on commercially reasonable terms or at all. Any inability to secure a license that we need or desire could have a material adverse effect on our business, financial condition and prospects.

The patent protection covering some of our product candidates may be dependent on third parties, who may not effectively maintain that protection.

While we expect that we will generally seek to gain the right to fully prosecute and maintain any issued patents and pending patent applications covering product candidates we may in-license from third-party owners, there may be instances when the prosecution and maintenance of issued patents and pending patent applications that cover our product candidates remain controlled by our licensors. For instance, NMS has retained certain patent prosecution and maintenance rights under our license agreements relating to RXDX-101, RXDX-102, RXDX-103 and RXDX-104. If any of our current or future licensing partners that retain the right to prosecute and maintain patents and pending patent applications covering the product candidates we license from them fail to appropriately prosecute and maintain that patent protection, we may not be able to prevent competitors from developing and selling competing products or practicing competing methods and our ability to generate revenue from any commercialization of the affected product candidates may suffer.

We will need to grow the size of our organization, and we may experience difficulties in managing any growth we may achieve.

As of November 1, 2014, we had 49 employees, 45 of whom were full-time and four of whom were part-time. As our development and commercialization plans and strategies develop, we expect to need additional research, development, managerial, operational, sales, marketing, financial, accounting, legal and other resources. Future growth would impose significant added responsibilities on members of management, including:

- effectively managing our clinical trials and submissions to regulatory authorities for marketing approvals;
- effectively managing our discovery research and preclinical development;
- identifying, recruiting, maintaining, motivating and integrating additional employees;
- effectively managing our internal development efforts;

establishing relationships with third parties essential to our business and ensuring compliance with our contractual obligations to such third parties;

developing and managing new divisions of our internal business, including any sales and marketing segment we elect to establish;

maintaining our compliance with public company reporting and other obligations, including establishing and maintaining effective internal control over financial reporting and disclosure controls and procedures; and

improving our managerial, development, operational and finance systems.

We may not be able to accomplish any of those tasks, and our failure to do so could prevent us from effectively managing future growth, if any, and successfully growing our company.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred substantial losses during our history and do not expect to become profitable in the foreseeable future and may never achieve profitability. To the extent we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire. Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an ownership change (generally defined as a cumulative change in equity ownership by 5% shareholders that exceeds 50 percentage points over a rolling three-year period), the corporation s ability to use its pre-ownership change net operating loss

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carryforwards and other pre-ownership change tax attributes to offset its post-ownership change income and taxes may be limited. We may have experienced an ownership change as a result of our October 31, 2013 merger transaction and/or our November 2013 and March 2014 common stock offerings and may experience one or more ownership changes as a result of future transactions in our stock, and as a result we may be limited in our ability to use our net operating loss carryforwards and other tax assets to reduce taxes owed on the net taxable income that we earn. As of December 31, 2013, we had federal and state net operating loss carryforwards of approximately $7.3 million that could be limited if the merger or the common stock offerings resulted in an ownership change, or if we experience any other ownership change, which could potentially result in increased future tax liability to us.

There may not be a viable trading market for our common stock, which may make it difficult for you to sell your shares of our common stock.

Our common stock had not been publicly traded on the NASDAQ Capital Market prior to our public offering in March 2014. The trading market for our common stock on the NASDAQ Capital Market has been limited, and an active trading market for our shares may not be sustained. As a result of these and other factors, you may be unable to sell your shares at a price that is attractive to you, or at all. Further, an inactive trading market may also impair our ability to raise capital by selling shares of our common stock in the future, and may impair our ability to enter into strategic partnerships or acquire companies or products by using shares of our common stock as consideration.

Our share price is volatile and may be influenced by numerous factors, some of which are beyond our control.

The price for our common stock currently is, and is likely to continue to be, highly volatile, and could be subject to wide fluctuations. That price fluctuation could be in response to various factors, some of which may be beyond our control. These factors are discussed in this Risk Factors section, and elsewhere in this Quarterly Report on Form 10-Q, as well as in the Risk Factors and other sections of our Annual Report on Form 10-K, as updated by our subsequent filings under the Exchange Act. These factors include, without limitation:

- the product candidates we seek to pursue, and our ability to obtain rights to develop, commercialize and market those product candidates;
- our decision to initiate a clinical trial, not to initiate a clinical trial or to terminate an existing clinical trial or development program;
- actual or anticipated adverse results or delays in our clinical trials;
- our failure to successfully commercialize our product candidates, if approved;
- unanticipated serious safety concerns related to the use of any of our product candidates;
- adverse regulatory decisions;

additions or departures of key scientific or management personnel;

changes in laws or regulations applicable to our product candidates, including without limitation clinical trial requirements for approvals;

disputes or other developments relating to patents and other proprietary rights and our ability to obtain patent protection for our product candidates;

our dependence on third parties, including CROs and contract manufacturers, as well as our potential partners that produce companion diagnostic products;

failure to meet or exceed any financial guidance or expectations regarding development milestones that we may provide to the public;

actual or anticipated variations in quarterly operating results, liquidity or other indicators of our financial condition;

failure to meet or exceed the estimates and projections of the investment community;

overall performance of the equity markets and other factors that may be unrelated to our operating performance or the operating performance of our competitors, including changes in market valuations of similar companies;

conditions or trends in the biotechnology and biopharmaceutical industries;

introduction of new products offered by us or our competitors;

announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;

our ability to maintain an adequate rate of growth and manage such growth;

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issuances of debt or equity securities;

sales of our common stock by us or our stockholders in the future, or the perception that such sales could occur;

trading volume of our common stock;

ineffectiveness of our internal control over financial reporting or disclosure controls and procedures;

general political and economic conditions;

effects of natural or man-made catastrophic events; and

other events or factors, many of which are beyond our control.

In addition, the stock market in general, and the stocks of small-cap biotechnology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance. The realization of any of the above risks or any of a broad range of other risks could have a dramatic and material adverse impact on the market price of our common stock.

Sales of a substantial number of shares of our common stock in the public market, or the perception that such sales could occur, could cause our stock price to fall.

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market, the trading price of our common stock could decline. As of November 1, 2014, a total of 19,580,769 shares of our common stock were outstanding. Of those shares, approximately 16,110,767 were freely tradable, without restriction, in the public market. Such shares represented 82.3% of our outstanding shares of common stock as of that date. Any sales of those shares or any perception in the market that such sales may occur could cause the trading price of our common stock to decline.

In addition, shares of common stock that are either subject to outstanding options or reserved for future issuance under our equity incentive plans will be eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, Rule 144 and Rule 701 under the Securities Act of 1933, as amended, or the Securities Act, our effective Registration Statements on Form S-8 and any future registration of such shares under the Securities Act. If these additional shares of common stock are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and any trading volume could decline.

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. If one or more of securities or industry analysts covering our business downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

We will incur increased costs associated with, and our management will need to devote substantial time and effort to, compliance with public company reporting and other requirements.

As a public company listed on the NASDAQ Capital Market, and particularly if and after we cease to be an emerging growth company or a smaller reporting company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, the rules and regulations of the SEC and the NASDAQ Capital Market impose numerous requirements on public companies, including requirements relating to our corporate governance practices, with which we need to comply. Further, since we are subject to the Exchange Act, we are required to, among other things, file annual, quarterly and current reports with respect to our business and operating results. Our management and other personnel will need to devote substantial time to operations as a public company and compliance with applicable laws and regulations, and our efforts and initiatives to comply with those requirements could be expensive.

We were not subject to requirements to establish, and did not establish, internal control over financial reporting and disclosure controls and procedures prior to our October 2013 merger. Our management team and Board of Directors need to devote significant efforts to maintaining adequate and effective disclosure controls and procedures and internal control over financial reporting in order to comply with applicable regulations, which may include hiring additional legal, financial reporting and other finance and accounting staff and engaging consultants to assist in designing and implementing such procedures. Additionally, any of our efforts to improve our internal controls and design, implement and maintain an adequate system of disclosure controls may not be successful and will require that we expend significant cash and other resources.

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Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

Certain of our executive officers, directors and large stockholders own a significant percentage of our outstanding capital stock. As of November 1, 2014, our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates beneficially owned approximately 29.3% of our outstanding voting stock (which includes shares they had the right to acquire within 60 days). Accordingly, our directors and executive officers and large stockholders have significant influence over our affairs due to their substantial ownership coupled with the positions of some of these stockholders on our management team, and have substantial voting power to approve matters requiring the approval of our stockholders. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets or other major corporate transaction. This concentration of ownership in our Board of Directors and management team and certain other large stockholders may prevent or discourage unsolicited acquisition proposals or offers for our common stock that some of our stockholders may believe is in their best interest.

If we issue additional shares of our capital stock in the future, our existing stockholders will be diluted.

Our second amended and restated certificate of incorporation authorizes the issuance of up to 150,000,000 shares of our common stock and up to 10,000,000 shares of preferred stock with the rights, preferences and privileges that our Board of Directors may determine from time to time. In addition to capital raising activities such as public and private placements of our common stock, other possible business and financial uses for our authorized capital stock include, without limitation, future stock splits, acquiring other companies, businesses or products in exchange for shares of our capital stock, issuing shares of our capital stock to partners or other collaborators in connection with strategic alliances, attracting and retaining employees by the issuance of additional securities under our equity compensation plans, or other transactions and corporate purposes that our board of directors deems are in the best interest of our company. Additionally, shares of our capital stock could be used for anti-takeover purposes or to delay or prevent changes in control or our management. Any future issuances of shares of our capital stock may not be made on favorable terms or at all, they may not enhance stockholder value, they may have rights, preferences and privileges that are superior to those of our common stock, and they may have an adverse effect on our business or the trading price of our common stock. The issuance of any additional shares of our common stock will reduce the book value per share and may contribute to a reduction in the market price of the outstanding shares of our common stock. Additionally, any such issuance will reduce the proportionate ownership and voting power of all of our current stockholders.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans or otherwise, could result in dilution to the percentage ownership of our stockholders and could cause our stock price to fall.

We expect that significant additional capital could be needed in the future to continue our planned operations. To raise capital, we may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors in a prior transaction may be materially diluted. Additionally, new investors could gain rights, preferences and privileges senior to those of existing holders of our common stock. Further, any future sales of our common stock by us or resales of our common stock by our existing stockholders could cause the market price of our common stock to decline. In addition, any future grants of options, warrants or other securities exercisable or convertible into our common stock, or the exercise or conversion of such shares, and any sales of such shares in the market, could have an adverse effect on the market price of our common stock.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could limit the market price of our common stock and may prevent or frustrate attempts by our stockholders to replace or remove our current management.

Our second amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

a board of directors divided into three classes serving staggered three-year terms, such that not all members of the board will be elected at one time;

a prohibition on stockholder action through written consent, which requires that all stockholder actions be taken at a meeting of our stockholders;

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a requirement that special meetings of stockholders be called only by the chairman of the board of directors, the chief executive officer, the president or by a majority of the total number of authorized directors;

advance notice requirements for stockholder proposals and nominations for election to our board of directors;

a requirement that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of not less than two-thirds of all outstanding shares of our voting stock then entitled to vote in the election of directors;

a requirement of approval of not less than two-thirds of all outstanding shares of our voting stock to amend any bylaws by stockholder action or to amend specific provisions of our second amended and restated certificate of incorporation; and

the authority of the board of directors to issue preferred stock on terms determined by the board of directors without stockholder approval and which preferred stock may include rights superior to the rights of the holders of common stock.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These anti-takeover provisions and other provisions in our second amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for stockholders or potential acquirors to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors and could also delay or impede a merger, tender offer or proxy contest involving our company. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors of your choosing or cause us to take other corporate actions you desire. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Not applicable.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

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Item 6. Exhibits

EXHIBIT INDEX

Exhibit Number	Description of Exhibit
2.1	Agreement and Plan of Reorganization, dated May 7, 2013, by and between Ignyta, Inc. and Actagene Oncology, Inc. (incorporated by reference to Exhibit 2.1 to the Company s Current Report on Form 8-K filed with the SEC on November 1, 2013).
2.2	Agreement and Plan of Merger and Reorganization, dated October 31, 2013, by and among Ignyta, Inc. (then known as Infinity Oil & Gas Company), IGAS Acquisition Corp., and Ignyta, Inc. (then known as Ignyta Operating, Inc.) (incorporated by reference to Exhibit 2.2 to the Company s Current Report on Form 8-K filed with the SEC on November 1, 2013).
2.3	Agreement and Plan of Merger, dated June 12, 2014, by and among Ignyta, Inc. (then known as Ignyta Operating, Inc.), and its parent entity Ignyta, Inc. (incorporated by reference to Exhibit 2.1 to the Company s Report on Form 8-K12B filed with the SEC on June 13, 2014).
3.1	Second Amended and Restated Certificate of Incorporation of Ignyta, Inc. (incorporated by reference to Exhibit 3.1 to the Company s Report on Form 8-K12B filed with the SEC on June 13, 2014).
3.2	Amended and Restated Bylaws of Ignyta, Inc. (incorporated by reference to Exhibit 3.2 to the Company s Report on Form 8-K12B filed with the SEC on June 13, 2014).
4.1	Form of Common Stock certificate (incorporated by reference to Exhibit 4.1 to the Company s Report on Form 8-K12B filed with the SEC on June 13, 2014).
4.2	Warrant to Purchase Stock, issued to Silicon Valley Bank on June 25, 2012 (incorporated by reference to Exhibit 10.5 to the Company s Current Report on Form 8-K filed with the SEC on November 1, 2013).
4.3	Warrant to Purchase Stock, issued to Silicon Valley Bank on February 27, 2013 (incorporated by reference to Exhibit 10.6 to the Company s Current Report on Form 8-K filed with the SEC on November 1, 2013).
4.4	Warrant to Purchase Common Stock, dated November 6, 2013, issued to Nerviano Medical Sciences S.r.l. (incorporated by reference to Exhibit 10.3 to the Company s Current Report on Form 8-K filed with the SEC on November 7, 2013).
4.5	Warrant to Purchase Stock, issued to Silicon Valley Bank on September 30, 2014 (incorporated by reference to Exhibit 4.1 to the Company s Current Report on Form 8-K filed with the SEC on October 1, 2014).
4.6	Warrant to Purchase Stock, issued to Life Science Loans, LLC on September 30, 2014 (incorporated by reference to Exhibit 4.2 to the Company s Current Report on Form 8-K filed with the SEC on October 1, 2014).
10.1*	License Agreement, dated August 4, 2014, by and between the Company and Nerviano Medical Sciences, S.r.l. (portions of this exhibit have been omitted pursuant to a grant of confidential treatment and have been filed separately with the SEC).
10.2	

	Second Amended and Restated Loan and Security Agreement (incorporated by reference to Exhibit 10.1 to the Company s Current Report on Form 8-K filed with the SEC on October 1, 2014).
31.1*	Certification of Chief Executive Officer pursuant to Rule 13a 14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Chief Financial Officer pursuant to Rule 13a 14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18.U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes Oxley Act of 2002.
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema Document.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.

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Exhibit Number	Description of Exhibit
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.

* Filed herewith.
In accordance with Regulation S-T, XBRL (Extensible Business Reporting Language) information is furnished and not filed or a part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, and is deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not otherwise subject to liability under these sections.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

IGNYTA, INC.

Date: November 7, 2014

By: /s/ Jonathan E. Lim, M.D.
Jonathan E. Lim, M.D.

President and Chief Executive Officer

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Exhibit 10.1

CERTAIN MATERIAL (INDICATED BY AN ASTERISK) HAS BEEN OMITTED FROM THIS DOCUMENT PURSUANT TO A REQUEST FOR CONFIDENTIAL TREATMENT. THE OMITTED MATERIAL HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

LICENSE AGREEMENT

THIS LICENSE AGREEMENT (this Agreement) dated as of August 4, 2014 (the Effective Date) is between NERVIANO MEDICAL SCIENCES S.r.l., an Italian corporation (Nerviano), having a place of business at viale Pasteur, 10, 20014 Nerviano, Italy, and IGNYTA, INC., a Delaware corporation (Ignyta), having a place of business at 11095 Flintkote Avenue, Suite D, San Diego, CA 92121, U.S.A. A Party shall mean either of Nerviano and Ignyta and Parties shall mean both Nerviano and Ignyta.

WHEREAS, Nerviano is developing compounds for the treatment of oncology diseases and owns or has rights in the APIs and Licensed IP Rights (as each is defined below).

WHEREAS, Ignyta has capabilities in the development of oncology products and desires to obtain an exclusive license under Nerviano s rights in the APIs and Licensed IP Rights on the terms and conditions set forth below.

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants herein contained, the Parties hereby agree as follows:

1. DEFINITIONS

For purposes of this Agreement, the terms defined in this Section 1 shall have the respective meanings set forth below:

1.1 Acquiror shall mean a Pharmaceutical Company that after the Execution Date acquires control of Ignyta as a result, and upon consummation, of a Change of Control, where Pharmaceutical Company means any entity that, directly or through one or more of its Affiliates, is involved in the business of researching, testing, developing, manufacturing, packaging, marketing, distributing or selling medical devices, medical diagnostic products, or pharmaceutical or medicinal products, formulations or compounds.

1.2 Affiliate shall mean, with respect to a Party, a person, corporation, partnership, or other entity that controls, is controlled by or is under common control with such Party, provided that, with respect to Nerviano, Affiliate means a person, corporation, partnership, or other entity that is controlled by Nerviano and/or NMS Group S.r.l., or is under common control with Nerviano. For the purposes of this definition, (i) an Affiliate is considered an Affiliate regardless of whether such Affiliate is an Affiliate on the Effective Date or becomes an Affiliate after the Effective Date and (ii) the word control (including, with correlative meaning, the terms controlled by or under the common control with) means the actual power, either directly or indirectly through one (1) or more intermediaries, to direct or cause the direction of the management and policies of such entity either by the ownership of at least fifty percent (50%) of the voting stock of such entity or the ability to otherwise control the management of the corporation.

1.3 "API" shall mean one or more of the following small molecules that binds to and inhibits the applicable Exclusive Target and that are specifically disclosed and generically described in (a) Nerviano Patent Cases NMS 015, 042 and 071 such as the molecule known internally at Nerviano as Nerviano-01104862 with the chemical structure set forth on Exhibit 1.3, together with its pharmaceutically acceptable salts, esters, ethers, hydrates, isomers, analogs, metabolites, mixtures of isomers, complexes or derivatives (any of such molecules, the "CDC7 API" and collectively, the "CDC7 APIs"), and (b) the small molecules described in Nerviano Patent Case NMS 093 such as the molecules known internally at Nerviano as Nerviano-P616 or Nerviano-P753, with the chemical structures set forth on Exhibit 1.3, as well as any and all back-up compounds that are part of Nerviano's RET project lead optimization process, together with any pharmaceutically acceptable salts, esters, ethers, hydrates, isomers, analogs, metabolites, mixtures of isomers, complexes or derivatives of any of the foregoing (any of such molecules, the "RET API" and collectively, the "RET APIs").

1.4 "Change of Control" shall mean the occurrence of any of the following after the Effective Date:

(a) a transaction or series of related transactions that results in the sale, transfer or other disposition of all or substantially all of Ignyta's assets;

(b) a merger or consolidation in which Ignyta is not the surviving corporation or in which, if Ignyta is the surviving corporation, the beneficial owners of the outstanding voting securities of Ignyta immediately prior to the consummation of such merger or consolidation do not, immediately after consummation of such merger or consolidation, beneficially own, directly or indirectly, stock or other securities of Ignyta that possess 50% or more of the voting power of all Ignyta's outstanding stock and other securities;

(c) a transaction or series of related transactions (which may include, without limitation, a tender offer for Ignyta's stock or the issuance, sale or exchange of stock of Ignyta) whereby the beneficial owners of the outstanding voting securities of Ignyta immediately prior to such transaction or series of transactions do not, immediately after consummation of such transaction or any of such related transactions, own stock or other securities of Ignyta that possess 50% or more of the voting power of all Ignyta's outstanding stock and other securities; or

(d) the acquisition (whether in a single transaction or series of related transactions) after the Effective Date by a Third Party or Group (as such term is defined in the Securities Exchange Act of 1934, as amended) of beneficial ownership of 50% or more of Ignyta's voting securities or other securities, indebtedness or other rights convertible into such voting securities; *provided,* that a Change of Control shall not include any transaction or series of transactions solely for *bona fide* financing purposes in which cash is received by Ignyta or indebtedness of Ignyta is cancelled or converted or a combination thereof for so long as the Third Party or Group acquiring such ownership does not then or thereafter have any other relationship with Ignyta other than such financing or investing arrangement, including any arrangement involving the development, manufacture or commercialization of a Product.

1.5 "Commercially Reasonable Efforts" means, as applied to Ignyta, its Affiliate or a Sublicensee, those efforts and resources that a company within the bio-pharmaceutical industry

at a similar stage of development as Ignyta, such Affiliate or such Sublicensee, as applicable, would use for a compound or product with similar market and/or commercialization prospects at a similar stage in its product life cycle, taking into account the stage of development or commercialization of the compound or product, the cost-effectiveness of efforts or resources while optimizing profitability, the competitiveness of alternative compounds or products that are or are expected to be in the marketplace, the patent and other proprietary position of the compound or product, the profitability of the compound or product and alternative compounds or products and other relevant commercial factors. For purposes of this Section 1.5, milestone and royalty payments required to be paid to Nerviano under this Agreement shall not be considered in evaluating profitability or other economic factors.

1.6 Competent Authority(ies) shall mean, collectively, (a) the governmental entities in each country or supranational organization that is responsible for the regulation of any Product or the establishment, maintenance and/or protection of rights related to the Licensed IP Rights (including the FDA, the EMA and the MHLW), or (b) any other applicable regulatory or administrative agency in any country or supranational organization that is comparable to, or a counterpart of, the foregoing.

1.7 Competing Product means any small molecule that has a binding affinity for one or more of the Exclusive Targets and was specifically developed, directed or clinically tested against an Exclusive Target, and that is not an API.

1.8 Confidential Information means all embodiments of Nerviano Licensed IP Rights and all other information disclosed, directly or indirectly, by one Party to the other during the term of this Agreement or prior to the Effective Date, that is identified as confidential or is customarily regarded as confidential within the pharmaceutical industry, whether disclosed in electronic, tangible, oral or visual form. Without limiting the generality of the foregoing, Ignyta s Confidential Information includes the Royalty Reports made by Ignyta to Nerviano under Article 5 of this Agreement. Confidential Information shall not include such information that: (a) was or becomes generally available to the public other than as a result of an unauthorized disclosure by a Party hereto or any of such Party s Affiliates, employees, agents or representatives; (b) was or becomes available to a Party hereto on a non-confidential basis from a source other than (in the case of future information) any other Party hereto (or any of such Party s Affiliates, employees, agents or representatives); *provided* that such source was not known to be bound by any agreement to keep such information confidential or otherwise prohibited from transmitting the information by a contractual, legal or fiduciary obligation; or (c) is independently developed by any Party hereto without the use of or reference to the Confidential Information of the other Party hereto or any of such other Party s Affiliates. Information that is otherwise Confidential Information and consists of a combination of information shall not be deemed to be in the public domain if individual elements of such information are in the public domain, unless the specific combination of those elements is also in the public domain.

1.9 Control or Controlled with respect to intangible or intellectual property rights (including patent rights, know-how, trade secrets and rights to access or cross-reference regulatory filings) means possession of the right to grant a license or sublicense hereunder without violating the terms of any agreement or other arrangement with any Third Party existing

at the time the applicable Party would be first required hereunder to grant the other Party such license or sublicense.

1.10 Development means all studies and other activities required to be conducted prior to NDA Approval, including non-clinical testing, clinical studies, packaging and regulatory affairs, and any clinical or other studies required to be conducted after NDA Approval as a condition to approval of an NDA.

1.11 Development Data means all non-clinical and clinical data (including raw data, analyses and reports), including pharmacological, pharmaceutical, pharmacokinetic and toxicological data, relating to an API or a Product that is Controlled at any time during the term of this Agreement by either Party or their Affiliates, including all such data generated by a CRO for a Party.

1.12 Early Development Term means the term starting from the Effective Date and ending with the dosing of the first patient in the first Phase I Clinical Trial during the term of this Agreement or with the second anniversary of the Effective Date, whichever occurs first.

1.13 EMA shall mean the European Agency for the Evaluation of Medicinal Products of the European Union, or the successor thereto.

1.14 Exclusive Targets shall mean the following:
(a) the protein commonly known as CDC7, with [***],

(b) the protein commonly known as RET, with [***], and

(c) any derivatives, parts or polymorphisms (including without limitation splice variants) of any of the foregoing proteins and the nucleotide sequences that encode any of the foregoing.

1.15 FDA shall mean the Food and Drug Administration of the United States, or the successor thereto.
1.16 Field shall mean all fields of use, including without limitation the diagnosis, prevention or treatment of any disease, state or condition in humans or other animals.

1.17 First Commercial Sale shall mean, with respect to any Product, the first sale of such Product to an end user after all necessary marketing and pricing approvals (if any) have been granted by the applicable governing health authority of such country.

1.18 Ignyta Know-How means know-how that (a) is Controlled by Ignyta or its Affiliates as of the Effective Date or during the term of the Agreement and (b) is necessary or useful to develop, make, have made, use, sell, offer to sell, import, export, register and promote a Product

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

in the Territory, but only to the extent that such know-how is related to an API or a Product or a method of using or manufacturing an API or Product.

1.19 "Ignyta Patents" means the patents and patent applications (including provisional applications, continuations, divisionals and continuations-in-part) that are Controlled by Ignyta or its Affiliates as of the Effective Date or at any time during the term of this Agreement that, in each case, claim an API, a Product or their method of formulation, manufacture or use, and all patents issuing therefrom (and all substitutions, reissues, renewals, reexaminations, supplementary protection certificates, extensions, registrations and confirmations of any of the foregoing patents).

1.20 "Inventions" shall mean any invention, improvement, modification, know-how, information or other technology that is first conceived by either or both of the Parties pursuant to work conducted in the Development of Products.

1.21 "Licensed IP Rights" shall mean, collectively, the Nerviano Patents and the Nerviano Know-How.
1.22 "Major Market Countries" shall mean the United States, United Kingdom, France, Spain, Italy, Germany, Japan and China.

1.23 "MHLW" shall mean the Ministry of Health, Labour and Welfare of Japan, or the successor thereto.
1.24 "NDA" shall mean a New Drug Application, or similar application for marketing approval of a Product submitted to the FDA, EMA or MHLW, or any comparable Competent Authority.

1.25 "NDA Approval" shall mean the approval of an NDA by all applicable Competent Authorities.
1.26 "Nerviano Know-How" shall mean all trade secrets and other know-how rights in and to all data, information, regulatory correspondence, compositions and other technology (including, but not limited to, formulae, procedures, protocols, techniques and results of experimentation and testing) that are (a) Controlled by Nerviano or its Affiliates as of the Effective Date or at any time during the term of this Agreement and (b) are necessary or useful for Ignyta to make, use, develop, sell or seek regulatory approval to market a composition, or to practice any method or process, at any time claimed or disclosed in any issued patent or pending patent application within the Licensed IP Rights or that otherwise relate to the APIs, the Products or their manufacture or use.

1.27 "Nerviano Patents" shall mean the patents that are Controlled by Nerviano or its Affiliates as of the Effective Date or at any time during the term of this Agreement and are (a) the patents and patent applications listed on Exhibit 1.27, (b) all patents and patent applications in any country of the world that claim or cover any or all of the APIs, the Products or the manufacture or use thereof, and in which Nerviano heretofore or hereafter has an ownership or (sub)licensable interest, (c) all divisions, continuations, continuations-in-part, that claim priority to, or common priority with, the patent applications described in clauses (a) and

(b) above or the patent applications that resulted in the patents described in clauses (a) and (b) above, and (d) all patents that have issued or in the future issue from any of the foregoing patent applications, including utility, model and design patents and certificates of invention, together with any reissues, renewals, extensions or additions thereto.

1.28 Net Sales means the gross amount invoiced on sales of a Product by Ignyta, or its Affiliates or Sublicensees, to unrelated Third Parties less deductions for the following items, as allocable to such Product (if not previously deducted from the amount invoiced), consistent with customary business practices and in accordance with U. S. Generally Accepted Accounting Principles, consistently applied:

(a) any rebates, quantity, trade and cash discounts;

(b) charge-back payments and rebates granted to managed health care organizations or to federal, state, and local governments, their respective agencies, purchasers, or reimbursers, including mandatory rebates;

(c) retroactive price reductions, credits or allowances actually granted upon rejections or returns, including for recalls or damaged goods;

(d) a reasonable allowance for bad debts;

(e) freight, insurance, data and other charges or fees related to shipping or handling or services provided in connection with such shipping or handling (to the extent borne by the Party) and inventory management fees, discounts or credits provided that the cumulative annual amount of such deduction under this paragraph (e) shall not exceed three percent (3%) of the cumulative annual gross sales; and

(f) sales taxes, excise taxes, use taxes, tariffs and import/export duties, or other governmental charges actually due or incurred with respect to such sales, including value-added taxes.

All such discounts, allowances, credits, rebates and other deductions shall be fairly and equitably allocated to the Product and other products or services of Ignyta, and its Affiliates or Sublicensees, such that the Product does not bear a disproportionate portion of such deductions. The transfer of Product by Ignyta to an Affiliate or Sublicensee of Ignyta shall not be considered a sale. Every other commercial use or disposition of a Product by Ignyta or its Sublicensees in barter or other transactions (other than dispensing of reasonable and customary quantities for promotional sampling, for testing or trials, or for compassionate use) shall be considered a sale of such Product at the weighted average Net Sales price for such Product during the preceding quarter.

Where the consideration for Products includes any non-cash element, the Net Sales applicable to any such transaction shall be the fair market value for the applicable quantity for the period in question in the applicable country of the Territory. The fair market value shall be determined, wherever possible, by reference to the average selling price of the relevant Product in arm s length transactions in the relevant country.

If a Product is sold in a package or formulated in combination with one or more other active ingredients that are not an API (as used in this definition of Net Sales, a "Combination Product"), then for each quarter payment period and on a country-by-country basis, the gross amount invoiced for that Product shall be calculated by multiplying the gross amount invoiced for such Combination Product by the fraction A/(A+B), where "A" is the gross amount invoiced for the Product sold separately and "B" is the gross amount invoiced for the other active ingredient(s) sold separately. If the other active ingredient is not sold separately, then the gross amount invoiced for that Product shall be calculated by multiplying the gross amount invoiced for the Combination Product by the fraction A/C, where "A" is the gross invoice amount for the Product, if sold separately, and "C" is the gross invoice amount for the Combination Product. If a particular Combination Product is not addressed by the foregoing, Net Sales for royalty determination shall be determined by the Parties in good faith.

1.29 "Non-Royalty Income" means any and all consideration in any form provided by a Sublicensee to Ignyta or any of its Affiliates for a grant of a sublicense under any of the Licensed IP Rights including without limitation [***].

1.30 "Person" shall mean an individual, corporation, partnership, limited liability company, trust, business trust, association, joint stock company, joint venture, pool, syndicate, sole proprietorship, unincorporated organization, governmental authority or any other form of entity not specifically listed herein.

1.31 "Phase I Clinical Trial" shall mean a human clinical trial that is intended to initially evaluate the safety and/or pharmacological effect of a Product in subjects or that would otherwise satisfy requirements of 21 C.F.R. 312.21(a), or its foreign equivalent.

1.32 "Phase II Clinical Trial" shall mean a human clinical trial in any country that is intended to initially evaluate the effectiveness of a Product for a particular indication or indications in patients with the disease or indication under study or would otherwise satisfy requirements of 21 CFR 312.21(b), or its foreign equivalent. A Phase IIa Clinical Trial shall not be a Phase II Clinical Trial until such time as the portion of the clinical trial described above is commenced. For the avoidance of doubt, a phase I/II expansion cohort study shall not be a Phase II Clinical Trial.

1.33 "Phase IIa Clinical Trial" shall mean a human clinical trial in any country that is solely intended to make a preliminary determination of the effectiveness of a Product for a particular indication or indications in patients with the disease or indication under study.

1.34 "Phase III Clinical Trial" shall mean a human clinical trial in any country, the results of which could be used to establish safety and efficacy of a Product as a basis for an NDA or would otherwise satisfy requirements of 21 CFR 312.21(c), or its foreign equivalent.

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

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1.35 Product(s) shall mean any product that incorporates any or all of the APIs and if made, used, sold, offered for sale or imported absent the license granted hereunder would infringe a Valid Claim, or that otherwise uses or incorporates the Nerviano Know-How.

1.36 Registration(s) shall mean any and all permits, licenses, authorizations, registrations or regulatory approvals (including NDAs) required and/or granted by any Competent Authority as a prerequisite to the development, manufacturing, packaging, marketing and selling of any product.

1.37 Royalty Term shall mean, with respect to each Product in each country, the longer of (a) the period during which a Valid Claim remains in effect and would be infringed but for the license granted by this Agreement, by the use, offer for sale, sale or import of such Product in such country, and (b) ten (10) years after the First Commercial Sale of such Product in such country.

1.38 Sublicense Agreement means any agreement or set of agreements under which Ignyta grants a Sublicensee a sublicense, option or other right allowing such Sublicensee to develop, use, distribute or sell a Product. A distributor agreement shall not be a Sublicense Agreement.

1.39 Sublicensee means an Affiliate or Third Party to whom Ignyta grants a sublicense under any Licensed IP Rights to develop, use, distribute or sell a Product in the Territory, or otherwise grants any right to develop, promote, distribute and sell a Product in the Territory. A distributor shall not be a Sublicensee.

1.40 Territory shall mean the world.

1.41 Third Party shall mean any Person other than Nerviano, Ignyta and their respective Affiliates.

1.42 Valid Claim shall mean a claim of an issued and unexpired patent included within the Licensed IP Rights, which has not been held permanently revoked, unenforceable or invalid by a decision of a court or other governmental agency of competent jurisdiction, unappealable or unappealed within the time allowed for appeal, and which has not been admitted to be invalid or unenforceable through reissue or disclaimer or otherwise.

1.43 Interpretation.

(a) Whenever any provision of this Agreement uses the term including (or includes), such term shall be deemed to mean including without limitation and including but not limited to (or includes without limitations and includes but i not limited to) regardless of whether the words without limitation or but not limited to actually follow the term including (or includes);

(b) Herein, hereby, hereunder, hereof and other equivalent words shall refer to this Agreement as an entirety and no solely to the particular portion of this Agreement in which any such word is used;

(c) The recitals set forth at the start of this Agreement, along with the Exhibits and Schedules to this Agreement, and the terms and conditions incorporated in such recitals, Exhibits and Schedules shall be deemed integral parts of this Agreement and all references in this Agreement to this Agreement shall encompass such recitals, Exhibits and Schedules and the terms and conditions incorporated in such recitals, Exhibits and Schedules;

(d) Unless otherwise provided, all references to Sections, Articles, Schedules and Exhibits in this Agreement are to Sections, Articles, Schedules and Exhibits of and to this Agreement;

(e) All references to days, months, quarters or years are references to calendar days, calendar months, calendar quarters or calendar years;

Any reference to any federal, national, state, local or foreign statute or law shall be deemed to also refer to all rules and regulations promulgated thereunder, unless the context requires otherwise.

2. REPRESENTATIONS AND WARRANTIES

2.1 Mutual Representations and Warranties. Each Party hereby represents and warrants to the other Party as of the Effective Date as follows:

(a) Such Party is a corporation duly organized, validly existing and in good standing under the laws of the jurisdiction in which it is incorporated.

(b) Such Party (a) has the corporate power and authority and the legal right to enter into this Agreement and to perform its obligations hereunder, and (b) has taken all necessary corporate action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder. This Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid, binding obligation, enforceable against such Party in accordance with its terms.

(c) All necessary consents, approvals and authorizations of all governmental authorities and other Persons required to be obtained by such Party in connection with this Agreement have been obtained.

(d) The execution and delivery of this Agreement and the performance of such Party s obligations hereunder (a) do not conflict with or violate any requirement of applicable laws or regulations, and (b) do not conflict with, or constitute a default under, any contractual obligation of it.

2.2 Additional Nerviano Representations and Warranties. Nerviano hereby represents and warrants to Ignyta that Nerviano (a) is the sole owner or exclusive licensee of the Licensed IP Rights, and except as Nerviano has expressly informed Ignyta in writing prior to the date of this Agreement, has not granted to any Third Party any license or other interest in the Licensed IP Rights, (b) is not aware of any Third Party patent, patent application or other intellectual property rights that would be infringed (i) by practicing any process or method or by making, using or selling any composition which is claimed or disclosed in the Nerviano Patents or which constitutes Nerviano Know-How or (ii) by making, using or selling Products, (c) is not aware of

any infringement or misappropriation by a Third Party of the Licensed IP Rights, (d) all inventors of the inventions claimed in the Nerviano Patents have assigned all their right, title and interest in and to such inventions to Nerviano, and (e) is not, either directly or indirectly through any Affiliate, (i) developing and/or commercializing a Competing Product, or (ii) enabling or licensing any Third Party to research, develop and/or commercialize a Competing Product.

2.3 Additional Ignyta Representations and Warranties. Ignyta hereby further represents and warrants to Nerviano that as, of the Effective Date, to its knowledge no Pharmaceutical Company owns more than five (5) percent of Ignyta s currently outstanding and fully diluted shares of stock or other securities of Ignyta, indebtedness or options, warrants or other rights convertible into such securities, nor has entered into any agreement or other arrangement to acquire any such securities or other rights.

2.4 Disclaimer of Warranties. EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THIS AGREEMENT OR MANDATED BY APPLICABLE LAW (WITHOUT THE RIGHT TO WAIVE OR DISCLAIM), NEITHER PARTY MAKES ANY REPRESENTATION OR WARRANTY WITH RESPECT TO THE PRODUCT, ANY TECHNOLOGY, GOODS, SERVICES, RIGHTS, THE SUCCESS OF EFFORTS CONTEMPLATED UNDER THIS AGREEMENT, OR OTHER SUBJECT MATTER OF THIS AGREEMENT AND HEREBY DISCLAIMS ALL WARRANTIES, CONDITIONS OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF PERFORMANCE, MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

3. LICENSE GRANT; EXCLUSIVITY

3.1 Licensed IP Rights.

(a) Nerviano hereby grants to Ignyta an exclusive license (with the right to grant Sublicenses subject to Section 3.3) under the Licensed IP Rights to conduct research and to develop, make, have made, use, offer for sale, sell and import Products in the Territory for use in the Field.

(b) Nerviano hereby grants to Ignyta a royalty-free, non-exclusive license (with the right to grant Sublicenses subject to Section 3.3) under any patent, know-how or other intellectual property rights Controlled by Nerviano to research and to develop, make, have made, use, offer for sale, sell and import any diagnostic product for one or more of the Exclusive Targets.

3.2 Exclusivity. For the period commencing with the Effective Date and ending [***], neither Nerviano nor its Affiliates shall, directly or indirectly, initiate or conduct (or enable or

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license any Third Party to) research, develop and/or commercialize a Competing Product; provided that [***].

3.3 Sublicenses. Subject to the terms and consistent with the obligations of this Agreement, Ignyta shall have the right to grant sublicenses within the scope of the licenses under Section 3.1. For the avoidance of doubt, the right for Ignyta to grant sublicenses is intended to include the right to further sublicense provided that Ignyta or its Sublicensee shall inform Nerviano in writing of such further sublicense.

3.4 Availability of the Licensed IP Rights and APIs; Relevant Information.

(a) Nerviano shall promptly provide Ignyta with a copy of all information available to Nerviano relating to the Licensed IP Rights or APIs, including without limitation: (a) all quantities of the APIs (whether GMP or non-GMP), (b) all assays to one or more of the Exclusive Targets (including diagnostic, pharmacology or release assays), (c) information and know-how regarding the manufacture or use of the APIs or otherwise relating to the Exclusive Targets, (d) regulatory submissions, (e) communications with the Competent Authorities (including the minutes of any meetings), (f) trial master files, including case report forms, (g) listings and tables of results from non-clinical studies, (h) storage of and access permission to any retained samples of materials used in non-clinical studies, and (j) access to CROs, sites and investigators involved in non-clinical studies.

(b) Upon the request of Ignyta, Nerviano will promptly provide Ignyta with a copy of all information existing at the Effective Date available to Nerviano relating to the Predecessor Compound, including without limitation: (a) all information and know-how regarding the manufacture or use of the Predecessor Compound, (b) regulatory submissions, (c) communications with the Competent Authorities (including the minutes of any meetings), (d) trial master files, including case report forms, (e) listings and tables of results from non-clinical and clinical studies, (f) treatment-related serious adverse event reports from the clinical trials, (g) storage of and access permission to any retained samples of materials used in non-clinical studies and clinical trials, and (h) access to CROs, sites and investigators involved in non-clinical studies and clinical trials (collectively, Predecessor Compound Information). Ignyta shall have a non-exclusive, worldwide, royalty-free, perpetual right and license under any applicable intellectual property rights Controlled by Nerviano to use the Predecessor Compound Information for any purpose related to the diagnosis, prevention or treatment of any disease, state or condition in humans. For the avoidance of doubt, subject to Section 3.2, [***].

3.5 Registrations. Nerviano acknowledges and agrees that Ignyta shall own all Registrations for Products for use in the Field in each country in the Territory. After the Effective Date, Nerviano shall transfer to Ignyta all Registrations for Products. Nerviano hereby grants to Ignyta a free-of-charge right to reference and use and have full access to all other Registrations and all other regulatory documents that relate to the Licensed IP Rights or APIs, including INDs, BLAs, NDAs and DMFs (whether as an independent document or as part of any NDA, and all

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chemistry, manufacturing and controls information), and any supplements, amendments or updates to the foregoing (for the purposes of this Section, the Right of Reference). Ignyta shall have the right to (sub)license the Right of Reference to its Sublicensees and Affiliates. Nerviano shall promptly notify Ignyta of any written or oral notices received from, or inspections by any Competent Authority relating to any such Registrations, and shall promptly inform Ignyta of any responses to such written notices or inspections and the resolution of any issue raised by such Competent Authority. During the time that Nerviano is the holder of a Registration, Ignyta shall be entitled to attend any and all meetings and participate in telephone calls with the Competent Authorities, including without limitation any meeting preparation, meeting co-ordination and preparation of minutes.

3.6 Notwithstanding anything to the contrary contained herein, with respect to the RET APIs, Nerviano will continue development activities (using commercially reasonable and diligent efforts and resources, but in no event lesser efforts and resources than have been used by Nerviano to date in such development activities) through the earlier of (a) December 31, 2014 or (b) the identification of a RET API that is ready to be moved into toxicology studies in compliance with current good laboratory practices to support later clinical development, at which point Ignyta will assume development responsibility, utilizing Nerviano or its Affiliates in its sole discretion for services in furtherance of preclinical activities.

4. FINANCIAL CONSIDERATIONS

4.1 License Fees.

(a) Subject to the terms of this Agreement, within ten (10) days after the Effective Date, Ignyta shall pay to Nerviano a non-refundable initial fee of Three Million Five Hundred Thousand United States Dollars (US $ 3,500,000).

(b) In case of Sublicensing of rights to or under any of the Licensed IP Rights during the Early Development Term, then Ignyta, in addition to the initial license fee as per Section 4.1(a), shall pay to Nerviano a further amount equal to [***] of any Non-Royalty Income received from the Sublicensee**.**

4.2 Royalties.

Ignyta shall pay Nerviano the following royalties:

4.2.1 During the applicable Royalty Term for a Product, on a Product-by-Product and country by country basis, subject to the terms and conditions of this Agreement, with respect to annual Net Sales of each Product by Ignyta its Affiliates or Sublicensees, Ignyta shall pay to Nerviano royalties (the Royalties) equal to:

(a) for annual Net Sales of such Product in countries where the sale of such Product is covered by a Valid Claim in such country, then:

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(i) [***] of the first [***] of such Net Sales,

(ii) [***] of such Net Sales in excess of [***] but less than [***], and

(iii) [***] of such Net Sales in excess of [***]; and

(b) for annual Net Sales of such Product in countries where the sale of such Product is not covered by a Valid Claim in such country, [***] of such Net Sales.

Only one Royalty shall be owing for a Product regardless of how many Valid Claims cover such Product.

4.2.2 Third Party Royalties. If Ignyta, its Affiliates or Sublicensees is required to pay royalties to any Third Party in order to exercise its rights hereunder to make, have made, use, sell, offer to sale or import any Product, then Ignyta shall have the right to credit [***] of such Third Party royalty payments against the Royalties owing to Nerviano under Section 4.2.1 with respect to sales of such Product in such country; provided, however, that Ignyta shall not reduce the amount of the Royalties paid to Nerviano under Section 4.2.1 by reason of this Section 4.2.2, with respect to sales of such Product in such country, to less than [***] of the Royalties that would otherwise be due under Section 4.2.1.

4.3 Milestone Payments.

(a) CDC7 Products. Ignyta shall pay to Nerviano the following amounts within [***] following the first achievement of the applicable development milestone event as set forth below with respect to a Product that incorporates a CDC7 API (a "CDC7 Product"). Each milestone payment is due only one time.

Milestone Event	Payment (in US Dollars)
[***]	[***]

(b) RET Products. Ignyta shall pay to Nerviano the following amounts within [***] following the first achievement of the applicable development milestone event as set forth below with respect to a Product that incorporates a RET API (a "RET Product"). Each milestone payment is due only one time.

Milestone Event	Payment (in US Dollars)
[***]	[***]

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(c) For purposes of the above Milestone Events, [***].

(d) In the event any Product that achieves any Milestone Event hereunder includes both a CDC7 API and a RET API, only the Milestone Payments set forth in Section 4.3(a) (and not any of the Milestone Payments set forth in Section 4.3(b)) will apply to such Product that achieves that Milestone Event, provided that this Section 4.3(d) does not prejudice the payment of Milestones due under 4.3(b) when achieved for RET Products as single agent or in different Combination Products.

5. ROYALTY REPORTS AND ACCOUNTING

5.1 Royalty Reports. Within sixty (60) days after the end of each calendar quarter during the term of this Agreement following the First Commercial Sale of a Product, Ignyta shall furnish to Nerviano a quarterly written report (each, a Payment Report) stating in reasonably specific detail (a) the gross sales of a Product sold by Ignyta, its Affiliates or Sublicensees, (b) the units sold by Ignyta, its Affiliates and Sublicensees and the calculation of Net Sales during such calendar quarter on a country by country basis; (c) the calculation of the Royalties, if any, that shall have accrued based upon such Net Sales; (d) the withholding taxes, if any, required by law to be deducted with respect to such sales; and (e) the exchange rates, if any, used in determining the amount of United States Dollars. With respect to sales of Products invoiced in United States Dollars, the gross sales, Net Sales and Royalties payable shall be expressed in United States Dollars. With respect to Net Sales invoiced in a currency other than United States Dollars, such amounts shall be expressed both in the currency in which the distribution is invoiced and in the United States Dollar equivalent. The United States Dollar equivalent shall be calculated using the average of the exchange rate (local currency per US$1) published in The Wall Street Journal, Western Edition, under the heading Currency Trading on the last business day of each month during the applicable calendar quarter.

5.2 Audits.

5.2.1 Ignyta shall keep full and true books of accounts and other records in sufficient detail so that the Royalties payable hereunder can be properly ascertained. Upon the written request of Nerviano and not more than once in each calendar year, Ignyta shall permit an independent certified public accounting firm of nationally recognized standing selected by Nerviano and reasonably acceptable to Ignyta, at Nerviano s expense, to have access during normal business hours to such books and financial records of Ignyta as may be necessary to determine the correctness of any Payment Report or payment made under this Agreement or to obtain information as to Royalties payable in case of failure to report or pay pursuant to the terms of this Agreement and as may be reasonably necessary to verify the accuracy of the Payment

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Reports hereunder for the eight (8) calendar quarters immediately prior to the date of such request (other than records for which Nerviano has already conducted an audit under this Section).

5.2.2 If such accounting firm concludes that additional amounts were owed during the audited period, Ignyta shall pay such additional amounts within thirty (30) days after the date Nerviano delivers to Ignyta such accounting firm s written report so concluding. The fees charged by such accounting firm shall be paid by Nerviano; provided, however, if the audit discloses that the Royalties payable by Ignyta for such period are more than one hundred five percent (105%) of the Royalties actually paid for such period, then Ignyta shall pay the reasonable fees and expenses charged by such accounting firm. Ignyta shall require each Sublicensee (whether an Affiliate or a Third Party) to extend to Nerviano the same audit rights as those described in this Section 5.2.

5.2.3 Nerviano shall cause its accounting firm to retain all financial information subject to review under this Section 5.2 in strict confidence; provided, however, that Ignyta shall have the right to require that such accounting firm, prior to conducting such audit, enter into an appropriate non-disclosure agreement with Ignyta regarding such financial information. The accounting firm shall disclose to Nerviano only whether the reports are correct or not and the amount of any discrepancy. No other information shall be shared. Nerviano shall treat all such financial information as Ignyta s Confidential Information.

6. PAYMENTS

6.1 All payments due under this Agreement shall be paid in immediately available funds in US Dollars to the bank account designated in writing by Nerviano. To the extent Net Sales are accrued in currencies other than dollars, Net Sales shall be converted to US Dollars using the average of the exchange rate (local currency per US$1) published in The Wall Street Journal, Western Edition, under the heading Currency Trading on the last business day of each month during the applicable calendar quarter.

6.2 Payment Terms Royalties shown to have accrued by each Payment Report provided for under Section 5 shall be due on the date such Payment Report is due. Payment of Royalties in whole or in part may be made in advance of such due date.

6.3 Exchange Control. If at any time legal restrictions prevent the prompt remittance of part or all Royalties with respect to any country in the Territory where the Product is sold, Ignyta shall have the right, in its sole discretion, to make such payments by depositing the amount thereof in local currency to Nerviano s account in a bank or other depository institution in such country. If the Royalty rate specified in this Agreement should exceed the permissible rate established in any country, the Royalty rate for sales in such country shall be adjusted to the highest legally permissible or government-approved rate.

6.4 Withholding Taxes. Ignyta shall be entitled to deduct the amount of any withholding taxes, value-added taxes or other taxes, levies or charges with respect to such amounts, other than United States taxes, payable by Ignyta, its Affiliates or Sublicensees, or any taxes required to be withheld by Ignyta, its Affiliates or Sublicensees, to the extent Ignyta, its Affiliates, or

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Sublicensees pay to the appropriate governmental authority on behalf of Nerviano such taxes, levies or charges. Ignyta shall use reasonable efforts to minimize any such taxes, levies or charges required to be withheld on behalf of Nerviano by Ignyta, its Affiliates or Sublicensees. Ignyta promptly shall deliver to Nerviano proof of payment of all such taxes, levies and other charges, together with copies of all communications from or with such governmental authority with respect thereto.

7. DEVELOPMENT

7.1 Joint Development Committee.

(a) Within 30 days following the Effective Date, Nerviano and Ignyta shall appoint a Joint Development Committee (the JDC) to exchange information regarding all activities related to the Development of the Products, including to facilitate the transfer from Nerviano to Ignyta of Nerviano Know-How. The JDC shall continue to be in effect until the receipt of the first NDA Approval for a Product.

(b) The JDC will consist of four individuals of which two will be designated by Nerviano and two will be designated by Ignyta. Ignyta has the right to designate the chair of the JDC. One representative from each Party shall be a senior executive from such Party, and the other representative shall be the project leader from such Party. Each Party shall have the right, at any time, to designate by written notice to the other Party, a replacement for any of such Party s members on the JDC. The JDC shall endeavor to work by consensus. Where consensus cannot be reached, Ignyta shall make the final determination after consultation with Nerviano and considering Nerviano position in good faith; *provided, however,* that Ignyta shall not make any final determination that conflicts with the terms and conditions of this Agreement. As of the time of the establishment of the JDC, each Party shall also designate one of its members of the JDC as the primary contact and coordinator for such Party, to facilitate communication and coordination of the Parties activities under the Agreement (the Project Coordinator).

(c) The JDC shall meet as necessary, but, in any event no less frequently than twice each year. In lieu of in person meetings, meetings of the JDC may take place by telephonic or video conference. The site for the in-person meetings shall alternate between Nerviano, Italy and San Diego, California, or such other location agreed to by the Parties. Other than with respect to special meetings of the JDC, which may be called by either Party on not less than ten days prior written notice (which notice may be by e-mail), the chairperson shall send to the members of the JDC a notice of and agenda for each meeting at least five business days prior to the date of such meeting.

(d) Promptly after each meeting of the JDC, the chairperson shall (or shall designate another member of the JDC) to prepare and distribute, via facsimile or e-mail to all members of the JDC, draft minutes, including action steps and decisions, of the meeting. Promptly after the draft minutes are distributed, the members shall either note their approval or provide proposed revisions to the draft. Promptly after the receipt of all approvals or proposed revisions to the draft, the chairperson shall issue the final minutes of the JDC.

(e) Each Party shall bear its own costs, including travel, lodging, food and telephone or video conference costs, for its personnel serving on the JDC or attending any meeting of the JDC.

7.2 Nerviano Support. Commencing on or promptly following the Effective Date and continuing throughout the term of this Agreement, Nerviano shall provide Ignyta with Nerviano Know-How in its possession that is reasonably required to conduct the Development of the Products, and is reasonably requested by Ignyta.

7.3 Regulatory Approvals. Ignyta, either on its own or through its Affiliates or permitted Sublicensees, shall use Commercially Reasonable Efforts to (a) obtain NDA Approvals for Products in each of the Major Market Countries; (b) compile, submit and prosecute in a timely manner all necessary data, documents, NDAs (including labeling), in a format acceptable to the applicable Competent Authorities with respect to such NDA Approvals, except that if Ignyta requests and to the extent that Nerviano has contributed to relevant parts of the CMC section, then Nerviano shall assist Ignyta in completing the related CMC section of the filings; and (c) maintain and renew the NDA Approvals obtained by Ignyta and hold all such filings and approvals in its name, all at Ignyta s expense. Ignyta shall pay all user fees and other costs required to obtain and maintain such NDA Approvals. Ignyta and its Affiliates may use and cross-reference any Registrations held by Nerviano or its Affiliates for the Products.

7.4 On-Going Disclosure Regarding Development. Ignyta will keep Nerviano informed about Ignyta s or its Affiliate s or Sublicensee s, efforts to Develop the Products, including summaries regarding Ignyta s progress towards meeting the pertinent goals and milestones discussed by the JDC. Such disclosures will be made through the JDC at JDC meetings and in a written report to be attached to or included in the minutes of each JDC meeting. Without limiting the generality of the foregoing, such reports will contain the following: filing of an IND or NDA with respect to a Product in any jurisdiction; initiation of any clinical study with respect to a Product in any jurisdiction; and identification of NDA Approvals in any jurisdiction.

7.5 Development Data.

(a) Promptly after the Effective Date, Nerviano shall transfer to Ignyta all existing Development Data and during the term of this Agreement Nerviano shall promptly and consistently transfer to Ignyta all Development Data as and when generated or developed. Ignyta shall be the sole owner of the Development Data and Nerviano does and hereby assigns to Ignyta all of its right, title and interest therein.

(b) Both Parties shall develop and maintain the Development Data, related records, documents and raw data in sufficient detail and in good scientific manner as will properly reflect all work done and results achieved in the development of the APIs and Products.

8. MANUFACTURE

8.1 Product Supply**.** Ignyta shall have the right to manufacture or engage a third party manufacturer for the supply of the APIs or Products.

8.2 DMF. To the extent required CMC information is not contained in any IND submitted to the FDA, Ignyta shall establish with the FDA a drug master file for the Product (DMF) and, if

requested by Ignyta, and to the extent that Nerviano has contributed to relevant parts of the CMC section, Nerviano shall assist Ignyta in obtaining the DMF.

8.3 [***]

9. CONFIDENTIALITY

9.1 Confidential Information. During the term of this Agreement, and for a period of five (5) years following the expiration or earlier termination hereof, each Party shall maintain in confidence all information of the other Party that is disclosed by the other Party and identified as, or acknowledged to be, confidential at the time of disclosure (the Confidential Information), and shall not use, disclose or grant the use of the Confidential Information except on a need-to-know basis to those directors, officers, Affiliates, employees, permitted licensees, permitted assignees and agents, consultants, clinical investigators or contractors, to the extent such disclosure is reasonably necessary in connection with performing its obligations or exercising its rights under this Agreement. To the extent that disclosure is authorized by this Agreement, prior to disclosure, each Party hereto shall obtain agreement of any such Person to hold in confidence and not make use of the Confidential Information for any purpose other than those permitted by this Agreement. Each Party shall notify the other promptly upon discovery of any unauthorized use or disclosure of the other Party s Confidential Information.

9.2 Permitted Disclosures. The confidentiality obligations contained in Section 9.1 shall not apply to the extent that (a) any receiving Party (the Recipient) is required (i) to disclose information by law, regulation or order of a governmental agency or a court of competent jurisdiction, provided that the Recipient shall provide written notice thereof to the other Party and sufficient opportunity to object to any such disclosure or to request confidential treatment thereof, or (ii) to disclose information to any governmental agency for purposes of obtaining approval to test or market a product; or (b) to disclose to its employees, directors, consultants, Sublicensees or Affiliates who have a need to know for purposes of this Agreement and are under an obligation of confidentiality equivalent to that of the Recipient. Notwithstanding any other provision of this Agreement, Ignyta may disclose Confidential Information of Nerviano relating to information developed pursuant to this Agreement to any Person with whom Ignyta has, or is proposing to enter into, a business relationship, as long as such Person has entered into a confidentiality agreement with Ignyta.

9.3 Disclosure of Financial and Other Terms**.** Except as required by applicable laws, treaties and agreements (including securities laws), the Parties agree that the material terms of this Agreement will be considered Confidential Information of both Parties. Notwithstanding the foregoing, (a) either Party may disclose such terms as are required to be disclosed in its publicly-filed financial statements or other public statements, pursuant to applicable laws, regulations and stock exchange rules (*e.g.*, the U.S. Securities and Exchange Commission, NASDAQ, NYSE, or any other stock exchange on which securities issued by Ignyta or Nerviano may be issued);

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provided, such Party shall provide the other Party with a copy of the proposed text of such statements or disclosure (including any exhibits containing this Agreement) sufficiently in advance of the scheduled release or publication thereof to afford such other Party a reasonable opportunity to review and comment upon the proposed text (including redacted versions of this Agreement), (b) either Party shall have the further right to disclose the material financial terms of this Agreement on a confidential basis to any potential and actual Sublicensee, Acquiror, merger partner or potential providers of financing and their advisors in connection with due diligence investigations by, or presentations to, such entities, and (c) either Party shall have the right to disclose information regarding the development or commercialization status of a Product to the extent such disclosure is customary and material to their potential and actual Sublicensees, current investors, or required by applicable laws or stock exchange rules. Neither Party shall make any other statement to the public regarding the execution and/or any other aspect of the subject matter of this Agreement, except: (x) where a Party reasonably believes disclosure is required under applicable laws or ethical commercial practice, (y) for customary discussions with current or prospective investors and analysts, and (z) either Party may use the text of a statement previously approved by the other Party. Promptly after the Effective Date, the Parties will draft and issue a mutually acceptable press release.

9.4 Publication. Nerviano shall not publish, present or disclose any data, information or results regarding the APIs or their use without the prior written consent of Ignyta. If Nerviano desires to make any such publication, presentation or disclosure, Nerviano shall first submit to Ignyta for its review, a copy of any proposed publication, presentation or other disclosure at least thirty (30) days prior to the date of submission for publication, presentation or other disclosure. If Ignyta gives written notice to Nerviano that it does not desire that the data, information or results be published, presented or otherwise disclosed, or Ignyta requests that certain of such data, information or results be removed for confidentiality or patent filing purposes, then Nerviano will not make such publication, presentation or other disclosure or will remove such data, information or results, as applicable.

10. INTELLECTUAL PROPERTY

10.1 Trademarks. Ignyta shall select and own the trademarks used on the Products (the Product Trademarks); *provided*, that no Product Trademark shall be the same as or confusingly similar to a trademark used by Nerviano as of the date of Ignyta s intended first use for any of its other products nor contain the phrase Nerviano Medical Sciences.

10.2 Ownership of Inventions. Subject to the terms hereof, including the licenses and other rights granted hereunder, all Inventions shall be owned as follows:

(a) Nerviano shall own the entire right, title and interest in and to all Inventions (including all patents and other intellectual property rights thereto) made solely by its employees or others acting on behalf of Nerviano (or solely by such persons and Third Parties performing work for Nerviano) in the Development of Products or other activities undertaken under this Agreement (After-Developed Nerviano Inventions). All After-Developed Nerviano Inventions will be included in the licenses and rights granted under Article 3 above;

(b) Ignyta shall own the entire right, title and interest in and to all Inventions (including all patents and other intellectual property rights thereto) made solely by its employees or others acting on behalf of Ignyta (or solely by such persons and Third Parties performing work for Ignyta) in the Development of Products or other activities undertaken under this Agreement;

(c) The Parties shall jointly own all Joint Inventions (as defined below). Nerviano rights in and to each Joint Invention (including all patent rights and other intellectual property rights to it) will be included in the licenses and rights granted under Article 3 above, and, subject to such license and rights, each Party may make, use, sell, keep, license or assign its interest in Joint Inventions and otherwise undertake all activities a sole owner might undertake with respect to such Joint Inventions, without the consent of and without accounting to the other Party. Joint Inventions means Inventions for which it is determined, in accordance with United States patent law, that both: (i) one or more employees, consultants or agents of Nerviano or any other persons obligated to assign such Invention to Nerviano; and (ii) one or more employees, consultants or agents of Ignyta or any other persons obligated to assign such Invention to Ignyta, are joint inventors.

10.3 Prosecution of Patents.

(a) Sole Inventions. Subject to the provisions of paragraphs (b) and (c) below, each Party shall have the right to: (i) determine whether patent applications should be filed on Inventions owned by it (other than Joint Inventions), and if so, where and when; (ii) control the prosecution and procurement of any such patents and any other Nerviano Patents, in the case of Nerviano, including their issuance, reissuance, reexamination and the defense of any interference, revocation or opposition proceedings, and to decide in which countries to maintain such patents when issued and for how long; and (iii) select all counsel or other parties necessary to prepare, file, prosecute and maintain all Nerviano Patents, in the case of Nerviano, or to advise or represent it in connection with such patent applications or patents. Ignyta shall reimburse Nerviano for the reasonable costs and expenses of filing, prosecuting and maintaining the Nerviano Patents except for any Post Grant Proceedings, which will be negotiated in good faith on a case-by-case basis, but Ignyta shall not be liable for such costs unless the parties have reached agreement. For the purpose of this Article 10.3, prosecution shall include any post-grant proceeding including patent interference proceeding, inter partes review, opposition proceeding and reexamination (collectively, Post Grant Proceedings).

(b) Joint Inventions. Ignyta shall be responsible for filing patent applications on, and directing the particulars (as described in Section 10.3(a)) of the patent prosecution for all Joint Inventions at its own cost and expense. Ignyta will exercise its reasonable efforts to keep Nerviano informed of significant steps taken in such matters. With respect to the prosecution of patent applications for Joint Inventions, Ignyta shall have the further right to take such actions as are necessary or appropriate to procure and maintain patents with respect thereto. All patent applications and patents directed to Joint Inventions (Joint Patents) shall be owned jointly between Nerviano and Ignyta. Upon request, unless and to the extent otherwise mutually agreed by each Party s patent counsel, Ignyta, to the extent practicable, shall furnish Nerviano with copies of such Joint Patents and other related correspondence relating to the prosecution of the Joint Patents to and from patent offices throughout the Territory, and permit Nerviano to offer its comments thereon before Ignyta makes a submission to a patent office. Nerviano shall offer its

comments promptly, including any request that the patents be filed in additional countries, although Ignyta shall determine the appropriate action after considering in good faith any comments or requests from Nerviano. If, in its sole discretion, Ignyta decides not to file a patent application on any Joint Invention, or ceases to diligently pursue prosecution or procurement, or fails to maintain the same in any country, that decision, cessation, or failure will not constitute a default under this Agreement. Rather, Nerviano shall then have the right, at its sole expense and in its sole discretion, to file patent applications, control prosecution and procurement, and maintain procured patents with respect to such Joint Invention. In respect of Joint Inventions, Ignyta shall pay all costs and expenses incurred in respect of patents prosecuted or maintained by it.

(c) Nerviano Patents. Nerviano shall prepare, prosecute and maintain all Nerviano Patents. Nerviano will exercise its reasonable efforts to keep Ignyta currently informed of significant steps to be taken in such preparation, prosecution and maintenance of all Nerviano Patents. Upon request, unless and to the extent otherwise mutually agreed by each Party s patent counsel, Nerviano, to the extent practicable, shall furnish Ignyta with copies of such Patents and other related correspondence relating to the prosecution of all Nerviano Patents to and from patent offices, and permit Ignyta to offer its comments thereon before Nerviano makes a submission to a patent office. Nerviano will reasonably incorporate the comments received from Ignyta. Ignyta will have the right to choose which countries in which to file patent applications, provided that Nerviano shall file in the following countries: countries in the European Patent Convention, U.S., Japan, Australia, India, Mexico, Canada, Brazil, Chile, China (including Hong Kong), Thailand, South Korea, and the following EAPC countries: Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrghyz Republic, Republic of Moldova, Russia, Tajikistan and Turkmenistan. Ignyta shall offer its comments promptly, including the list of additional countries. Subject to its antecedent obligations below, Nerviano may discontinue the prosecution of any patent application or abandon any patent encompassed within the Nerviano Patents. If Nerviano decides not to file or to abandon or allow to lapse any patent application or patent within the Nerviano Patents in any country of the Territory, Nerviano will promptly inform Ignyta of such decision and in the case of abandonment, at least 30 days prior to such abandonment or lapse and will give Ignyta the opportunity to prosecute such patent application and/or maintain such patent at its expense and in Ignyta s name. If Ignyta elects to undertake the prosecution of any Nerviano Patent, Nerviano will assign its right, title and interest in and to the pertinent Nerviano Patent to Ignyta, whereupon Ignyta will have no further obligation under this Agreement with respect to the payment of Royalties or otherwise pertaining to that Nerviano Patent.

10.4 Patent Term Extensions.

The Parties shall: (a) notify each other of the issuance of each patent where extension is possible included within the Nerviano Patents or Joint Patents, giving the date of issue and patent number for each such patent; and (b) advise each other in a timely manner of NDA Approval by the FDA, EMA, or MHLW for any Product and any other governmental approval that is pertinent to any patent term extension or restoration. The Parties shall use reasonable efforts to obtain all available patent term extensions or restorations of such Nerviano Patents or Joint Patents (including those available under the Hatch-Waxman Act). To that end, each Party shall: (c) supply the other Party, in a timely manner, with any information in its possession or control pertaining to, or desirable for, the extension of any Nerviano Patents or Joint Patent; (d) execute

and deliver to the other Party, in a timely manner, any authorizations, supporting affidavits and other documents required in connection with the extension of any Nerviano Patent or Joint Patent; and (e) take such other actions as may be reasonably requested by the other Party to obtain such extensions. The Parties shall cooperate with each other in seeking or gaining patent term restorations or extensions wherever applicable to such Nerviano Patents or Joint Patents, and in determining which Nerviano Patents or Joint Patents the Parties should seek and obtain patent term extension or restoration. The Party first eligible to seek patent term restoration or extension of any such Nerviano Patents or Joint Patents related thereto shall have the right to do so; *provided*, that if in any country the first Party has an option to extend the patent term for only one of several patents, the first Party will consult with the other Party before making the election. If more than one Nerviano Patents or Joint Patents (or other patents) is eligible for extension or patent term restoration, the Parties shall agree upon a strategy that will maximize patent protection for the Product.

10.5 Patent Certifications.

(a) Each Party shall immediately give notice to the other Party of any notice it receives of certification filed under the Hatch-Waxman Act (or substantially similar foreign law or regulation) claiming that any of the Ignyta Patents, Nerviano Patents or Joint Patents is invalid, unenforceable or that any infringement will not arise from the manufacture, use or sale of a Product by a Third Party. The right to bring suit against the entity making such a certification shall be governed by Section 10.6. Any suit by either Party may be in the name of either or both Parties, as may be required by law. For this purpose, the Party not bringing suit shall execute such legal papers necessary for the prosecution of such suit as may be reasonably requested by the Party bringing suit.

(b) To the extent required by law or permitted by law, Ignyta shall use its Commercially Reasonable Efforts to maintain with the applicable regulatory authorities during the term of this Agreement correct and complete listings of applicable patents for any Product then being commercialized by Ignyta, including all so called Orange Book listings required under the Hatch-Waxman Act.

10.6 Enforcement of Patent Rights.

(a) In the event that either Party becomes aware of any product containing the APIs that is made, used, or sold in the Territory which it believes to (i) infringe an Ignyta Patent, a Nerviano Patent or a Joint Patent, or (ii) constitute a misappropriation of know-how covering the use of any of the APIs or any Product in the Field, such Party (the Notifying Party) will promptly advise the other Party of all the relevant facts and circumstances known by the Notifying Party in connection with the infringement or misappropriation.

(b) Ignyta may enforce, and Nerviano does hereby grant to Ignyta the right to enforce as applicable, such Ignyta Patents, Nerviano Patents or Joint Patents against such infringement or misappropriation in the Territory at Ignyta s sole expense and in Ignyta s sole discretion. Nerviano and its Affiliates will fully cooperate with Ignyta with respect to the investigation and prosecution of such alleged infringement or misappropriation by Ignyta including the joining of Nerviano and its Affiliates as a Party to such action, as may be required by the law of the

particular forum where enforcement is being sought.

(c) Nerviano shall, at its sole expense and in its sole discretion, enforce such Nerviano Patents and Joint Patents against such infringement or misappropriation in the Territory if: (i) within 120 days (or such shorter time as would allow Nerviano to reasonably bring suit before any legal or regulatory deadline therefore) after receiving notice from Nerviano of the infringement or misappropriation, Ignyta elects, in its sole discretion, not to take action to investigate such alleged infringement or misappropriation and, if such infringement or misappropriation is subsequently reasonably demonstrated, to timely institute an action to abate such alleged infringement or misappropriation and to prosecute such action diligently, or (ii) Ignyta notifies Nerviano that Ignyta does not plan to terminate the infringement or misappropriation or institute such action. Ignyta and its Affiliates will fully cooperate with Nerviano with respect to the investigation and prosecution of such alleged infringement or misappropriation including the joining of Ignyta and its Affiliates as a Party to such action, as may be required by the law of the particular forum where enforcement is being sought.

(d) The Party prosecuting such infringement or misappropriation action will control the litigation and will bear all legal expenses (including court costs and legal fees and expenses), including settlement thereof; *provided*, that no settlement or consent judgment or other voluntary final disposition of any infringement or misappropriation action brought by a Party pursuant to this Section 10.6 may be entered into without the prior written consent of the other Party if such settlement would require the other Party to be subject to an injunction or to make a monetary payment in excess of $50,000 or would restrict the claims in or admit any invalidity of any of the Nerviano Patents or Joint Patents or significantly adversely affect the rights of the other Party to this Agreement.

(e) Any recovery obtained as a result of such action, whether by judgment, award, decree or settlement will first be applied to reimbursement of each Party s out-of-pocket expenses in bringing such suit or proceeding, and 75% of the remaining balance shall be distributed to the Party bringing such enforcement action, and 25% to the other Party.

10.7 Patent Infringement Claims.

(a) Each Party shall notify the other Party promptly in writing of any claim of, or action for, infringement of any patents or misappropriation of trade secret rights of any Third Party which is threatened, made or brought against either Party by reason of the development, manufacture, use or sale of any Product by either Party. Ignyta shall be responsible for defense of all such claims against Ignyta in the Territory except as otherwise provided in Article 12.

(b) In any suit, action or proceeding referred to in this Section 10.7 (regardless of which Party commences or defends), each Party shall, at its own expense, fully cooperate with the other Party and supply all assistance reasonably requested by the Party carrying on the proceeding, including providing the other Party with such witnesses, documents and records and other evidence as may be reasonably requested.

10.8 Cooperation. In any suit to enforce and/or defend the Licensed IP Rights or the Ignyta Patents pursuant to this Section 10, the Party not in control of such suit shall, at the request and

expense of the controlling Party, reasonably cooperate and, to the extent possible, have its employees testify when requested and make available relevant records, papers, information, samples, specimens, and the like.

11. TERMINATION

11.1 Term of Agreement. This Agreement shall become effective as of the Effective Date and, unless earlier terminated pursuant to other provisions of this Article 11, shall continue in full force and effect until Ignyta has duly and completely fulfilled its obligation to pay Royalties to Nerviano under Section 4.2. Following expiration of this Agreement - unless terminated in advance according to the provisions of present Article 11 - Ignyta shall have a fully paid-up, non-exclusive license under the Nerviano Know-How to conduct research and to develop, make, have made, use, sell, offer for sale and import Products in the Territory for use in the Field.

11.2 Termination by Ignyta. The Agreement may be terminated by Ignyta at any time as follows:

(a) prior to the First Commercial Sale of a Product, Ignyta may terminate this Agreement upon providing Nerviano with sixty (60) day written notice of its intent to terminate; or

(b) after the First Commercial Sale of a Product, Ignyta may terminate this Agreement upon three months prior written notice: *provided,* that Nerviano may then accelerate the effective date of termination to not less than 30 days after such notice from Ignyta.

11.3 Termination for Cause. Upon the material breach by one Party under this Agreement, the other Party shall notify the breaching Party of such breach, and require that the breaching Party cure such breach within 60 days (or, in the case of payment defaults, within 30 days), provided that, in the case of any default other than the payment default, such cure period shall be reasonably extended (not to exceed 120 days) if, despite the commercially reasonable efforts of the breaching Party, such default may not be cured within such 60 day period. In the event that the material breach is not cured within the applicable cure period, the notifying Party shall be entitled, without prejudice to any of its other rights conferred on it by this Agreement and any other remedies available to it by law or in equity, to terminate this Agreement.

11.4 Effect of Termination.

(a) Upon termination by Ignyta pursuant to Section 11.2 or by Nerviano pursuant to Section 11.3:

(i) All sublicenses granted by Ignyta to its Sublicensees under this Agreement pursuant to Section 3.3 shall survive the termination of this Agreement provided that such Sublicensees are not in breach of their respective Sublicense Agreements and assume in writing all obligations under such Sublicense Agreements to Nerviano directly; and

(ii) All rights and licenses granted by Nerviano to Ignyta will terminate.

(iii) Ignyta will assign to Nerviano all regulatory filings and NDA Approvals for the Products and the Development Data;

(iv) If termination occurs after submission of materials seeking NDA Approval for any Products, all rights to all Product Trademarks for use with the Product (excluding Ignyta s name) will be assigned to Nerviano;

(v) Ignyta will, at Nerviano s option, transfer to Nerviano responsibility for any then-ongoing clinical trials of Products in which patient dosing has commenced, and Nerviano shall be solely responsible for the costs of conducting such trials incurred after the effective date of termination of this Agreement;

(vi) Ignyta shall grant to Nerviano a royalty-bearing, exclusive license (with right to sublicense) under the Joint Inventions, Ignyta Patents and Ignyta Know-How existing as of the date of termination solely for the APIs or their manufacture or use in any indication (and no other active pharmaceutical ingredient or diagnostic).

(vii) If Ignyta has commenced a Phase II Clinical Trial as of the date of termination, then Nerviano shall pay Ignyta royalties of [***] of annual Net Sales (as such definition is revised to encompass sales by Nerviano or its Affiliates or sublicensees).

Ignyta will cooperate in any reasonable manner requested by Nerviano to achieve a smooth transition of the development, manufacturing, marketing and sales of Products to Nerviano or its licensees, such as transfer of manufacturing technology and assistance in connection with regulatory matters relating to the transfer of Products.

(b) Following termination of this Agreement by Ignyta pursuant to Section 11.3, Ignyta shall have a fully-paid, royalty-free, exclusive license under the Nerviano Know-How, the Nerviano Patents and the Joint Patents to conduct research and to develop, make, have made, use, sell, offer for sale and import Products in the Territory for use in the Field.

11.5 Surviving Provisions. The following Articles and Sections of this Agreement shall survive any expiration or termination of this Agreement for any reason: Sections 2.4, 9, 10.2, 11.4, 11.5, 12 and 13.

12. INDEMNIFICATION

12.1 Mutual Indemnification. Each Party shall defend, indemnify and hold the other Party and its Affiliates, and their respective directors, officers, employees, agents, contractors, sublicensees, and consultants harmless from and against any and all liabilities, losses, damages, settlements, claims, actions, suits, penalties, fines, costs or expenses (including reasonable attorneys fees and other expenses of litigation actually incurred) arising out of any claim or action brought by a Third Party (any of the foregoing, a Loss) arising out of or resulting from:

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

(a) the negligence, recklessness or intentional acts or omissions of the indemnifying Party and its Affiliates, and their respective directors, officers, employees and agents with respect to this Agreement and the transactions contemplated hereby;

(b) any breach of a representation, warranty, covenant or agreement of the indemnifying Party hereunder; and

(c) any personal injury or property damage occurring at a location owned, leased, or under the control of the indemnifying Party in connection with the transactions contemplated by this Agreement (except to the extent such Loss arose out of or resulted from the negligence, recklessness or intentional acts or omissions of the other Party or its Affiliates, and their respective directors, officers, employees and agents).

12.2 Ignyta**.** Except to the extent required to be indemnified by Nerviano under Section 12.3, Ignyta shall defend, indemnify and hold Nerviano, its Affiliates, and their respective directors, officers, employees and licensees, harmless from and against any and all Losses arising out of the development, non-clinical or clinical testing, use or sale of Products in the Territory by Ignyta or its Affiliates or Sublicensees, including any patent infringement or product liability claims (including any product defects, failure to comply with regulatory and other legal requirements, failure to provide adequate warnings and misuse of the Products); except the foregoing obligations of Ignyta will not apply to any Loss that arises from, or is due to any of: (a) actions or claims alleging that any action or inaction of Nerviano infringes any patent rights of any Third Party; (b) Nerviano s breach of its obligations under this Agreement, including its representations and warranties; or (c) Nerviano s negligence or willful misconduct.

12.3 Nerviano. Nerviano shall defend, indemnify and hold Ignyta, its Affiliates, and their respective directors, officers, employees, and licensees, harmless from and against any and all Losses to which such persons may become subject as a result of any claim, demand, action or other proceeding by any Third Party to the extent such Losses arise out of (a) a claim that any action or inaction of Nerviano infringes any patent rights of any Third Party; (b) Nerviano s breach of its obligations under this Agreement, including its representations and warranties; or (c) Nerviano negligence or willful misconduct.

12.4 Indemnification Procedure. In the event that either Party seeks indemnification under this Article 12, such Party shall inform the other Party of the claim as soon as reasonably practicable after it receives notice of the claim and, in any event, not later than 20 days after it receives such notice, and shall (a) permit the indemnifying Party to assume direction and control of the defense of the claim (including the right to settle such claim at its discretion; *provided*, that no such settlement may be entered into without the indemnified Party s consent if such settlement may adversely impact such Party s rights hereunder), and (b) cooperate as requested (at the expense of the indemnifying Party) in the defense of such claim. If both Parties are sued and it is reasonably likely that the Parties may have conflicting interests or if it is otherwise not advisable under applicable legal and ethical requirements for the indemnifying Party s defense counsel to represent both Parties, separate independent counsel shall be retained for each Party at the expense of the indemnifying Party.

12.5 Insurance. Immediately upon the first administration of any API or Product to a human in the Territory by Ignyta, its Affiliates or its Sublicensees, and for a period of three (3) years after the filing of an NDA in all Major Market Countries, Ignyta shall obtain and maintain, at its sole cost and expense, clinical trial insurance standard in the pharmaceutical trade in amounts of at least [***] per occurrence (or claim) and [***] in the aggregate limit of liability per year. Prior to the first NDA Approval, and for a period of five (5) years after the expiration of this Agreement or the earlier termination thereof, Ignyta shall obtain and maintain, at its sole cost and expense, product liability insurance standard in the pharmaceutical trade in amounts of at least [***] per occurrence (or claim) and [***] in the aggregate limit of liability per year. Ignyta shall provide written proof of the existence of such insurance to Nerviano upon request. If Ignyta sublicenses its rights to sell a Product in accordance with Section 3.3, such insurance obligations may be satisfied by its Sublicensees.

13. MISCELLANEOUS

13.1 Notices. Any consent, notice or report required or permitted to be given or made under this Agreement by one of the Parties hereto to the other Party shall be in writing, delivered by any lawful means to such other Party at its address indicated below, or to such other address as the addressee shall have last furnished in writing to the addressor and (except as otherwise provided in this Agreement) shall be effective upon receipt by the addressee.

If to Nerviano: Nerviano Medical Sciences S.r.l.
Viale Pasteur 10
20014 Nerviano (Milano)
Italy
Attention: Chief Executive Officer

With required copy to:

Nerviano Medical Sciences S.r.l.
Viale Pasteur 10
20014 Nerviano (Milano)
Italy
Attention: Head of Business Development

If to Ignyta: Ignyta, Inc.
11095 Flintkote Avenue, Suite D
San Diego, CA 92121, U.S.A
Attention: Chief Executive Officer

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

13.2 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of New York (USA), without regard to the conflicts of law principles thereof.

13.3 Force Majeure. Neither Party shall be held liable or responsible to the other Party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any term of this Agreement to the extent, and for so long as, such failure or delay is caused by or results from causes beyond the reasonable control of the affected Party including but not limited to fire, floods, embargoes, war, acts of war (whether war be declared or not), acts of terrorism, insurrections, riots, civil commotions, strikes, lockouts or other labor disturbances, acts of God or acts, omissions or delays in acting by any governmental authority or the other Party; *provided*, that the Party so affected shall give prompt notice thereof to the other. If any such cause prevents either Party from performing any of its material obligations hereunder for more than six months, the other Party may then terminate this Agreement upon 90 days prior notice. Except as provided in the immediately preceding sentence, no such failure or delay shall terminate this Agreement, and each Party shall complete its obligations hereunder as promptly as reasonably practicable following cessation of the cause or circumstances of such failure or delay.

13.4 Dispute Resolution.

(a) The Parties recognize that a bona fide dispute as to certain matters may from time to time arise during the term of this Agreement that relate to any Party s rights or obligations hereunder. In the event of the occurrence of any dispute arising out of or relating to this Agreement, including any question regarding its existence, validity or termination, any Party may, by written notice to the other, have such dispute referred to their respective officer designated below or their successors, for attempted resolution by good faith negotiations within sixty (60) days after such notice is received. Said designated officers are as follows:

For Nerviano: Chief Executive Officer

For Ignyta: Chief Executive Officer

(b) In the event that they shall be unable to resolve the dispute by executive mediation within thirty (30) days of the disputing Party s notice, then the dispute shall be finally settled by binding arbitration as provided below. The arbitration shall be conducted in English. The award of arbitration shall be final and binding upon both Parties.

(c) Any arbitration proceeding shall be conducted in accordance with the arbitration rules of the London Court of International Arbitration (*LCIA*). The place of arbitration shall be London, England. The procedures specified in this Section 13.4 shall not prevent either Party from seeking preliminary or permanent injunctive relief with respect to breaches of obligations under this Agreement in any appropriate jurisdiction.

13.5 Assignment. Ignyta shall not assign its rights or obligations under this Agreement without the prior written consent of Nerviano; provided, however, that each Party may assign without prior written consent, this Agreement and its rights and obligations hereunder (a) to any Affiliate, or (b) in connection with the transfer or sale of all or substantially all of its business to which this Agreement relates, or in the event of its merger, consolidation, change in control or

similar transaction. Any attempt to assign this Agreement in breach of the foregoing shall be void. This Agreement shall be binding upon and inure to the benefit of the Parties hereto and each of their successors and permitted assigns.

13.6 Waivers and Amendments. No change, modification, extension, termination or waiver of this Agreement, or any of the provisions herein contained, shall be valid unless made in writing and signed by duly authorized representatives of the Parties hereto.

13.7 Entire Agreement. This Agreement embodies the entire agreement between the Parties and supersedes any prior representations, understandings and agreements between the Parties regarding the subject matter hereof. There are no representations, understandings or agreements, oral or written, between the Parties regarding the subject matter hereof that are not fully expressed herein.

13.8 Severability. Any of the provisions of this Agreement which are determined to be invalid or unenforceable in any jurisdiction shall be ineffective to the extent of such invalidity or unenforceability in such jurisdiction, without rendering invalid or unenforceable the remaining provisions hereof and without affecting the validity or enforceability of any of the terms of this Agreement in any other jurisdiction.

13.9 Waiver. The waiver by either Party hereto of any right hereunder or the failure to perform or of a breach by the other Party shall not be deemed a waiver of any other right hereunder or of any other breach or failure by said other Party whether of a similar nature or otherwise.

13.10 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

13.11 No Third-Party Beneficiaries. None of the provisions of this Agreement shall be for the benefit of, or enforceable by, any Third Party. The agreements herein contained are made for the sole benefit of the Parties hereto and no other person or entity is intended to or shall have any rights or benefits hereunder, whether as a third-party beneficiary or otherwise.

[SIGNATURE PAGE FOLLOWS]

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IN WITNESS WHEREOF, the Parties have executed this Agreement effective as of the Effective Date.

NERVIANO MEDICAL SCIENCES

By: /s/ Dr. Luciano Baielli
Name: Dr. Luciano Baielli
Title: Amministratore Delegato

IGNYTA, INC.

By: /s/ Jonathan Lim
Name: Jonathan Lim
Title: President and CEO

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EXHIBIT 1.3

[***]

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

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EXHIBIT 1.27

[***]

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

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This document contains confidential information belonging to Nerviano Medical Sciences S.r.l.. Except as may be otherwise agreed to in writing, by accepting or reviewing these materials, you agree to hold such information in confidence and not to disclose it to others (except where required by applicable law), nor to use it for unauthorized purposes. In the event of actual or suspected breach of this obligation, Nerviano Medical Sciences S.r.l. should be promptly notified.

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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d)

of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): September 8, 2014

IGNYTA, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**001-36344**	**45-3174872**
(State of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

11095 Flintkote Avenue, Suite D

San Diego, California 92121

(Address of principal executive offices, including zip code)

Registrant s telephone number, including area code: (858) 255-5959

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

¨ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

¨ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

¨ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

¨ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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Item 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers

(c) On September 8, 2014, Ignyta appointed Robert Wild, Ph.D., as Ignyta s Chief Scientific Officer and Senior Vice President, Research, effective immediately. Prior to joining Ignyta, Dr. Wild, 43, was Chief Scientific Officer, Oncology Research, Drug Discovery at Eli Lilly & Company, a position he held from August 2010 to August 2014. Prior to Lilly, Dr. Wild held positions of increasing responsibility from January 2006 to July 2010 at OSI Pharmaceuticals, Inc., including Senior Director, Oncology Research, In Vivo Pharmacology, Molecular Imaging & Research DMPK. Before his tenure at OSI, Dr. Wild spent more than four years at Bristol-Myers Squibb, and he also previously worked at SUGEN, Inc. Dr. Wild holds both a Ph.D. in pharmacology and a B.S. in biochemistry from the University of Minnesota.

Dr. Wild s annual base salary will be $340,000. Dr. Wild will also be eligible to participate in cash or other bonus plans at the discretion and upon the approval of Ignyta s Board of Directors. Further, Dr. Wild will be eligible to receive grants of equity awards under Ignyta s 2014 Incentive Award Plan (the Ignyta Plan) or any other equity compensation plan the Board of Directors may approve and adopt in the future, at the discretion of the Board of Directors. As with Ignyta s other employees, Dr. Wild does not have a formal employment agreement with Ignyta, and will not have such an agreement unless and until the Board of Directors, or a committee thereof, and Dr. Wild approve the terms of any such agreement. As a result, the amount of Dr. Wild s annual base salary, cash or other bonus compensation, equity compensation or any other form of compensation he may receive may be modified at any time at the discretion of the Board of Directors.

Dr. Wild will also receive a signing bonus of $50,000 (the Signing Bonus), and Ignyta will reimburse Dr. Wild for up to $75,000 in expenses incurred in relocating to San Diego, California (Relocation Reimbursement). Both the Signing Bonus and the Relocation Reimbursement will be grossed up for applicable taxes and other withholdings. Should Dr. Wild voluntarily leave the company within twelve months of his employment start date, Dr. Wild will be responsible for reimbursing Ignyta a prorated portion of such amounts.

In connection with his appointment, Ignyta has granted to Dr. Wild a stock option award to purchase 200,000 shares of Ignyta s common stock under the Ignyta Plan at an exercise price equal to the closing price of Ignyta s common stock on the Nasdaq Capital Market on September 8, 2014. The option award agreement will be consistent with the standard option award agreement under the Ignyta Plan, and the options will vest on Ignyta s standard four-year vesting schedule, with 25% of the shares subject to the award vesting on the first anniversary of his commencement of employment and 1/36th of the remaining shares subject to the award vesting each monthly anniversary thereafter, subject to Dr. Wild s continued employment by Ignyta on each vesting date.

In addition, Dr. Wild will be eligible to participate in Ignyta s 2013 Severance and Change in Control Severance Plan (the Severance Plan) as a Tier 2 Covered Employee. A description of the terms and provisions of the Severance Plan as applied to a Tier 2 Covered Employee are set forth in Ignyta s Current Report on Form 8-K filed with the Securities and Exchange Commission on December 19, 2013, which description is incorporated herein by reference.

There are no family relationships between Dr. Wild and any of Ignyta s current or former directors or executive officers. Dr. Wild is not a party to any transaction that would require disclosure under Item 404(a) of Regulation S-K promulgated under the Securities Act of 1933.

The press release dated September 8, 2014 announcing the appointment of Dr. Wild is attached hereto as Exhibit 99.1. The information contained in Exhibit 99.1 of this Current Report on Form 8-K shall not be deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the Exchange Act), or incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific

reference in such a filing.

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Item 9.01. Financial Statements and Exhibits

(d) Exhibits.

Exhibit No.	Description
99.1	Press Release, dated September 8, 2014.

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SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: September 8, 2014

IGNYTA, INC.

By: /s/ Jonathan E. Lim, M.D.
Name: Jonathan E. Lim, M.D.
Title: President and Chief Executive Officer

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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d)

of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): September 30, 2014

IGNYTA, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**001-36344**	**45-3174872**
(State of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

11095 Flintkote Avenue, Suite D

San Diego, California 92121

(Address of principal executive offices, including zip code)

Registrant s telephone number, including area code: (858) 255-5959

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

¨ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

¨ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

¨ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

¨ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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Item 1.01 Entry into a Material Definitive Agreement.

The disclosure set forth under Item 2.03 of this Current Report on Form 8-K is incorporated into this Item 1.01 by reference.

Item 2.03 Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant

On September 30, 2014, Ignyta, Inc. (the Company) entered into a second amended and restated loan and security agreement (the New Loan Agreement) with Silicon Valley Bank (SVB). The New Loan Agreement amends, restates, supersedes and replaces in its entirety that certain amended and restated loan and security agreement dated as of December 31, 2013 (the Prior Loan Agreement), by and between the Company, its former wholly-owned subsidiary Ignyta Operating, Inc. and SVB.

Pursuant to the terms of the New Loan Agreement, SVB granted the Company a loan in the principal amount of $21,000,000, $11,050,000 of which was used to repay the Company s existing loan with SVB, and the Company has a conditional option to receive an additional $10,000,000 loan tranche. The second tranche of $10,000,000 may be drawn down by the Company at any time prior to September 30, 2015, provided that Ignyta has initiated the Phase IIa portion of the ongoing STARTRK-1 Phase I/IIa clinical study of its lead product candidate RXDX-101 and subject to other customary conditions for funding, such as no material adverse change occurring.

The Company will be required to pay interest on the borrowings under the New Loan Agreement at a fixed, per-annum rate of 8.56% on a monthly basis through October 31, 2015. Thereafter, the Company will be required to repay the principal plus interest in 30 equal monthly installments. The number of months of interest-only payments and the number of months over which the principal will be amortized will each be increased by six months if the second loan tranche has been drawn down or the Company has raised net proceeds of at least $50 million through the offering of its equity securities, in each case prior to October 31, 2015.

Upon the maturity date, the Company shall pay to SVB a final payment of 3% of the full principal amount of the loan funded. The Company may elect to prepay all amounts owed under either or both of the loan tranches prior to the maturity date therefor, provided that a prepayment fee is also paid, equal to 2% of the amount prepaid if the prepayment occurs prior to September 30, 2015, or 1% of amount prepaid if the prepayment occurs thereafter.

The Company paid SVB an upfront fee of $155,000.

Pursuant to the terms of the New Loan Agreement, the Company is bound by certain affirmative covenants setting forth actions that are required during the term of the New Loan Agreement, including, without limitation, certain information delivery requirements, obligations to maintain certain insurance, and certain notice requirements. Additionally, the Company is bound by certain negative covenants setting forth actions that are not permitted to be taken during the term of the New Loan Agreement without SVB s consent, including, without limitation, incurring certain additional indebtedness, entering into certain mergers, acquisitions or other business combination transactions, or incurring any non-permitted lien or other encumbrance on the Company s assets. Upon the occurrence of an event of default under the New Loan Agreement (subject to cure periods for certain events of default), all amounts owed by the Company thereunder shall begin to bear interest at a rate that is 3% higher than the rate that is otherwise applicable (unless SVB chooses otherwise) and may be declared immediately due and payable by SVB. Events of default under the New Loan Agreement include, among other things, the following: the occurrence of certain bankruptcy events; the failure to make payments under the New Loan Agreement when due; the occurrence of a material adverse change in the business, operations or financial condition of the Company; the rendering of certain types of fines or judgments

against the Company; any breach by the Company of any covenant (subject to cure for certain covenants only) made in the New Loan Agreement; and the failure of any representation or warranty made by the Company in connection with the New Loan Agreement to be correct in all material respects when made.

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The Company has granted SVB a security interest in substantially all of its personal property, rights and assets, other than intellectual property, to secure the payment of all amounts owed to SVB under the New Loan Agreement. The Company has also agreed not to encumber any of its intellectual property without SVB s prior written consent.

In connection with entering into the New Loan Agreement, the Company issued to SVB and its affiliate warrants to purchase an aggregate of 37,849 shares of the Company s common stock (the Lender Warrants). The warrants are exercisable immediately, have a per-share exercise price of $7.518 and have a term of seven years. If the Company draws down the second loan tranche, at that time it will issue to SVB and its affiliate additional warrants which will be exercisable immediately and have a term of seven years. Those warrants will be exercisable for an aggregate number of shares equal to $135,500 (which is 1.355% of the principal amount of the second loan tranche) divided by the lower of (a) the trailing 10-day average of the closing price of the Company s common stock on the Nasdaq Capital Market prior to the funding date of the second loan tranche and (b) the closing price of the Company s common stock on the Nasdaq Capital Market on the funding date of the second loan tranche, at an exercise price equal to such divisor.

The foregoing is only a brief description of the New Loan Agreement and the Lender Warrants, does not purport to be a complete description of the rights and obligations of the parties thereunder and is qualified in its entirety by reference to the Lender Warrants and the New Loan Agreement, which are filed as Exhibits 4.1, 4.2 and 10.1 to this Current Report on Form 8-K and are incorporated herein by reference.

Item 3.02. Unregistered Sales of Equity Securities

The Company relied on the exemption from registration contained in Section 4(2) of the Securities Act of 1933, as amended (the Securities Act), and Rule 506 of Regulation D, in connection with the issuance of the Lender Warrants in connection with the New Loan Agreement. The Lender Warrants and the shares of common stock issuable under the Lender Warrants, have not been registered under the Securities Act, or state securities laws, and may not be offered or sold in the United States without being registered with the SEC or through an applicable exemption from SEC registration requirements.

The other information called for by this item is contained in Item 1.01, which is incorporated herein by reference.

Item 9.01. Financial Statements and Exhibits

(d) Exhibits.

Exhibit No.	Description
4.1	Warrant dated September 30, 2014, issued to Silicon Valley Bank.
4.2	Warrant dated September 30, 2014, issued to Life Science Loans, LLC.
10.1	Second Amended and Restated Loan and Security Agreement between Ignyta, Inc. and Silicon Valley Bank dated September 30, 2014.

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SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: October 1, 2014

IGNYTA, INC.

By: /s/ Jonathan E. Lim, M.D.
Name: Jonathan E. Lim, M.D.
Title: President and Chief Executive Officer

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EXHIBIT INDEX

Exhibit No.	Description
4.1	Warrant dated September 30, 2014, issued to Silicon Valley Bank.
4.2	Warrant dated September 30, 2014, issued to Life Science Loans, LLC.
10.1	Second Amended and Restated Loan and Security Agreement between Ignyta, Inc. and Silicon Valley Bank dated September 30, 2014.

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Exhibit 4.1

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE **ACT**), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN SECTIONS 5.3 AND 5.4 BELOW, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE COMPANY, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

WARRANT TO PURCHASE COMMON STOCK

Company: Ignyta, Inc., a Delaware corporation

Number of Shares of Common Stock: 18,925

Warrant Price: $7.518

Issue Date: September 30, 2014

Expiration Date: September 30, 2021 **See also Section 5.1(b).**

Credit Facility: This Warrant to Purchase Common Stock (**Warrant**) is issued in connection with that certain Second Amended and Restated Loan and Security Agreement dated as of September 30, 2014 between Silicon Valley Bank and the Company (the **Loan Agreement**).

THIS WARRANT CERTIFIES THAT, for good and valuable consideration, SILICON VALLEY BANK (together with any successor or permitted assignee or transferee of this Warrant or of any shares issued upon exercise hereof, **Holder**) is entitled to purchase the number of fully paid and non-assessable shares (the **Shares**) of the above-stated common stock (the **Common Stock**) of the above-named company (the **Company**) at the above-stated Warrant Price, all as set forth above and as adjusted pursuant to Section 2 of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant. Reference is made to Section 5.4 of this Warrant whereby Silicon Valley Bank shall transfer this Warrant to its parent company, SVB Financial Group.

SECTION 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time exercise this Warrant, in whole or in part, by delivering to the Company the original of this Warrant together with a duly executed Notice of Exercise in substantially the form attached hereto as Appendix 1 and, unless Holder is exercising this Warrant pursuant to a cashless exercise set forth in Section 1.2, a check, wire transfer of same-day funds (to an account designated by the Company), or other form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased.

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1.2 Cashless Exercise. On any exercise of this Warrant, in lieu of payment of the aggregate Warrant Price in the manner as specified in Section 1.1 above, but otherwise in accordance with the requirements of Section 1.1, Holder may elect to receive Shares equal to the value of this Warrant, or portion hereof as to which this Warrant is being exercised. Thereupon, the Company shall issue to the Holder such number of fully paid and non-assessable Shares as are computed using the following formula:

$$X = Y(A-B)/A$$

where:

X = the number of Shares to be issued to the Holder;

Y = the number of Shares with respect to which this Warrant is being exercised (inclusive of the Shares surrendered to the Company in payment of the aggregate Warrant Price);

A = the Fair Market Value (as determined pursuant to Section 1.3 below) of one Share; and

B = the Warrant Price.

1.3 Fair Market Value. If the Company s Common Stock is then traded or quoted on a nationally recognized securities exchange, inter-dealer quotation system or over-the-counter market (a **Trading Market**), the fair market value of a Share shall be the closing price or last sale price of a share of Common Stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company. If the Company s Common Stock is not traded in a Trading Market, the Board of Directors of the Company shall determine the fair market value of a Share in its reasonable good faith judgment.

1.4 Delivery of Certificate and New Warrant. Within a reasonable time after Holder exercises this Warrant in the manner set forth in Section 1.1 or 1.2 above, the Company shall deliver to Holder a certificate representing the Shares issued to Holder upon such exercise and, if this Warrant has not been fully exercised and has not expired, a new warrant of like tenor representing the Shares not so acquired.

1.5 Replacement of Warrant. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form, substance and amount to the Company or, in the case of mutilation, on surrender of this Warrant to the Company for cancellation, the Company shall, within a reasonable time, execute and deliver to Holder, in lieu of this Warrant, a new warrant of like tenor and amount.

1.6 Treatment of Warrant Upon Acquisition of Company.

(a) Acquisition. For the purpose of this Warrant, **Acquisition** means any transaction or series of related transactions involving: (i) the sale, exclusive license, or other disposition of all or substantially all of the assets of the Company (ii) any merger or consolidation of the Company into or with another person or entity (other than a merger or consolidation effected exclusively to change the Company s domicile), or any other corporate reorganization, in each case which the stockholders of the Company in their capacity as such immediately prior to such merger, consolidation or reorganization, own less than a majority of the Company s (or the surviving or successor entity s) outstanding voting power immediately after such merger, consolidation or reorganization; or (iii) any sale or other transfer by the stockholders of the Company of shares representing at least a majority of the Company s then-total outstanding combined voting power in one or a series of related transactions.

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(b) Treatment of Warrant at Acquisition. In the event of an Acquisition in which the consideration to be received by the Company s stockholders consists solely of cash, solely of Marketable Securities or a combination of cash and Marketable Securities (a **Cash/Public Acquisition**), and the fair market value of one Share as determined in accordance with Section 1.3 above would be greater than the Warrant Price in effect on such date immediately prior to such Cash/Public Acquisition, and Holder has not exercised this Warrant pursuant to Section 1.1 or Section 1.2 above as to all Shares that have not been previously exercised, then this Warrant shall automatically be deemed to be Cashless Exercised pursuant to Section 1.2 above as to all Shares effective immediately prior to and contingent upon the consummation of a Cash/Public Acquisition. In connection with such Cashless Exercise, Holder shall be deemed to have restated each of the representations and warranties in Section 4 of the Warrant as the date thereof and the Company shall promptly notify the Holder of the number of Shares (or such other securities) issued upon exercise. In the event of a Cash/Public Acquisition where the fair market value of one Share as determined in accordance with Section 1.3 above would be less than the Warrant Price in effect immediately prior to such Cash/Public Acquisition, then this Warrant will expire immediately prior to the consummation of such Cash/Public Acquisition.

(c) Upon the closing of any Acquisition other than a Cash/Public Acquisition defined above, the acquiring, surviving or successor entity shall assume the obligations of this Warrant, and this Warrant shall thereafter be exercisable for the same securities and/or other property as would have been paid for the Shares issuable upon exercise of the unexercised portion of this Warrant as if such Shares were outstanding on and as of the closing of such Acquisition, subject to further adjustment from time to time in accordance with the provisions of this Warrant.

(d) As used in this Warrant, **Marketable Securities** means securities meeting all of the following requirements: (i) the issuer thereof is then subject to the reporting requirements of Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the **Exchange Act**), and is then current in its filing of all required reports and other information under the Act and the Exchange Act; (ii) the class and series of shares or other security of the issuer that would be received by Holder in connection with the Acquisition were Holder to exercise this Warrant on or prior to the closing thereof is then traded in a Trading Market, and (iii) following the closing of such Acquisition, Holder would not be restricted from publicly re-selling all of the issuer s shares and/or other securities that would be received by Holder in such Acquisition to the same extent had Holder exercised or converted this Warrant in full on or prior to the closing of such Acquisition, except to the extent that any such restriction (x) arises solely under federal or state securities laws, rules or regulations, and (y) does not extend beyond six (6) months from the closing of such Acquisition.

SECTION 2. ADJUSTMENTS TO THE SHARES AND WARRANT PRICE.

2.1 Stock Dividends, Splits, Etc. If the Company declares or pays a dividend or distribution on the outstanding shares of the Common Stock payable in securities or property (other than cash), then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without additional cost to Holder, the total number and kind of securities and property which Holder would have received had Holder owned the Shares of record as of the date the dividend or distribution occurred. If the Company subdivides the outstanding shares of the Common Stock by reclassification or otherwise into a greater number of shares, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding shares of the Common Stock are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any event whereby all of the outstanding shares of the Common Stock are reclassified, exchanged, combined, substituted, or replaced for, into, with or by Company securities of a different class and/or series, then from and after the consummation of such event, this Warrant will be exercisable for the number, class and series of Company securities that Holder would have received had the Shares been outstanding on and as of the consummation of such event, and subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant. The provisions of this Section 2.2 shall similarly apply to successive reclassifications, exchanges, combinations substitutions, replacements or other similar events.

2.3 Intentionally Omitted.

2.4 Intentionally Omitted.

2.5 No Fractional Share. No fractional Share shall be issuable upon exercise of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional Share interest arises upon any exercise of the Warrant, the Company shall eliminate such fractional Share interest by paying Holder in cash the amount computed by multiplying the fractional interest by (i) the fair market value (as determined in accordance with Section 1.3 above) of a full Share, less (ii) the then-effective Warrant Price.

2.6 Notice/Certificate as to Adjustments. Upon each adjustment of the Warrant Price, Common Stock and/or number of Shares, the Company, at the Company s expense, shall notify Holder in writing within a reasonable time setting forth the adjustments to the Warrant Price, class and/or number of Shares and facts upon which such adjustment is based. The Company shall, upon written request from Holder, furnish Holder with a certificate of its Chief Financial Officer, including computations of such adjustment and the Warrant Price, class and number of Shares in effect upon the date of such adjustment.

SECTION 3. REPRESENTATIONS AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants to, and agrees with, the Holder as follows: All Shares which may be issued upon the exercise of this Warrant, shall, upon issuance, be duly authorized, validly issued, fully paid and non-assessable, and free of any liens and encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws. The Company covenants that it shall at all times cause to be reserved and kept available out of its authorized and unissued capital stock such number of securities as will be sufficient to permit the exercise in full of this Warrant.

3.2 Notice of Certain Events. If the Company proposes at any time to:

(a) declare any dividend or distribution upon the outstanding shares of the Company s stock, whether in cash, property, stock, or other securities and whether or not a regular cash dividend;

(b) offer for subscription or sale pro rata to the holders of the outstanding shares any additional shares of any class or series of the Company s stock (other than pursuant to contractual pre-emptive rights);

(c) effect any reclassification, exchange, combination, substitution, reorganization or recapitalization of the outstanding shares of the Common Stock; or

(d) effect an Acquisition or to liquidate, dissolve or wind up.

then, in connection with each such event, the Company shall give Holder notice thereof at the same time and in the same manner as the Company notifies the holders of the outstanding shares of the Class thereof.

Company will also provide information requested by Holder that is reasonably necessary to enable Holder to comply with Holder s accounting or reporting requirements.

SECTION 4. REPRESENTATIONS, WARRANTIES OF THE HOLDER.

The Holder represents and warrants to the Company as follows:

4.1 Purchase for Own Account. This Warrant and the Shares to be acquired upon exercise of this Warrant by Holder are being acquired for investment for Holder s account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act. Holder also represents that it has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder is aware of the Company s business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of such Holder s investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an accredited investor within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder s investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144 promulgated under the Act.

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4.6 No Voting Rights. Holder, as a Holder of this Warrant, will not have any voting rights until the exercise of this Warrant.

SECTION 5. MISCELLANEOUS.

5.1 Term and Automatic Conversion Upon Expiration.

(a) Term. Subject to the provisions of Section 1.6 above, this Warrant is exercisable in whole or in part at any time and from time to time on or before 6:00 PM, Pacific time, on the Expiration Date and shall be void thereafter.

(b) Automatic Cashless Exercise upon Expiration. In the event that, upon the Expiration Date, the fair market value of one Share (or other security issuable upon the exercise hereof) as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed on and as of such date to be exercised pursuant to Section 1.2 above as to all Shares (or such other securities) for which it shall not previously have been exercised, and the Company shall, within a reasonable time, deliver a certificate representing the Shares (or such other securities) issued upon such exercise to Holder.

5.2 Legends. The Shares (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) shall be imprinted with a legend in substantially the following form:

THE SHARES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE ACT), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN THAT CERTAIN WARRANT TO PURCHASE COMMON STOCK ISSUED BY THE ISSUER TO SILICON VALLEY BANK DATED SEPTEMBER 30, 2014, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issuable upon exercise of this Warrant (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) may not be transferred or assigned in whole or in part except in compliance with applicable federal and state securities laws by the transferor and the transferee (including, without limitation, the delivery of investment representation letters and legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). The Company shall not require Holder to provide an opinion of counsel if the transfer is to SVB Financial Group (Silicon Valley Bank s parent company) or any other affiliate of Holder, provided that any such transferee is an accredited investor as defined in Regulation D promulgated under the Act. Additionally, the Company shall also not require an opinion of counsel if there is no material question as to the availability of Rule 144 promulgated under the Act.

5.4 Transfer Procedure. After receipt by Silicon Valley Bank of the executed Warrant, Silicon Valley Bank will transfer all of this Warrant to its parent company, SVB Financial Group. By its acceptance of this Warrant, SVB Financial Group hereby makes to the Company each of the representations and warranties set forth in Section 4 hereof and agrees to be bound by all of the terms and conditions of this Warrant as if the original Holder hereof. Subject to the provisions of Section 5.3 and upon providing the Company with written notice, SVB Financial Group and any subsequent Holder may transfer all or part of this Warrant or the Shares issuable upon exercise of this Warrant (or the securities issuable directly or indirectly, upon conversion of the Shares, if any) to any transferee, provided, however, in connection with any such transfer, SVB Financial Group or any subsequent Holder will give the Company notice of the portion of the Warrant being transferred with the name, address and taxpayer identification number of the transferee and Holder will surrender this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable); and provided further, that any subsequent transferee other than SVB Financial Group shall agree in writing with the Company to be bound by all of the terms and conditions of this Warrant.

5.5 Notices. All notices and other communications hereunder from the Company to the Holder, or vice versa, shall be deemed delivered and effective (i) when given personally, (ii) on the third (3rd) Business Day after being mailed by first-class registered or certified mail, postage prepaid, (iii) upon actual receipt if given by facsimile or electronic mail and such receipt is confirmed in writing by the recipient, or (iv) on the first Business Day following delivery to a reliable overnight courier service, courier fee prepaid, in any case at such address as may have been furnished to the Company or Holder, as the case may be, in writing by the Company or such Holder from time to time in accordance with the provisions of this Section 5.5. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

SVB Financial Group

Attn: Treasury Department

3003 Tasman Drive, HC 215

Santa Clara, CA 95054

Telephone: (408) 654-7400

Facsimile: (408) 988-8317

Email address: derivatives@svb.com

Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

Ignyta, Inc.

Attn: Chief Financial Officer

11095 Flintkote Avenue, Suite D

San Diego, CA 92121

Telephone: (858) 255-5959

Facsimile: (858) 255-5960

Email: jc@ignyta.com

With a copy (which shall not constitute notice) to:

Latham & Watkins, LP

Attn: Cheston Larson

12670 High Bluff Drive

San Diego, CA 92130

Telephone: (858) 523-5435

Facsimile: (858) 523-5450

Email: cheston.larson@lw.com

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated (either generally or in a particular instance and either retroactively or prospectively) only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Attorney s Fees. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys fees.

5.8 Counterparts; Facsimile/Electronic Signatures. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement. Any signature page delivered electronically or by facsimile shall be binding to the same extent as an original signature page with regards to any agreement subject to the terms hereof or any amendment thereto.

5.9 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of California, without giving effect to its principles regarding conflicts of law.

5.10 Headings. The headings in this Warrant are for purposes of reference only and shall not limit or otherwise affect the meaning of any provision of this Warrant.

5.11 Business Days. **Business Day** is any day that is not a Saturday, Sunday or a day on which Silicon Valley Bank is closed.

[Remainder of page left blank intentionally]

[Signature page follows]

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IN WITNESS WHEREOF, the parties have caused this Warrant to Purchase Common Stock to be executed by their duly authorized representatives effective as of the Issue Date written above.

COMPANY

IGNYTA, INC.

By: /s/ Jacob Chacko
Name: Jacob Chacko
(Print)
Title: Chief Financial Officer

HOLDER

SILICON VALLEY BANK

By: /s/ R. Michael White
Name: R. Michael White
(Print)
Title: Managing Director

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APPENDIX 1

NOTICE OF EXERCISE

1. The undersigned Holder hereby exercises its right purchase _____ shares of the Common Stock of IGNYTA, INC. (the **Company**) in accordance with the attached Warrant To Purchase Common Stock, and tenders payment of the aggregate Warrant Price for such shares as follows:

¨ check in the amount of $_____ payable to order of the Company enclosed herewith

¨ Wire transfer of immediately available funds to the Company s account

¨ Cashless Exercise pursuant to Section 1.2 of the Warrant

¨ Other [Describe] _____

2. Please issue a certificate or certificates representing the Shares in the name specified below:

Holder s Name

(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Section 4 of the Warrant to Purchase Common Stock as of the date hereof.

HOLDER:

By:

Name:

Title:

(Date):

Appendix 1

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Exhibit 4.2

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE **ACT**), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN SECTIONS 5.3 AND 5.4 BELOW, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE COMPANY, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

WARRANT TO PURCHASE COMMON STOCK

Company: Ignyta, Inc., a Delaware corporation

Number of Shares of Common Stock: 18,924

Warrant Price: $7.518

Issue Date: September 30, 2014

Expiration Date: September 30, 2021 **See also Section 5.1(b).**

Credit Facility: This Warrant to Purchase Common Stock (**Warrant**) is issued in connection with that certain Second Amended and Restated Loan and Security Agreement dated as of September 30, 2014 between Silicon Valley Bank and the Company (the **Loan Agreement**).

THIS WARRANT CERTIFIES THAT, for good and valuable consideration, LIFE SCIENCE LOANS, LLC (together with any successor or permitted assignee or transferee of this Warrant or of any shares issued upon exercise hereof, **Holder**) is entitled to purchase the number of fully paid and non-assessable shares (the **Shares**) of the above-stated common stock (the **Common Stock**) of the above-named company (the **Company**) at the above-stated Warrant Price, all as set forth above and as adjusted pursuant to Section 2 of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant.

SECTION 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time exercise this Warrant, in whole or in part, by delivering to the Company the original of this Warrant together with a duly executed Notice of Exercise in substantially the form attached hereto as Appendix 1 and, unless Holder is exercising this Warrant pursuant to a cashless exercise set forth in Section 1.2, a check, wire transfer of same-day funds (to an account designated by the Company), or other form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased.

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1.2 Cashless Exercise. On any exercise of this Warrant, in lieu of payment of the aggregate Warrant Price in the manner as specified in Section 1.1 above, but otherwise in accordance with the requirements of Section 1.1, Holder may elect to receive Shares equal to the value of this Warrant, or portion hereof as to which this Warrant is being exercised. Thereupon, the Company shall issue to the Holder such number of fully paid and non-assessable Shares as are computed using the following formula:

X = Y(A-B)/A

where:

X = the number of Shares to be issued to the Holder;

Y = the number of Shares with respect to which this Warrant is being exercised (inclusive of the Shares surrendered to the Company in payment of the aggregate Warrant Price);

A = the Fair Market Value (as determined pursuant to Section 1.3 below) of one Share; and

B = the Warrant Price.

1.3 Fair Market Value. If the Company s Common Stock is then traded or quoted on a nationally recognized securities exchange, inter-dealer quotation system or over-the-counter market (a **Trading Market**), the fair market value of a Share shall be the closing price or last sale price of a share of Common Stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company. If the Company s Common Stock is not traded in a Trading Market, the Board of Directors of the Company shall determine the fair market value of a Share in its reasonable good faith judgment.

1.4 Delivery of Certificate and New Warrant. Within a reasonable time after Holder exercises this Warrant in the manner set forth in Section 1.1 or 1.2 above, the Company shall deliver to Holder a certificate representing the Shares issued to Holder upon such exercise and, if this Warrant has not been fully exercised and has not expired, a new warrant of like tenor representing the Shares not so acquired.

1.5 Replacement of Warrant. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form, substance and amount to the Company or, in the case of mutilation, on surrender of this Warrant to the Company for cancellation, the Company shall, within a reasonable time, execute and deliver to Holder, in lieu of this Warrant, a new warrant of like tenor and amount.

1.6 Treatment of Warrant Upon Acquisition of Company.

(a) Acquisition. For the purpose of this Warrant, **Acquisition** means any transaction or series of related transactions involving: (i) the sale, exclusive license, or other disposition of all or substantially all of the assets of the Company (ii) any merger or consolidation of the Company into or with another person or entity (other than a merger or consolidation effected exclusively to change the Company s domicile), or any other corporate reorganization, in each case which the stockholders of the Company in their capacity as such immediately prior to such merger, consolidation or reorganization, own less than a majority of the Company s (or the surviving or successor entity s) outstanding voting power immediately after such merger, consolidation or reorganization; or (iii) any sale or other transfer by the stockholders of the Company of shares representing at least a majority of the Company s then-total outstanding combined voting power in one or a series of related transactions.

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(b) Treatment of Warrant at Acquisition. In the event of an Acquisition in which the consideration to be received by the Company s stockholders consists solely of cash, solely of Marketable Securities or a combination of cash and Marketable Securities (a **Cash/Public Acquisition**), and the fair market value of one Share as determined in accordance with Section 1.3 above would be greater than the Warrant Price in effect on such date immediately prior to such Cash/Public Acquisition, and Holder has not exercised this Warrant pursuant to Section 1.1 or Section 1.2 above as to all Shares that have not been previously exercised, then this Warrant shall automatically be deemed to be Cashless Exercised pursuant to Section 1.2 above as to all Shares effective immediately prior to and contingent upon the consummation of a Cash/Public Acquisition. In connection with such Cashless Exercise, Holder shall be deemed to have restated each of the representations and warranties in Section 4 of the Warrant as the date thereof and the Company shall promptly notify the Holder of the number of Shares (or such other securities) issued upon exercise. In the event of a Cash/Public Acquisition where the fair market value of one Share as determined in accordance with Section 1.3 above would be less than the Warrant Price in effect immediately prior to such Cash/Public Acquisition, then this Warrant will expire immediately prior to the consummation of such Cash/Public Acquisition.

(c) Upon the closing of any Acquisition other than a Cash/Public Acquisition defined above, the acquiring, surviving or successor entity shall assume the obligations of this Warrant, and this Warrant shall thereafter be exercisable for the same securities and/or other property as would have been paid for the Shares issuable upon exercise of the unexercised portion of this Warrant as if such Shares were outstanding on and as of the closing of such Acquisition, subject to further adjustment from time to time in accordance with the provisions of this Warrant.

(d) As used in this Warrant, **Marketable Securities** means securities meeting all of the following requirements: (i) the issuer thereof is then subject to the reporting requirements of Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the **Exchange Act**), and is then current in its filing of all required reports and other information under the Act and the Exchange Act; (ii) the class and series of shares or other security of the issuer that would be received by Holder in connection with the Acquisition were Holder to exercise this Warrant on or prior to the closing thereof is then traded in a Trading Market, and (iii) following the closing of such Acquisition, Holder would not be restricted from publicly re-selling all of the issuer s shares and/or other securities that would be received by Holder in such Acquisition to the same extent had Holder exercised or converted this Warrant in full on or prior to the closing of such Acquisition, except to the extent that any such restriction (x) arises solely under federal or state securities laws, rules or regulations, and (y) does not extend beyond six (6) months from the closing of such Acquisition.

SECTION 2. ADJUSTMENTS TO THE SHARES AND WARRANT PRICE.

2.1 Stock Dividends, Splits, Etc. If the Company declares or pays a dividend or distribution on the outstanding shares of the Common Stock payable in securities or property (other than cash), then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without additional cost to Holder, the total number and kind of securities and property which Holder would have received had Holder owned the Shares of record as of the date the dividend or distribution occurred. If the Company subdivides the outstanding shares of the Common Stock by reclassification or otherwise into a greater number of shares, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding shares of the Common Stock are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any event whereby all of the outstanding shares of the Common Stock are reclassified, exchanged, combined, substituted, or replaced for, into, with or by Company securities of a different class and/or series, then from and after the consummation of such event, this Warrant will be exercisable for the number, class and series of Company securities that Holder would have received had the Shares been outstanding on and as of the consummation of such event, and subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant. The provisions of this Section 2.2 shall similarly apply to successive reclassifications, exchanges, combinations substitutions, replacements or other similar events.

2.3 Intentionally Omitted.

2.4 Intentionally Omitted.

2.5 No Fractional Share. No fractional Share shall be issuable upon exercise of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional Share interest arises upon any exercise of the Warrant, the Company shall eliminate such fractional Share interest by paying Holder in cash the amount computed by multiplying the fractional interest by (i) the fair market value (as determined in accordance with Section 1.3 above) of a full Share, less (ii) the then-effective Warrant Price.

2.6 Notice/Certificate as to Adjustments. Upon each adjustment of the Warrant Price, Common Stock and/or number of Shares, the Company, at the Company s expense, shall notify Holder in writing within a reasonable time setting forth the adjustments to the Warrant Price, class and/or number of Shares and facts upon which such adjustment is based. The Company shall, upon written request from Holder, furnish Holder with a certificate of its Chief Financial Officer, including computations of such adjustment and the Warrant Price, class and number of Shares in effect upon the date of such adjustment.

SECTION 3. REPRESENTATIONS AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants to, and agrees with, the Holder as follows: All Shares which may be issued upon the exercise of this Warrant, shall, upon issuance, be duly authorized, validly issued, fully paid and non-assessable, and free of any liens and encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws. The Company covenants that it shall at all times cause to be reserved and kept available out of its authorized and unissued capital stock such number of securities as will be sufficient to permit the exercise in full of this Warrant.

3.2 Notice of Certain Events. If the Company proposes at any time to:

(a) declare any dividend or distribution upon the outstanding shares of the Company s stock, whether in cash, property, stock, or other securities and whether or not a regular cash dividend;

(b) offer for subscription or sale pro rata to the holders of the outstanding shares any additional shares of any class or series of the Company s stock (other than pursuant to contractual pre-emptive rights);

(c) effect any reclassification, exchange, combination, substitution, reorganization or recapitalization of the outstanding shares of the Common Stock; or

(d) effect an Acquisition or to liquidate, dissolve or wind up.

then, in connection with each such event, the Company shall give Holder notice thereof at the same time and in the same manner as the Company notifies the holders of the outstanding shares of the Class thereof.

Company will also provide information requested by Holder that is reasonably necessary to enable Holder to comply with Holder s accounting or reporting requirements.

SECTION 4. REPRESENTATIONS, WARRANTIES OF THE HOLDER.

The Holder represents and warrants to the Company as follows:

4.1 Purchase for Own Account. This Warrant and the Shares to be acquired upon exercise of this Warrant by Holder are being acquired for investment for Holder s account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act. Holder also represents that it has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder is aware of the Company s business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of such Holder s investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an accredited investor within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder s investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144 promulgated under the Act.

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4.6 No Voting Rights. Holder, as a Holder of this Warrant, will not have any voting rights until the exercise of this Warrant.

SECTION 5. MISCELLANEOUS.

5.1 Term and Automatic Conversion Upon Expiration.

(a) Term. Subject to the provisions of Section 1.6 above, this Warrant is exercisable in whole or in part at any time and from time to time on or before 6:00 PM, Pacific time, on the Expiration Date and shall be void thereafter.

(b) Automatic Cashless Exercise upon Expiration. In the event that, upon the Expiration Date, the fair market value of one Share (or other security issuable upon the exercise hereof) as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed on and as of such date to be exercised pursuant to Section 1.2 above as to all Shares (or such other securities) for which it shall not previously have been exercised, and the Company shall, within a reasonable time, deliver a certificate representing the Shares (or such other securities) issued upon such exercise to Holder.

5.2 Legends. The Shares (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) shall be imprinted with a legend in substantially the following form:

THE SHARES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE ACT), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN THAT CERTAIN WARRANT TO PURCHASE COMMON STOCK ISSUED BY THE ISSUER TO LIFE SCIENCE LOANS, LLC DATED SEPTEMBER 30, 2014, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issuable upon exercise of this Warrant (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) may not be transferred or assigned in whole or in part except in compliance with applicable federal and state securities laws by the transferor and the transferee (including, without limitation, the delivery of investment representation letters and legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). Additionally, the Company shall also not require an opinion of counsel if there is no material question as to the availability of Rule 144 promulgated under the Act.

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5.4 Transfer Procedure. Subject to the provisions of Section 5.3 and upon providing the Company with written notice, Life Science Loans, LLC and any subsequent Holder may transfer all or part of this Warrant or the Shares issuable upon exercise of this Warrant (or the securities issuable directly or indirectly, upon conversion of the Shares, if any) to any transferee, provided, however, in connection with any such transfer, Life Science Loans, LLC or any subsequent Holder will give the Company notice of the portion of the Warrant being transferred with the name, address and taxpayer identification number of the transferee and Holder will surrender this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable); and provided further, that any subsequent transferee other than SVB Financial Group shall agree in writing with the Company to be bound by all of the terms and conditions of this Warrant.

5.5 Notices. All notices and other communications hereunder from the Company to the Holder, or vice versa, shall be deemed delivered and effective (i) when given personally, (ii) on the third (3rd) Business Day after being mailed by first-class registered or certified mail, postage prepaid, (iii) upon actual receipt if given by facsimile or electronic mail and such receipt is confirmed in writing by the recipient, or (iv) on the first Business Day following delivery to a reliable overnight courier service, courier fee prepaid, in any case at such address as may have been furnished to the Company or Holder, as the case may be, in writing by the Company or such Holder from time to time in accordance with the provisions of this Section 5.5. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

Life Science Loans, LLC

c/o Loan Manager, LLC

Attn: Erik J. Anderson

3720 Carillon Point

Kirkland, WA 98033

Telephone: 425-576-9850

Email address: eanderson@westrivermgmt.com

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Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

Ignyta, Inc.

Attn: Chief Financial Officer

11095 Flintkote Avenue, Suite D

San Diego, CA 92121

Telephone: (858) 255-5959

Facsimile: (858) 255-5960

Email: jc@ignyta.com

With a copy (which shall not constitute notice) to:

Latham & Watkins, LP

Attn: Cheston Larson

12670 High Bluff Drive

San Diego, CA 92130

Telephone: (858) 523-5435

Facsimile: (858) 523-5450

Email: cheston.larson@lw.com

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated (either generally or in a particular instance and either retroactively or prospectively) only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Attorney s Fees. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys fees.

5.8 Counterparts; Facsimile/Electronic Signatures. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement. Any signature page delivered electronically or by facsimile shall be binding to the same extent as an original signature page with regards to any agreement subject to the terms hereof or any amendment thereto.

5.9 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of California, without giving effect to its principles regarding conflicts of law.

5.10 Headings. The headings in this Warrant are for purposes of reference only and shall not limit or otherwise affect the meaning of any provision of this Warrant.

5.11 Business Days. **Business Day** is any day that is not a Saturday, Sunday or a day on which Silicon Valley Bank is closed.

[Remainder of page left blank intentionally]

[Signature page follows]

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IN WITNESS WHEREOF, the parties have caused this Warrant to Purchase Common Stock to be executed by their duly authorized representatives effective as of the Issue Date written above.

COMPANY

IGNYTA, INC.

By: /s/ Jacob Chacko

Name: Jacob Chacko
(Print)

Title: Chief Financial Officer

HOLDER

LIFE SCIENCE LOANS, LLC

By: /s/ Erik J. Anderson

Name: Erik J. Anderson
(Print)

Title: Manager

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APPENDIX 1

NOTICE OF EXERCISE

1. The undersigned Holder hereby exercises its right purchase shares of the Common Stock of IGNYTA, INC. (the **Company**) in accordance with the attached Warrant To Purchase Common Stock, and tenders payment of the aggregate Warrant Price for such shares as follows:

[ ] check in the amount of $ payable to order of the Company enclosed herewith

[ ] Wire transfer of immediately available funds to the Company s account

[ ] Cashless Exercise pursuant to Section 1.2 of the Warrant

[ ] Other [Describe] _____

2. Please issue a certificate or certificates representing the Shares in the name specified below:

Holder s Name

(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Section 4 of the Warrant to Purchase Common Stock as of the date hereof.

HOLDER:

By:

Name:

Title:

(Date):

Appendix 1

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Exhibit 10.1

SECOND AMENDED AND RESTATED LOAN AND SECURITY AGREEMENT

THIS SECOND AMENDED AND RESTATED LOAN AND SECURITY AGREEMENT (this **Agreement**) dated as of September 30, 2014 (the **Effective Date**) between **SILICON VALLEY BANK**, a California corporation (**Bank**), and **IGNYTA, INC.**, a Delaware corporation (**Borrower**), provides the terms on which Bank shall lend to Borrower and Borrower shall repay Bank. The parties agree as follows:

Recitals

A. Bank and Borrower have entered into that certain Amended and Restated Loan and Security Agreement dated as of December 31, 2013 (as amended from time to time, the **Prior Loan Agreement**).

B. Borrower has requested, and Bank has agreed, to replace, amend and restate the Prior Loan Agreement in its entirety. Bank and Borrower hereby agree that the Prior Loan Agreement is amended and restated in its entirety as follows:

1 ACCOUNTING AND OTHER TERMS

Accounting terms not defined in this Agreement shall be construed following GAAP. Calculations and determinations must be made following GAAP. Capitalized terms not otherwise defined in this Agreement shall have the meanings set forth in Section 13. All other terms contained in this Agreement, unless otherwise indicated, shall have the meanings provided by the Code to the extent such terms are defined therein.

2 LOAN AND TERMS OF PAYMENT

2.1 Promise to Pay. Borrower hereby unconditionally promises to pay Bank the outstanding principal amount of all Credit Extensions and accrued and unpaid interest thereon as and when due in accordance with this Agreement.

2.1.1 Term Loan.

(a) Availability. Bank shall make one (1) term loan available to Borrower in an amount equal to Twenty One Million Dollars ($21,000,000) (the **Term A Loan**) on the Effective Date subject to the satisfaction of the terms and conditions of this Agreement. A portion of the Term A Loan shall be used to repay Borrower s existing Indebtedness to Bank. During the Term B Draw Period, Bank shall make an additional term loan available to Borrower in an amount equal to Ten Million Dollars ($10,000,000) (the **Term B Loan** , and together with the Term A Loan, each a **Term Loan** and collectively, the **Term Loans**).

(b) Repayment. Borrower shall repay the Term Loan (i) if the Interest Only Extension Event has not occurred, in thirty (30) equal installments and (ii) if the Interest Only Extension Event has occurred, in thirty six (36) equal installments, of principal plus interest (each a **Term Loan Payment**). Beginning on the Amortization Date, each Term Loan Payment shall be payable on the first day of each month. Borrower s final Term Loan Payment, due on the Term Loan Maturity Date, shall include all outstanding principal and accrued and unpaid interest under the Term Loans. Once repaid, the Term Loans may not be reborrowed.

(c) Prepayment.

(i) Voluntary Prepayment. Borrower shall have the option to prepay either or both of the Term A Loan and the Term B Loan in full, provided Borrower (i) shall provide written notice to Bank of its election to prepay the Term Loans at least ten (10) Business Days prior to such prepayment and (ii) pays, on the date of such prepayment, an amount equal to the sum of (A) all outstanding principal and accrued but unpaid interest for such Term Loans, plus (B) the Prepayment Fee in connection with such Term Loans being prepaid, plus (C) the Final Payment in connection with such Term Loans being prepaid, plus (D) all other sums that shall have become due and payable in connection with such Term Loans being prepaid, including Bank Expenses, if any, and interest at the Default Rate (if Bank so elects) with respect to any past due amounts.

(ii) Mandatory Prepayment Upon an Acceleration. If a Term Loan is accelerated following the occurrence of an Event of Default, Borrower shall immediately pay to Bank an amount equal to the sum of (i) all outstanding principal and accrued but unpaid interest, plus (ii) the Prepayment Fee, plus (iii) the Final Payment, plus (iv) all other sums, if any, that shall have become due and payable, including Bank Expenses, if any, and interest at the Default Rate (if Bank so elects) with respect to any past due amounts.

2.2 Intentionally Omitted.

2.3 Payment of Interest on the Credit Extensions.

(a) Interest Rate. Subject to Section 2.3(b), the principal amount outstanding under the Term Loans shall accrue interest at a fixed per annum rate equal to the greater of (i) eight and thirty nine hundredths of one percent (8.39%) or (ii) the Basic Rate, in either case fixed on the Effective Date, which interest shall be payable monthly in accordance with Section 2.3(c).

(b) Default Rate. Immediately upon the occurrence and during the continuance of an Event of Default, Obligations shall bear interest at a rate per annum which is three percentage points (3.00%) above the rate that is otherwise applicable thereto (the **Default Rate**) unless Bank otherwise elects from time to time in its sole discretion to impose a smaller increase or to waive such increase. Fees and expenses which are required to be paid by Borrower pursuant to the Loan Documents (including, without limitation, Bank Expenses) but are not paid when due shall bear interest until paid at a rate equal to the highest rate applicable to the Obligations unless Bank elects otherwise. Payment or acceptance of the increased interest rate provided in this Section 2.3(b) is not a permitted alternative to timely payment and shall not constitute a waiver of any Event of Default or otherwise prejudice or limit any rights or remedies of Bank.

(c) Payment; Interest Computation. Interest is payable monthly on the first calendar day of each month and shall be computed on the basis of a 360-day year for the actual number of days elapsed. In computing interest, (i) all payments received after 12:00 p.m. Pacific time on any day shall be deemed received at the opening of business on the next Business Day, and (ii) the date of the making of any Credit Extension shall be included and the date of payment shall be excluded; provided, however, that if any Credit Extension is repaid on the same day on which it is made, such day shall be included in computing interest on such Credit Extension.

2.4 Fees. Borrower shall pay to Bank the following:

(a) Commitment Fee. A fully earned, non-refundable commitment fee of One Hundred Fifty Five Thousand Dollars ($155,000) (the Commitment Fee) on the Effective Date; Bank acknowledges receipt from Borrower of a good faith deposit equal to Fifty Thousand Dollars ($50,000), which Bank shall apply to the Commitment Fee on the Effective Date;

(b) The Second Supplemental Final Payment. The Second Supplemental Final Payment (as defined in the Prior Loan Agreement) on the Effective Date;

(c) Final Payment. The Final Payment, when due hereunder;

(d) Prepayment Fee. The Prepayment Fee, when due hereunder;

(e) Prepayment Fee from Prior Loan Agreement. The Prepayment Fee (as defined in the Prior Loan Agreement) is hereby waived by Bank; and

(f) Fees Fully Earned. Unless otherwise provided in this Agreement or in a separate writing by Bank, Borrower shall not be entitled to any credit, rebate, or repayment of any fees earned by Bank pursuant to this Agreement notwithstanding any termination of this Agreement or the suspension or termination of Bank s obligation to make loans and advances hereunder. Bank may deduct amounts owing by Borrower under the clauses of this Section 2.4 pursuant to the terms of Section 2.5(c). Bank shall provide Borrower written notice of deductions made from the Designated Deposit Account pursuant to the terms of the clauses of this Section 2.4.

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2.5 Payments; Application of Payments; Debit of Accounts.

(a) All payments to be made by Borrower under any Loan Document shall be made in immediately available funds in Dollars, without setoff or counterclaim, before 2:00 p.m. Pacific time on the date when due. Payments of principal and/or interest received after 2:00 p.m. Pacific time are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment shall be due the next Business Day, and additional fees or interest, as applicable, shall continue to accrue until paid.

(b) Except with respect to prepayments in accordance with Section 2.1.1(c), Bank has the exclusive right to determine the order and manner in which all payments with respect to the Obligations may be applied. Borrower shall have no right to specify the order or the accounts to which Bank shall allocate or apply any payments required to be made by Borrower to Bank or otherwise received by Bank under this Agreement when any such allocation or application is not specified elsewhere in this Agreement.

(c) Bank may debit any of Borrower s deposit accounts held by Bank (and any of Borrower s deposit accounts whether or not held at Bank while an Event of Default has occurred and is continuing), including the Designated Deposit Account, for principal and interest payments or any other amounts Borrower owes Bank when due, provided that Bank shall first debit the Designated Deposit Account for all regularly scheduled payments. These debits shall not constitute a set-off.

2.6 Withholding. Payments received by Bank from Borrower under this Agreement will be made free and clear of and without deduction for any and all present or future taxes, levies, imposts, duties, deductions, withholdings, assessments, fees or other charges imposed by any Governmental Authority (including any interest, additions to tax or penalties applicable thereto). Specifically, however, if at any time any Governmental Authority, applicable law, regulation or international agreement requires Borrower to make any withholding or deduction from any such payment or other sum payable hereunder to Bank, Borrower hereby covenants and agrees that the amount due from Borrower with respect to such payment or other sum payable hereunder will be increased to the extent necessary to ensure that, after the making of such required withholding or deduction, Bank receives a net sum equal to the sum which it would have received had no withholding or deduction been required, and Borrower shall pay the full amount withheld or deducted to the relevant Governmental Authority. Borrower will, upon request, furnish Bank with proof reasonably satisfactory to Bank indicating that Borrower has made such withholding payment; provided, however, that Borrower need not make any withholding payment if the amount or validity of such withholding payment is contested in good faith by appropriate and timely proceedings and as to which payment in full is bonded or reserved against by Borrower. The agreements and obligations of Borrower contained in this Section 2.6 shall survive the termination of this Agreement.

3 CONDITIONS OF LOANS

3.1 Conditions Precedent to Initial Credit Extension. Bank s obligation to make the initial Credit Extension is subject to the condition precedent that Bank shall have received, in form and substance satisfactory to Bank, such documents, and completion of such other matters, as Bank may reasonably deem necessary or appropriate, including, without limitation:

(a) duly executed original signatures to this Agreement;

(b) duly executed original signatures to the Warrant;

(c) duly executed original signatures to the Control Agreements;

(d) the Operating Documents and long-form good standing certificates of Borrower certified by the Secretary of State (or equivalent agency) of Borrower s jurisdiction of organization or formation and each jurisdiction in which Borrower is qualified to conduct business, each as of a date no earlier than thirty (30) days prior to the Effective Date;

(e) duly executed original signatures to the completed Borrowing Resolutions;

(f) certified copies, dated as of a recent date, of financing statement searches, as Bank may request, accompanied by written evidence (including any UCC termination statements) that the Liens indicated in any such financing statements either constitute Permitted Liens or have been or, in connection with the initial Credit Extension, will be terminated or released;

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(g) the Perfection Certificate executed by Borrower;

(h) evidence satisfactory to Bank that the insurance policies required by Section 6.5 hereof are in full force and effect, together with appropriate evidence showing lender loss payable and/or additional insured clauses in favor of Bank; and

(i) payment of the fees then due as specified in Section 2.4 hereof.

3.2 Conditions Precedent to all Credit Extensions. Bank s obligations to make each Credit Extension, including the initial Credit Extension, are subject to the following conditions precedent:

(a) timely receipt of an executed Payment/Advance Form;

(b) the representations and warranties in this Agreement shall be true, accurate, and complete in all material respects on the date of the Payment/Advance Form and on the Funding Date of each Credit Extension; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date, and no Event of Default shall have occurred and be continuing or result from the Credit Extension. Each Credit Extension is Borrower s representation and warranty on that date that the representations and warranties in this Agreement remain true, accurate, and complete in all material respects; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date;

(c) Bank determines to its sole but reasonable satisfaction that there has not been a Material Adverse Change; and

(d) to the extent not delivered at the Effective Date, duly executed original warrants to purchase shares of common stock of Borrower equal to 1.355% of the Term B Loan funded, in number, form and content in the form attached hereto as Exhibit E.

3.3 Post-Closing Conditions. Bank shall have received, in form and substance satisfactory to Bank, within thirty (30) days after the Effective Date, evidence satisfactory to Bank that the insurance endorsements required by Section 6.5 hereof are in full force and effect.

3.4 Covenant to Deliver. Borrower agrees to deliver to Bank each item required to be delivered to Bank under this Agreement as a condition precedent to any Credit Extension. Borrower expressly agrees that a Credit Extension made prior to the receipt by Bank of any such item shall not constitute a waiver by Bank of Borrower s obligation to deliver such item, and any such Credit Extension in the absence of a required item shall be made in Bank s sole discretion.

4 CREATION OF SECURITY INTEREST

4.1 Grant of Security Interest. Borrower hereby grants Bank, to secure the payment and performance in full of all of the Obligations, a continuing security interest in, and pledges to Bank, the Collateral, wherever located, whether now owned or hereafter acquired or arising, and all proceeds and products thereof.

Borrower acknowledges that it previously has entered, and/or may in the future enter, into Bank Services Agreements with Bank. Regardless of the terms of any Bank Services Agreement, Borrower agrees that any amounts Borrower

owes Bank thereunder shall be deemed to be Obligations hereunder and that it is the intent of Borrower and Bank to have all such Obligations secured by the first priority perfected security interest in the Collateral granted herein (subject only to Permitted Liens that may have superior priority to Bank s Lien in this Agreement).

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If this Agreement is terminated, Bank s Lien in the Collateral shall continue until the Obligations (other than inchoate indemnity obligations) are satisfied in full in cash, and at such time, and upon the termination of Bank s obligation to make Credit Extensions, Bank shall, at Borrower s sole cost and expense, terminate its security interest in the Collateral and all rights therein shall revert to Borrower. In the event (x) all Obligations (other than inchoate indemnity obligations), except for Bank Services, are satisfied in full, and (y) this Agreement is terminated, Bank shall terminate the security interest granted herein upon Borrower providing cash collateral acceptable to Bank in its good faith business judgment consistent with Bank s then current practice for Bank Services, if any. In the event such Bank Services consist of outstanding Letters of Credit, Borrower shall provide to Bank cash collateral in an amount equal to (x) if such Letters of Credit are denominated in Dollars, then at least one hundred five percent (105.0%); and (y) if such Letters of Credit are denominated in a Foreign Currency, then at least one hundred ten percent (110.0%), of the Dollar Equivalent of the face amount of all such Letters of Credit plus all interest, fees, and costs due or to become due in connection therewith (as estimated by Bank in its good faith business judgment), to secure all of the Obligations relating to such Letters of Credit.

4.2 Priority of Security Interest. Borrower represents, warrants, and covenants that the security interest granted herein is and shall at all times continue to be a first priority perfected security interest in the Collateral (subject only to Permitted Liens that are permitted pursuant to the terms of this Agreement to have superior priority to Bank s Lien under this Agreement). If Borrower shall acquire a commercial tort claim greater than Fifty Thousand Dollars ($50,000), Borrower shall promptly notify Bank in a writing signed by Borrower of the general details thereof and grant to Bank in such writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance reasonably satisfactory to Bank. Notwithstanding anything else contained herein, Bank agrees that Permitted Liens which, by the operation of law, are senior to the Bank s lien are permitted to have superior priority to the Bank s Lien hereunder.

4.3 Authorization to File Financing Statements. Borrower hereby authorizes Bank to file financing statements, without notice to Borrower, with all appropriate jurisdictions to perfect or protect Bank s interest or rights hereunder.

5 REPRESENTATIONS AND WARRANTIES

Borrower represents and warrants as follows:

5.1 Due Organization, Authorization; Power and Authority. Borrower is duly existing and in good standing in its jurisdiction of formation and is qualified and licensed to do business and is in good standing in any jurisdiction in which the conduct of its business or its ownership of property requires that it be qualified except where the failure to do so could not reasonably be expected to have a material adverse effect on Borrower s business. In connection with this Agreement, Borrower has delivered to Bank a completed certificate signed by Borrower, entitled Perfection Certificate . Borrower represents and warrants to Bank that (a) Borrower s exact legal name is that indicated on the Perfection Certificate and on the signature page hereof; (b) Borrower is an organization of the type, and is organized in the jurisdiction, set forth in the Perfection Certificate; (c) the Perfection Certificate accurately sets forth Borrower s organizational identification number or accurately states that Borrower has none; (d) the Perfection Certificate accurately sets forth Borrower s place of business, or, if more than one, its chief executive office as well as Borrower s mailing address (if different than its chief executive office); (e) Borrower (and each of its predecessors) has not, in the past five (5) years, changed its jurisdiction of formation, organizational structure or type, or any organizational number assigned by its jurisdiction; and (f) all other information set forth on the Perfection Certificate pertaining to Borrower and each of its Subsidiaries is accurate and complete in all material respects (it being understood and agreed that Borrower may from time to time update certain information in the Perfection Certificate after the Effective Date to the extent permitted by one or more specific provisions in this Agreement). If Borrower is not now a Registered Organization but later becomes one, Borrower shall promptly notify Bank of such occurrence and provide Bank with

Borrower s organizational identification number.

The execution, delivery and performance by Borrower of the Loan Documents to which it is a party have been duly authorized, and do not (i) conflict with any of Borrower s organizational documents, (ii) contravene, conflict with, constitute a default under or violate any material Requirement of Law, (iii) contravene, conflict with or violate any applicable order, writ, judgment, injunction, decree, determination or award of any Governmental Authority by which Borrower or any its Subsidiaries or any of their property or assets may be bound

or affected, (iv) require any action by, filing, registration, or qualification with, or Governmental Approval from, any Governmental Authority (except such Governmental Approvals that have already been obtained and are in full force and effect or in connection with securities filings) or (v) conflict with, contravene, constitute a default or breach under, or result in or permit the termination or acceleration of, any material agreement by which Borrower is bound. Borrower is not in default under any agreement to which it is a party or by which it is bound in which the default could reasonably be expected to have a material adverse effect on Borrower s business.

5.2 Collateral. Borrower has good title to, rights in, and the power to transfer each item of the Collateral upon which it purports to grant a Lien hereunder, free and clear of any and all Liens except Permitted Liens. Borrower has no Collateral Accounts at or with any bank or financial institution other than Bank or Bank s Affiliates except for the Collateral Accounts described in the Perfection Certificate delivered to Bank in connection herewith and which Borrower has taken such actions as are necessary to give Bank a perfected security interest therein, pursuant to the terms of Section 6.6(b). The Accounts are bona fide, existing obligations of the Account Debtors.

The Collateral is not in the possession of any third party bailee (such as a warehouse) except as otherwise provided in the Perfection Certificate or as permitted hereunder. None of the components of the Collateral shall be maintained at locations other than as provided in the Perfection Certificate or as permitted pursuant to Section 7.2.

All Inventory is in all material respects of good and marketable quality, free from material defects.

Borrower is the sole owner of the Intellectual Property which it owns or purports to own except for (a) licenses permitted hereunder, (b) over-the-counter software that is commercially available to the public, and (c) material Intellectual Property licensed to Borrower and noted on the Perfection Certificate. Each Patent which it owns or purports to own and which is material to Borrower s business is valid and enforceable, and no part of the Intellectual Property which Borrower owns or purports to own and which is material to Borrower s business has been judged invalid or unenforceable, in whole or in part. To the best of Borrower s knowledge, no claim has been made that any part of the Intellectual Property violates the rights of any third party except to the extent such claim would not reasonably be expected to have a material adverse effect on Borrower s business.

Except as noted on the Perfection Certificate, Borrower is not a party to, nor is it bound by, any Restricted License.

5.3 Litigation. Except as otherwise disclosed in writing to Bank on the Perfection Certificate or as required under Section 6.2(g), there are no actions or proceedings pending or, to the knowledge of any Responsible Officer, threatened in writing by or against Borrower or any of its Subsidiaries involving more than Three Hundred Fifty Thousand Dollars ($350,000) individually or in the aggregate.

5.4 Financial Statements. Except as otherwise disclosed in writing to Bank, all consolidated financial statements for Borrower and any of its Subsidiaries delivered to Bank fairly present in all material respects Borrower s consolidated financial condition and Borrower s consolidated results of operations.

5.5 Solvency. The fair salable value of Borrower s consolidated assets (including goodwill minus disposition costs) exceeds the fair value of Borrower s liabilities; Borrower is not left with unreasonably small capital after the transactions in this Agreement; and Borrower is able to pay its debts (including trade debts) as they mature.

5.6 Regulatory Compliance. Borrower is not an investment company or a company controlled by an investment company under the Investment Company Act of 1940, as amended. Borrower is not engaged as one of its important activities in extending credit for margin stock (under Regulations X, T and U of the Federal Reserve Board of Governors). Borrower (a) has complied in all material respects with all Requirements of Law, and (b) has not violated

any Requirements of Law the violation of which could reasonably be expected to have a material adverse effect on its business. None of Borrower s or any of its Subsidiaries properties or assets has been used by Borrower or any Subsidiary or, to the best of Borrower s knowledge, by previous Persons, in disposing, producing, storing, treating, or transporting any hazardous substance other than legally. Borrower and each of its Subsidiaries have obtained all consents, approvals and authorizations of, made all declarations or filings with, and given all notices to, all Governmental Authorities that are necessary to continue their respective businesses as currently conducted except where the failure to do so could not reasonably be expected to have a Material Adverse Change.

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5.7 Subsidiaries; Investments. Borrower does not own any stock, partnership, or other ownership interest or other equity securities except for Permitted Investments.

5.8 Tax Returns and Payments; Pension Contributions. Borrower has timely filed all required tax returns and reports, and Borrower has timely paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower except (a) to the extent such taxes are being contested in good faith by appropriate proceedings promptly instituted and diligently conducted, so long as such reserve or other appropriate provision, if any, as shall be required in conformity with GAAP shall have been made therefor, or (b) if such taxes, assessments, deposits and contributions do not, individually or in the aggregate, exceed Twenty Five Thousand Dollars ($25,000).

To the extent Borrower defers payment of any contested taxes, Borrower shall (i) notify Bank in writing of the commencement of, and any material development in, the proceedings, and (ii) post bonds or take any other steps required to prevent the Governmental Authority levying such contested taxes from obtaining a Lien upon any of the Collateral that is other than a Permitted Lien. Borrower is unaware of any claims or adjustments proposed for any of Borrower s prior tax years which could result in additional taxes becoming due and payable by Borrower in excess of Twenty Five Thousand Dollars ($25,000). Borrower has paid all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms, and Borrower has not withdrawn from participation in, and has not permitted partial or complete termination of, or permitted the occurrence of any other event with respect to, any such plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

5.9 Use of Proceeds. Borrower shall use the proceeds of the Credit Extensions solely as working capital to fund its general business requirements and to refinance existing Indebtedness, and not for personal, family, household or agricultural purposes.

5.10 Full Disclosure. No written representation, warranty or other statement of Borrower in any certificate or written statement given to Bank, as of the date such representation, warranty, or other statement was made, taken together with all such written certificates and written statements given to Bank, contains any untrue statement of a material fact or omits to state a material fact necessary to make the statements contained in the certificates or statements not misleading (it being recognized by Bank that the projections and forecasts provided by Borrower in good faith and based upon reasonable assumptions are not viewed as facts and that actual results during the period or periods covered by such projections and forecasts may differ from the projected or forecasted results).

5.12 Definition of Knowledge. For purposes of the Loan Documents, whenever a representation or warranty is made to Borrower s knowledge or awareness, to the best of Borrower s knowledge, or with a similar qualification, knowledge or awareness means the actual knowledge, after reasonable investigation, of any Responsible Officer.

6 AFFIRMATIVE COVENANTS

Borrower shall do all of the following:

6.1 Government Compliance.

(a) Maintain its and all its Subsidiaries legal existence and good standing in their respective jurisdictions of formation and maintain qualification in each jurisdiction in which the failure to so qualify would reasonably be expected to have a material adverse effect on Borrower s business or operations. Borrower shall comply, and have each Subsidiary comply, in all respects, with all laws, ordinances and regulations to which it is subject, noncompliance with which

could have a material adverse effect on Borrower s business.

(b) If applicable, obtain all of the Governmental Approvals necessary for the performance by Borrower of its obligations under the Loan Documents to which it is a party and the grant of a security interest to Bank in the Collateral. Borrower shall promptly provide copies of any such obtained Governmental Approvals to Bank.

6.2 Financial Statements, Reports, Certificates. Provide Bank with the following:

(a) Quarterly Financial Statements. As soon as available, but no later than forty-five (45) days after the last day of calendar quarters one through three and no later than ninety (90) days after the last day of calendar quarter four, a company prepared consolidated balance sheet and income statement covering Borrower s consolidated operations for such quarter certified by a Responsible Officer and in a form reasonably acceptable to Bank;

(b) Monthly Compliance Certificate. Within thirty (30) days after the last day of each month, a duly completed Compliance Certificate signed by a Responsible Officer, certifying that as of the end of such month, Borrower was in full compliance with all of the terms and conditions of this Agreement, and setting forth such other information as Bank may reasonably request;

(c) Annual Operating Budget and Financial Projections. As soon as available, but no later than the earlier of (i) seven (7) days after approval by Borrower s board of directors or (ii) sixty (60) days after the last day of Borrower s fiscal year, annual operating budgets (including income statements, balance sheets and cash flow statements, by quarter) for the upcoming fiscal year of Borrower;

(d) Annual Audited Financial Statements. As soon as available, but no later than one hundred eighty (180) days after the last day of Borrower s fiscal year, audited consolidated financial statements prepared under GAAP, consistently applied, together with an unqualified opinion on the financial statements from an independent certified public accounting firm acceptable to Bank in its reasonable discretion;

(e) Other Statements. Within five (5) days of delivery, copies of all statements, reports and notices made available to Borrower s security holders or to any holders of Subordinated Debt;

(f) SEC Filings. Within five (5) days of filing, copies of all periodic and other reports, proxy statements and other materials filed by Borrower with the SEC, any Governmental Authority succeeding to any or all of the functions of the SEC or with any national securities exchange, or distributed to its shareholders, as the case may be. Documents required to be delivered pursuant to the terms hereof (to the extent any such documents are included in materials otherwise filed with the SEC) may be delivered electronically and if so delivered, shall be deemed to have been delivered on the date on which Borrower posts such documents, or provides a link thereto, on Borrower s website on the Internet at Borrower s website address;

(g) Legal Action Notice. A prompt report of any legal actions pending or threatened in writing against Borrower or any of its Subsidiaries that could reasonably be expected to result in damages or costs to Borrower or any of its Subsidiaries of, individually or in the aggregate, Three Hundred Fifty Thousand Dollars ($350,000) or more; and

(h) Other Financial Information. Other financial information reasonably requested by Bank.

6.3 Inventory; Returns. Keep all Inventory in good and marketable condition, free from material defects. Returns and allowances between Borrower and its Account Debtors shall follow Borrower s customary practices as they exist at the Effective Date. Borrower must promptly notify Bank of all returns, recoveries, disputes and claims that involve more than Three Hundred Fifty Thousand Dollars ($350,000).

6.4 Taxes; Pensions. Timely file, and require each of its Subsidiaries to timely file, all required tax returns and reports and timely pay, and require each of its Subsidiaries to timely pay, all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower and each of its Subsidiaries, except for deferred payment of any taxes contested pursuant to the terms of Section 5.8 hereof and taxes with respect to which the amount does not

exceed the amount set forth in Section 5.8 hereof, and shall deliver to Bank, on demand, appropriate certificates attesting to such payments, and pay all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms.

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6.5 Insurance.

(a) Keep its business and the Collateral insured for risks and in amounts standard for companies in Borrower s industry and location and as Bank may reasonably request. Insurance policies shall be in a form, with financially sound and reputable insurance companies that are not Affiliates of Borrower, and in amounts that are reasonably satisfactory to Bank. All property policies shall have a lender s loss payable endorsement showing Bank as lender loss payee. All liability policies shall show, or have endorsements showing, Bank as an additional insured. Bank shall be named as lender loss payee and/or additional insured with respect to any such insurance providing coverage in respect of any Collateral. As of the Effective Date, Bank hereby agrees that Borrower s insurance coverage is satisfactory for the purposes herein.

(b) Proceeds payable under any property policy are, at Bank s option, payable to Bank on account of the Obligations. Notwithstanding the foregoing, (a) so long as no Event of Default has occurred and is continuing, Borrower shall have the option of applying the proceeds of any casualty policy up to One Hundred Thousand Dollars ($100,000) with respect to any loss, but not exceeding Three Hundred Thousand Dollars ($300,000) in the aggregate for all losses under all casualty policies in any one year, toward the replacement or repair of destroyed or damaged property; provided that any such replaced or repaired property (i) shall be of equal or like value as the replaced or repaired Collateral and (ii) shall be deemed Collateral in which Bank has been granted a first priority security interest, and (b) after the occurrence and during the continuance of an Event of Default, all proceeds payable under such casualty policy shall, at the option of Bank, be payable to Bank on account of the Obligations.

(c) At Bank s request, Borrower shall deliver certified copies of insurance policies and evidence of all premium payments. Borrower shall use commercially reasonable efforts to cause each provider of any such insurance required under this Section 6.5 to agree, by endorsement upon the policy or policies issued by it or by independent instruments furnished to Bank, that it will give Bank thirty (30) days prior written notice before any such policy or policies shall be materially altered or canceled (or ten (10) days prior written notice in the case of cancellation for non-payment of premium). If Borrower fails to obtain insurance as required under this Section 6.5 or to pay any amount or furnish any required proof of payment to third persons and Bank, Bank may make all or part of such payment or obtain such insurance policies required in this Section 6.5, and take any action under the policies Bank deems prudent.

6.6 Operating Accounts.

(a) Maintain its primary and its Subsidiaries primary operating and other deposit accounts and securities accounts with Bank and Bank s Affiliates, which accounts shall represent at least eighty-five percent (85%) of the dollar value of Borrower s and such Subsidiaries accounts at all financial institutions.

(b) Provide Bank five (5) days prior written notice before establishing any Collateral Account at or with any bank or financial institution other than Bank or Bank s Affiliates. For each Collateral Account that Borrower at any time maintains, Borrower shall cause the applicable bank or financial institution (other than Bank) at or with which any Collateral Account is maintained to execute and deliver a Control Agreement or other appropriate instrument with respect to such Collateral Account to perfect Bank s Lien in such Collateral Account in accordance with the terms hereunder, which Control Agreements may not be terminated without the prior written consent of Bank. The provisions of the previous sentence shall not apply to deposit accounts (i) exclusively used for payroll, payroll taxes and other employee wage and benefit payments or other employee option exercising to or for the benefit of Borrower s employees and identified to Bank by Borrower as such or (ii) accounts held by Borrower or any Subsidiary in the ordinary course of its business outside of the United States with an aggregate balance not to exceed One Hundred Fifty Thousand Dollars ($150,000).

6.7 Reserved.

6.8 Protection of Intellectual Property Rights.

(a) (i) Protect, defend and maintain the validity and enforceability of its material owned Intellectual Property; (ii) promptly advise Bank in writing of material infringements or any other event that could reasonably be expected to materially and adversely affect the value of its material owned Intellectual Property; and (iii) not allow any material owned Intellectual Property material to Borrower s business to be abandoned, forfeited or dedicated to the public without Bank s written consent.

(b) Provide written notice to Bank within the later of (A) ten (10) days of entering or becoming bound by any Restricted License (other than over-the-counter software that is commercially available to the public), or (B) on the then-next Compliance Certificate required to be delivered hereunder. Borrower shall take such commercially reasonable steps as Bank requests to obtain the consent of, or waiver by, any person whose consent or waiver is necessary for (i) any Restricted License to be deemed Collateral and for Bank to have a security interest in it that might otherwise be restricted or prohibited by law or by the terms of any such Restricted License, whether now existing or entered into in the future, and (ii) Bank to have the ability in the event of a liquidation of any Collateral to dispose of such Collateral in accordance with Bank s rights and remedies under this Agreement and the other Loan Documents.

6.9 Litigation Cooperation. From the date hereof and continuing through the termination of this Agreement, make available to Bank, without expense to Bank, Borrower and its officers, employees and agents and Borrower s books and records, to the extent that Bank may deem them reasonably necessary to prosecute or defend any third-party suit or proceeding instituted by or against Bank with respect to any Collateral or relating to Borrower.

6.10 Access to Collateral; Books and Records. Allow Bank, or its agents, at reasonable times during regular business hours, on three (3) Business Days notice (provided no notice is required if an Event of Default has occurred and is continuing), to inspect the Collateral and audit and copy Borrower s Books. Such inspections or audits shall be conducted no more often than once every twelve (12) months unless an Event of Default has occurred and is continuing in which case such inspections and audits shall occur as often as Bank shall determine is necessary. The foregoing inspections and audits shall be at Borrower s expense, and the charge therefor shall be $850 per person per day (or such higher amount as shall represent Bank s then-current standard charge for the same), plus reasonable out-of-pocket expenses. In the event Borrower and Bank schedule an audit more than ten (10) days in advance, and Borrower cancels or seeks to reschedule the audit with less than ten (10) days written notice to Bank, then (without limiting any of Bank s rights or remedies), Borrower shall pay Bank a fee of One Thousand Dollars ($1,000) plus any out-of-pocket expenses incurred by Bank to compensate Bank for the anticipated costs and expenses of the cancellation or rescheduling.

6.11 Formation or Acquisition of Subsidiaries. Notwithstanding and without limiting the negative covenants contained in Section 7.3 and 7.7 hereof, at the time that Borrower forms any direct or indirect Subsidiary or acquires any direct or indirect Subsidiary after the Effective Date, Borrower shall (a) cause such new Subsidiary to provide to Bank either a joinder to the Loan Agreement to cause such Subsidiary to become a co-borrower hereunder or a Guaranty, together with such appropriate financing statements and/or Control Agreements, all in form and substance reasonably satisfactory to Bank (including being sufficient to grant Bank a first priority Lien (subject to Permitted Liens) in and to the assets of such newly formed or acquired Subsidiary; provided, however, that any such new Subsidiary that is a Foreign Subsidiary shall not be required to become a co-borrower hereunder), (b) provide to Bank appropriate certificates and powers and financing statements, pledging all of the direct or beneficial ownership interest in such new Subsidiary, in form and substance reasonably satisfactory to Bank (provided, however, that Borrower shall not be required to grant or pledge a security interest to Bank in more than 65% of the stock, units or other evidence of ownership held by Borrower of any Foreign Subsidiary), and (c) provide to Bank all other documentation in form and substance reasonably satisfactory to Bank. Any document, agreement, or instrument executed or issued pursuant to this Section 6.11 shall be a Loan Document.

6.12 Further Assurances. Execute any further instruments and take further action as Bank reasonably requests to perfect or continue Bank s Lien in the Collateral or to effect the purposes of this Agreement. Deliver to Bank, within five (5) days after the same are sent or received, copies of all correspondence, reports, documents and other filings with any Governmental Authority that could reasonably be expected to have a material effect on any of the Governmental Approvals or otherwise on the operations of Borrower or any of its Subsidiaries.

7 NEGATIVE COVENANTS

Borrower shall not do any of the following without Bank s prior written consent:

7.1 Dispositions. Convey, sell, lease, transfer, assign, or otherwise dispose of (collectively, **Transfer**), or permit any of its Subsidiaries to Transfer, all or any part of its business or property, except for Transfers (a) of Inventory and clinical trial supplies and materials in the ordinary course of business; (b) of worn-out or obsolete Equipment that is, in the reasonable judgment of Borrower, no longer economically practicable to

maintain or useful in the ordinary course of business of Borrower; (c) consisting of Permitted Liens and Permitted Investments; (d) consisting of the sale or issuance of any stock of Borrower permitted under Section 7.2 of this Agreement; (e) consisting of Borrower s use or transfer of money or Cash Equivalents in the ordinary course of its business in a manner that is not prohibited by the terms of this Agreement or the other Loan Documents; and (f) of non-exclusive licenses for the use of the property of Borrower or its Subsidiaries in the ordinary course of business and licenses that could not result in a legal transfer of title of the licensed property but that may be exclusive in respects other than territory and that may be exclusive as to territory only as to discreet geographical areas outside of the United States.

7.2 Changes in Business, Management, Ownership or Business Locations. (a) Engage in or permit any of its Subsidiaries to engage in any business other than the businesses currently engaged in by Borrower and such Subsidiary, as applicable, or reasonably related thereto; (b) liquidate or dissolve; or (c) (i) the Key Person ceases to hold the office of Chief Executive Officer with Borrower and a replacement reasonably satisfactory to the board of directors of Borrower is not made within ninety (90) days after his departure from Borrower; (ii) enter into any transaction or series of related transactions in which the stockholders of Borrower who were not stockholders immediately prior to the first such transaction own more than forty-nine percent (49%) of the voting stock of Borrower immediately after giving effect to such transaction or related series of such transactions (other than by the issuance and sale of Borrower s equity securities in that certain private placement offering closed on November 6, 2013 or by the issuance and sale of Borrower s equity securities in a public offering or to venture capital investors, private equity investors or other bona fide financial investors so long as Borrower identifies to Bank such investors prior to the closing of the transaction and provides to Bank a description of the material terms of the transaction).

Borrower shall not, without at least thirty (30) days prior written notice to Bank: (1) add any new offices or business locations, including warehouses (unless such new offices or business locations contain less than Three Hundred Fifty Thousand Dollars ($350,000) in Borrower s assets or property) or deliver any portion of the Collateral valued, individually or in the aggregate, in excess of Three Hundred Fifty Thousand Dollars ($350,000) to a bailee at a location other than to a bailee and at a location already disclosed in the Perfection Certificate, (2) change its jurisdiction of organization, (3) change its organizational structure or type, (4) change its legal name, or (5) change any organizational number (if any) assigned by its jurisdiction of organization. Except for assets (including clinical trial materials) in transit in the ordinary course, if Borrower intends to deliver any portion of the Collateral valued, individually or in the aggregate, in excess of Three Hundred Fifty Thousand Dollars ($350,000) to a bailee, and Bank and such bailee are not already parties to a bailee agreement governing both the Collateral and the location to which Borrower intends to deliver the Collateral, Borrower shall use commercially reasonable efforts to cause such bailee to execute and deliver a bailee agreement in form and substance satisfactory to Bank.

7.3 Mergers or Acquisitions. Merge or consolidate, or permit any of its Subsidiaries to merge or consolidate, with any other Person, or acquire, or permit any of its Subsidiaries to acquire, all or substantially all of the capital stock or property of another Person (including, without limitation, by the formation of any Subsidiary), except where the consideration for such transaction is entirely in the form of capital stock of Borrower or a Subsidiary of Borrower (not including closing and other transaction fees). A Subsidiary may merge or consolidate into another Subsidiary or into Borrower and for the avoidance of doubt, Borrower may, subject to Borrower s compliance with Section 6.11 hereof, create a Subsidiary as provided in clause (f) of the definition of Permitted Investments.

7.4 Indebtedness. Create, incur, assume, or be liable for any Indebtedness, or permit any Subsidiary to do so, other than Permitted Indebtedness.

7.5 Encumbrance. Create, incur, allow, or suffer any Lien on any of its property, or assign or convey any right to receive income, including the sale of any Accounts, or permit any of its Subsidiaries to do so, except for Permitted

Liens; permit any Collateral not to be subject to the first priority security interest granted herein (except for such purchase money Liens under clause (c) of the definition of Permitted Liens); or enter into any agreement, document, instrument or other arrangement (except with or in favor of Bank) with any Person that directly or indirectly prohibits, or has the effect of prohibiting, Borrower from assigning, mortgaging, pledging, granting a security interest in or upon, or encumbering any of Borrower s Intellectual Property, except as is otherwise permitted in Section 7.1 hereof and the definition of Permitted Lien herein.

7.6 Maintenance of Collateral Accounts. Maintain any Collateral Account except pursuant to the terms of Section 6.6(b) hereof.

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7.7 Distributions; Investments. (a) Pay any dividends or make any distribution or payment or redeem, retire or purchase any capital stock, provided that (i) Borrower may convert any of its convertible securities into other securities pursuant to the terms of such convertible securities or otherwise in exchange thereof, (ii) Borrower may pay dividends or distributions solely in common stock; (iii) Borrower may repurchase the stock of employees, directors, officers or consultants pursuant to stock repurchase agreements so long as an Event of Default does not exist at the time of such repurchase and would not exist after giving effect to such repurchase, provided that the aggregate amount of all such repurchases does not exceed Three Hundred Fifty Thousand ($350,000) per fiscal year; (iv) make purchases of capital stock in connection with the exercise of stock options or stock appreciation by way of a cashless exercise; and (v) make purchases of fractional shares of capital stock arising out of stock dividends, splits or combinations or business combinations; or (b) directly or indirectly make any Investment (including, without limitation, by the formation of any Subsidiary) other than Permitted Investments, or permit any of its Subsidiaries to do so.

7.8 Transactions with Affiliates. Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of Borrower, except for (a) transactions that are in the ordinary course of Borrower s business, upon fair and reasonable terms that are no less favorable to Borrower than would be obtained in an arm s length transaction with a non-affiliated Person, (b) equity investments in Borrower or Subordinated Debt, (c) compensation related arrangements in the ordinary course of business or otherwise approved by Borrower s board of directors or by Bank in writing and (d) transactions permitted pursuant to the terms of Section 7.2 hereof.

7.9 Subordinated Debt. (a) Make or permit any payment on any Subordinated Debt, except under the terms of the subordination, intercreditor, or other similar agreement to which such Subordinated Debt is subject, or (b) amend any provision in any document relating to the Subordinated Debt that would increase the amount thereof, provide for earlier or greater principal, interest, or other payments thereon, or adversely affect the subordination thereof to Obligations owed to Bank.

7.10 Compliance. Become an investment company or a company controlled by an investment company , under the Investment Company Act of 1940, as amended, or undertake as one of its important activities extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Credit Extension for that purpose; fail to (a) meet the minimum funding requirements of ERISA, (b) prevent a Reportable Event or Prohibited Transaction, as defined in ERISA, from occurring, or (c) comply with the Federal Fair Labor Standards Act, the failure of any of the conditions described in clauses (a) through (c) which could reasonably be expected to have a material adverse effect on Borrower s business; or violate any other law or regulation, if the violation could reasonably be expected to have a material adverse effect on Borrower s business, or permit any of its Subsidiaries to do so; withdraw or permit any Subsidiary to withdraw from participation in, permit partial or complete termination of, or permit the occurrence of any other event with respect to, any present pension, profit sharing and deferred compensation plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

8 EVENTS OF DEFAULT

Any one of the following shall constitute an event of default (an **Event of Default**) under this Agreement:

8.1 Payment Default. Borrower fails to (a) make any payment of principal or interest on any Credit Extension when due, or (b) pay any other Obligations within three (3) Business Days after such Obligations are due and payable (which three (3) Business Day grace period shall not apply to payments due on the Term Loan Maturity Date). During the cure period, the failure to make or pay any payment specified in clause (b) hereunder is not an Event of Default

(but no Credit Extension will be made during the cure period);

8.2 Covenant Default.

(a) Borrower fails or neglects to perform any obligation in Sections 6.2, 6.4, 6.5, 6.6, 6.8(b), 6.10 or 6.11 or violates any covenant in Section 7; or

(b) Borrower fails or neglects to perform, keep, or observe any other term, provision, condition, covenant or agreement contained in this Agreement or any Loan Documents, and as to any default (other than those

specified in this Section 8) under such other term, provision, condition, covenant or agreement that can be cured, has failed to cure the default within ten (10) Business Days after the occurrence thereof; provided, however, that if the default cannot by its nature be cured within the ten (10) Business Day period or cannot after diligent attempts by Borrower be cured within such ten (10) Business Day period, and such default is likely to be cured within a reasonable time, then Borrower shall have an additional period (which shall not in any case exceed thirty (30) days) to attempt to cure such default, and within such reasonable time period the failure to cure the default shall not be deemed an Event of Default (but no Credit Extensions shall be made during such cure period). Cure periods provided under this section shall not apply, among other things, to any other covenants set forth in clause (a) above;

8.3 Material Adverse Change. A Material Adverse Change occurs;

8.4 Attachment; Levy; Restraint on Business.

(a) (i) The service of process seeking to attach, by trustee or similar process, any funds of Borrower or of any entity under the control of Borrower (including a Subsidiary) in excess of One Hundred Thousand Dollars ($100,000), or (ii) a notice of lien or levy is filed against any of Borrower s assets with a value in excess of One Hundred Thousand Dollars ($100,000) by any Governmental Authority, and the same under subclauses (i) and (ii) hereof are not, within ten (10) days after the occurrence thereof, discharged or stayed (whether through the posting of a bond or otherwise); provided, however, no Credit Extensions shall be made during any ten (10) day cure period; or

(b) (i) any material portion of Borrower s assets is attached, seized, levied on, or comes into possession of a trustee or receiver, or (ii) any court order enjoins, restrains, or prevents Borrower from conducting all or any material part of its business;

8.5 Insolvency. (a) Borrower is unable to pay its debts (including trade debts) as they become due or otherwise becomes insolvent; (b) Borrower begins an Insolvency Proceeding; or (c) an Insolvency Proceeding is begun against Borrower and not dismissed or stayed within forty five (45) days (but no Credit Extensions shall be made while any of the conditions described in clause (a) exist and/or until any Insolvency Proceeding is dismissed);

8.6 Other Agreements. There is, under any agreement to which Borrower is a party with a third party or parties, (a) any default resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Indebtedness in an amount individually or in the aggregate in excess of Three Hundred Fifty Thousand Dollars ($350,000); or (b) any breach or default by Borrower, the result of which could have a material adverse effect on Borrower s business;

8.7 Judgments; Penalties. One or more fines, penalties or final judgments, orders or decrees for the payment of money in an amount, individually or in the aggregate, of at least Three Hundred Fifty Thousand Dollars ($350,000) (not covered by independent third-party insurance as to which liability has been accepted by such insurance carrier) shall be rendered against Borrower by any Governmental Authority, and the same are not, within ten (10) days after the entry, assessment or issuance thereof, discharged, satisfied, or paid, or after execution thereof, stayed or bonded pending appeal, or such judgments are not discharged prior to the expiration of any such stay (provided that no Credit Extensions will be made prior to the satisfaction, payment, discharge, stay, or bonding of such fine, penalty, judgment, order or decree);

8.8 Misrepresentations. Borrower or any Person acting for Borrower makes any representation, warranty, or other statement now or later in this Agreement, any Loan Document or in any writing delivered to Bank or to induce Bank to enter this Agreement or any Loan Document, and such representation, warranty, or other statement, when taken as a whole, is incorrect in any material respect when made;

8.9 Subordinated Debt. Any document, instrument, or agreement evidencing any Subordinated Debt shall for any reason be revoked or invalidated or otherwise cease to be in full force and effect, any Person shall be in breach thereof or contest in any manner the validity or enforceability thereof or deny that it has any further liability or obligation thereunder, or the Obligations shall for any reason be subordinated or shall not have the priority contemplated by this Agreement or the Subordination Agreement;

8.10 Governmental Approvals. Any Governmental Approval shall have been (a) revoked, rescinded, suspended, modified in an adverse manner or not renewed in the ordinary course for a full term or (b) subject to any

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decision by a Governmental Authority that designates a hearing with respect to any applications for renewal of any of such Governmental Approval or that could result in the Governmental Authority taking any of the actions described in clause (a) above, and such decision or such revocation, rescission, suspension, modification or non-renewal (i) causes, or could reasonably be expected to cause, a Material Adverse Change, or (ii) adversely affects the legal qualifications of Borrower or any of its Subsidiaries to hold such Governmental Approval in any applicable jurisdiction and such revocation, rescission, suspension, modification or non-renewal could reasonably be expected to affect the status of or legal qualifications of Borrower or any of its Subsidiaries to hold any Governmental Approval in any other jurisdiction.

9 BANK S RIGHTS AND REMEDIES

9.1 Rights and Remedies. Upon the occurrence and during the continuance of an Event of Default, Bank may, without notice or demand, do any or all of the following:

(a) declare all Obligations immediately due and payable (but if an Event of Default described in Section 8.5 occurs all Obligations are immediately due and payable without any action by Bank);

(b) stop advancing money or extending credit for Borrower s benefit under this Agreement or under any other agreement between Borrower and Bank;

(c) for any Letters of Credit, demand that Borrower (i) deposit cash with Bank in an amount equal to at least 105% (110% for Letters of Credit denominated in a Foreign Currency) of the Dollar Equivalent of the aggregate face amount of all Letters of Credit remaining undrawn (plus all interest, fees, and costs due or to become due in connection therewith (as estimated by Bank in its good faith business judgment)), to secure all of the Obligations relating to such Letters of Credit, as collateral security for the repayment of any future drawings under such Letters of Credit, and Borrower shall forthwith deposit and pay such amounts, and (ii) pay in advance all letter of credit fees scheduled to be paid or payable over the remaining term of any Letters of Credit;

(d) terminate any FX Contracts;

(e) verify the amount of, demand payment of and performance under, and collect any Accounts and General Intangibles, settle or adjust disputes and claims directly with Account Debtors for amounts on terms and in any order that Bank considers advisable, notify any Person owing Borrower money of Bank s security interest in such funds;

(f) make any payments and do any acts it considers necessary or reasonable to protect the Collateral and/or its security interest in the Collateral. Borrower shall assemble the Collateral if Bank requests and make it available as Bank designates. Bank may enter premises where the Collateral is located, take and maintain possession of any part of the Collateral, and pay, purchase, contest, or compromise any Lien that appears to be prior or superior to its security interest and pay all expenses incurred. Borrower grants Bank a license to enter and occupy any of its premises, without charge, to exercise any of Bank s rights or remedies;

(g) apply to the Obligations (i) any balances and deposits of Borrower it holds, or (ii) any amount held by Bank owing to or for the credit or the account of Borrower;

(h) ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell the Collateral. Bank is hereby granted a non-exclusive, royalty-free license or other right to use, without charge, Borrower s labels, Patents, Copyrights, mask works, rights of use of any name, trade secrets, trade names, Trademarks, and advertising matter, or any similar property as it pertains to the Collateral, in completing production of, advertising for sale, and

selling any Collateral and, in connection with Bank s exercise of its rights under this Section, Borrower s rights under all licenses and all franchise agreements inure to Bank s benefit;

(i) place a hold on any account maintained with Bank and/or deliver a notice of exclusive control, any entitlement order, or other directions or instructions pursuant to any Control Agreement or similar agreements providing control of any Collateral;

(j) demand and receive possession of Borrower s Books; and

(k) exercise all rights and remedies available to Bank under the Loan Documents or at law or equity, including all remedies provided under the Code (including disposal of the Collateral pursuant to the terms thereof).

9.2 Power of Attorney. Borrower hereby irrevocably appoints Bank as its lawful attorney-in-fact, exercisable solely upon the occurrence and during the continuance of an Event of Default, to: (a) endorse Borrower s name on any checks or other forms of payment or security; (b) sign Borrower s name on any invoice or bill of lading for any Account or drafts against Account Debtors; (c) settle and adjust disputes and claims about the Accounts directly with Account Debtors, for amounts and on terms Bank determines reasonable; (d) make, settle, and adjust all claims under Borrower s insurance policies; (e) pay, contest or settle any Lien, charge, encumbrance, security interest, and adverse claim in or to the Collateral, or any judgment based thereon, or otherwise take any action to terminate or discharge the same; and (f) transfer the Collateral into the name of Bank or a third party as the Code permits. Borrower hereby appoints Bank as its lawful attorney-in-fact to sign Borrower s name on any documents necessary to perfect or continue the perfection of Bank s security interest in the Collateral regardless of whether an Event of Default has occurred until all Obligations have been satisfied in full and Bank is under no further obligation to make Credit Extensions hereunder. Bank s foregoing appointment as Borrower s attorney in fact, and all of Bank s rights and powers, coupled with an interest, are irrevocable until all Obligations (other than inchoate indemnity obligations) have been fully repaid and performed and Bank s obligation to provide Credit Extensions terminates.

9.3 Protective Payments. If Borrower fails to obtain the insurance called for by Section 6.5 or fails to pay any premium thereon or fails to pay any other amount which Borrower is obligated to pay under this Agreement or any other Loan Document or which may be required to preserve the Collateral, Bank may obtain such insurance or make such payment, and all amounts so paid by Bank are Bank Expenses and immediately due and payable, bearing interest at the then highest rate applicable to the Obligations, and secured by the Collateral. Bank will make reasonable efforts to provide Borrower with notice of Bank obtaining such insurance at the time it is obtained or within a reasonable time thereafter. No payments by Bank are deemed an agreement to make similar payments in the future or Bank s waiver of any Event of Default.

9.4 Application of Payments and Proceeds Upon Default. If an Event of Default has occurred and is continuing, Bank shall have the right to apply in any order any funds in its possession, whether from Borrower account balances, payments, proceeds realized as the result of any collection of Accounts or other disposition of the Collateral, or otherwise, to the Obligations. Bank shall pay any surplus to Borrower by credit to the Designated Deposit Account or to other Persons legally entitled thereto; Borrower shall remain liable to Bank for any deficiency. If Bank, directly or indirectly, enters into a deferred payment or other credit transaction with any purchaser at any sale of Collateral, Bank shall have the option, exercisable at any time, of either reducing the Obligations by the principal amount of the purchase price or deferring the reduction of the Obligations until the actual receipt by Bank of cash therefor.

9.5 Bank s Liability for Collateral. So long as Bank complies with reasonable banking practices regarding the safekeeping of the Collateral in the possession or under the control of Bank, Bank shall not be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; (c) any diminution in the value of the Collateral; or (d) any act or default of any carrier, warehouseman, bailee, or other Person. Borrower bears all risk of loss, damage or destruction of the Collateral.

9.6 No Waiver; Remedies Cumulative. Bank s failure, at any time or times, to require strict performance by Borrower of any provision of this Agreement or any other Loan Document shall not waive, affect, or diminish any right of Bank thereafter to demand strict performance and compliance herewith or therewith. No waiver hereunder shall be effective unless signed by the party granting the waiver and then is only effective for the specific instance and purpose for which it is given. Bank s rights and remedies under this Agreement and the other Loan Documents are cumulative. Bank has all rights and remedies provided under the Code, by law, or in equity. Bank s exercise of one

right or remedy is not an election and shall not preclude Bank from exercising any other remedy under this Agreement or other remedy available at law or in equity, and Bank s waiver of any Event of Default is not a continuing waiver. Bank s delay in exercising any remedy is not a waiver, election, or acquiescence.

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9.7 Demand Waiver. Borrower waives demand, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees held by Bank on which Borrower is liable.

10 NOTICES

All notices, consents, requests, approvals, demands, or other communication by any party to this Agreement or any other Loan Document must be in writing and shall be deemed to have been validly served, given, or delivered: (a) upon the earlier of actual receipt and three (3) Business Days after deposit in the U.S. mail, first class, registered or certified mail return receipt requested, with proper postage prepaid; (b) upon transmission, when sent by electronic mail or facsimile transmission; (c) one (1) Business Day after deposit with a reputable overnight courier with all charges prepaid; or (d) when delivered, if hand-delivered by messenger, all of which shall be addressed to the party to be notified and sent to the address, facsimile number, or email address indicated below. Bank or Borrower may change its mailing or electronic mail address or facsimile number by giving the other party written notice thereof in accordance with the terms of this Section 10.

If to Borrower:	Ignyta, Inc. 11095 Flintkote Avenue, Suite D San Diego, CA 92121 Attn: CFO Email: jc@ignyta.com Website URL: www.ignyta.com
With a copy to:	Latham & Watkins LLP 12670 High Bluff Drive San Diego, CA 92130 Attn: Cheston Larson Email: cheston.larson@lw.com
If to Bank:	Silicon Valley Bank 4370 La Jolla Village Drive, Suite 1050 San Diego, CA 92122 Attn: Anthony Flores Fax: (858) 622-1424 Email: aflores@svb.com

11 CHOICE OF LAW, VENUE, JURY TRIAL WAIVER, AND JUDICIAL REFERENCE

Except as otherwise expressly provided in any of the Loan Documents, California law governs the Loan Documents without regard to principles of conflicts of law. Borrower and Bank each submit to the exclusive jurisdiction of the State and Federal courts in Santa Clara County, California; provided, however, that nothing in this Agreement shall be deemed to operate to preclude Bank from bringing suit or taking other legal action in any other jurisdiction to realize on the Collateral or any other security for the Obligations, or to enforce a judgment or other court order in favor of Bank. Borrower expressly submits and consents in advance to such jurisdiction in any action or suit commenced in any such court, and Borrower hereby waives any objection that it may have based upon lack of personal jurisdiction, improper venue, or forum non conveniens and hereby consents to the granting of such legal or equitable relief as is deemed appropriate by such court. Borrower hereby waives personal service of the summons, complaints, and other

process issued in such action or suit and agrees that service of such summons, complaints, and other process may be made by registered or certified mail addressed to Borrower at the address set forth in Section 10, or subsequently provided by Borrower in accordance with, Section 10 of this Agreement and that service so made shall be deemed completed upon the earlier to occur of Borrower s actual receipt thereof or three (3) days after deposit in the U.S. mails, proper postage prepaid.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, BORROWER AND BANK EACH WAIVE THEIR RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, THE LOAN DOCUMENTS OR ANY CONTEMPLATED TRANSACTION, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR BOTH PARTIES TO ENTER INTO THIS AGREEMENT. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

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WITHOUT INTENDING IN ANY WAY TO LIMIT THE PARTIES AGREEMENT TO WAIVE THEIR RESPECTIVE RIGHT TO A TRIAL BY JURY, if the above waiver of the right to a trial by jury is not enforceable, the parties hereto agree that any and all disputes or controversies of any nature between them arising at any time shall be decided by a reference to a private judge, mutually selected by the parties (or, if they cannot agree, by the Presiding Judge of the Santa Clara County, California Superior Court) appointed in accordance with California Code of Civil Procedure Section 638 (or pursuant to comparable provisions of federal law if the dispute falls within the exclusive jurisdiction of the federal courts), sitting without a jury, in Santa Clara County, California; and the parties hereby submit to the jurisdiction of such court. The reference proceedings shall be conducted pursuant to and in accordance with the provisions of California Code of Civil Procedure §§ 638 through 645.1, inclusive. The private judge shall have the power, among others, to grant provisional relief, including without limitation, entering temporary restraining orders, issuing preliminary and permanent injunctions and appointing receivers. All such proceedings shall be closed to the public and confidential and all records relating thereto shall be permanently sealed. If during the course of any dispute, a party desires to seek provisional relief, but a judge has not been appointed at that point pursuant to the judicial reference procedures, then such party may apply to the Santa Clara County, California Superior Court for such relief. The proceeding before the private judge shall be conducted in the same manner as it would be before a court under the rules of evidence applicable to judicial proceedings. The parties shall be entitled to discovery which shall be conducted in the same manner as it would be before a court under the rules of discovery applicable to judicial proceedings. The private judge shall oversee discovery and may enforce all discovery rules and orders applicable to judicial proceedings in the same manner as a trial court judge. The parties agree that the selected or appointed private judge shall have the power to decide all issues in the action or proceeding, whether of fact or of law, and shall report a statement of decision thereon pursuant to California Code of Civil Procedure § 644(a). Nothing in this paragraph shall limit the right of any party at any time to exercise self-help remedies, foreclose against collateral, or obtain provisional remedies. The private judge shall also determine all issues relating to the applicability, interpretation, and enforceability of this paragraph.

This Section 11 shall survive the termination of this Agreement.

12 GENERAL PROVISIONS

12.1 Termination Prior to Maturity Date; Survival. All covenants, representations and warranties made in this Agreement continue in full force until this Agreement has terminated pursuant to its terms and all Obligations have been satisfied. So long as Borrower has satisfied the Obligations (other than inchoate indemnity obligations, any other obligations which, by their terms, are to survive the termination of this Agreement, and any Obligations under Bank Services Agreements that are cash collateralized in accordance with Section 4.1 of this Agreement), this Agreement may be terminated prior to the Term Loan Maturity Date by Borrower in accordance with Section 2.1.1(c)(i). Those obligations that are expressly specified in this Agreement as surviving this Agreement s termination shall continue to survive notwithstanding this Agreement s termination.

12.2 Successors and Assigns. This Agreement binds and is for the benefit of the successors and permitted assigns of each party. Borrower may not assign this Agreement or any rights or obligations under it without Bank s prior written consent (which may be granted or withheld in Bank s discretion). Bank has the right, without the consent of or notice to Borrower, to sell, transfer, assign, negotiate, or grant participation in all or any part of, or any interest in, Bank s obligations, rights, and benefits under this Agreement and the other Loan Documents (other than the Warrant, as to which assignment, transfer and other such actions are governed by the terms thereof). So long as no Event of Default has occurred and is continuing, Bank hereby agrees that Bank shall not assign its rights hereunder to any operating company that is a direct competitor of Borrower, a vulture or distressed debt fund or any entity not in the business of holding loans similar to the Term Loans in the ordinary course of its business, all as reasonably determined by Bank.

12.3 Indemnification. Borrower agrees to indemnify, defend and hold Bank and its directors, officers, employees, agents, attorneys, or any other Person affiliated with or representing Bank (each, an **Indemnified Person**) harmless against: (i) all obligations, demands, claims, and liabilities (collectively, **Claims**) claimed or asserted by any other party in connection with the transactions contemplated by the Loan Documents; and (ii) all losses or expenses (including Bank Expenses) in any way suffered, incurred, or paid by such Indemnified Person as a result of, following from, consequential to, or arising from transactions between Bank and Borrower contemplated by the Loan Documents (including reasonable attorneys fees and expenses), except for Claims and/or losses directly caused by such Indemnified Person s gross negligence or willful misconduct.

This Section 12.3 shall survive until all statutes of limitation with respect to the Claims, losses, and expenses for which indemnity is given shall have run.

12.4 Time of Essence. Time is of the essence for the performance of all Obligations in this Agreement.

12.5 Severability of Provisions. Each provision of this Agreement is severable from every other provision in determining the enforceability of any provision.

12.6 Correction of Loan Documents. Bank may correct patent errors and fill in any blanks in this Agreement and the other Loan Documents consistent with the agreement of the parties so long as Bank provides Borrower with written notice of such correction and allows Borrower at least ten (10) days to object to such correction. In the event of such objection, such correction shall not be made except by an amendment signed by both Bank and Borrower.

12.7 Amendments in Writing; Waiver; Integration. No purported amendment or modification of any Loan Document, or waiver, discharge or termination of any obligation under any Loan Document, shall be enforceable or admissible unless, and only to the extent, expressly set forth in a writing signed by the party against which enforcement or admission is sought. Without limiting the generality of the foregoing, no oral promise or statement, nor any action, inaction, delay, failure to require performance or course of conduct shall operate as, or evidence, an amendment, supplement or waiver or have any other effect on any Loan Document. Any waiver granted shall be limited to the specific circumstance expressly described in it, and shall not apply to any subsequent or other circumstance, whether similar or dissimilar, or give rise to, or evidence, any obligation or commitment to grant any further waiver. The Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of the Loan Documents merge into the Loan Documents.

12.8 Counterparts. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement.

12.9 Confidentiality. In handling any confidential information, Bank shall exercise the same degree of care that it exercises for its own proprietary information, but disclosure of information may be made: (a) to Bank s Subsidiaries or Affiliates (such Subsidiaries and Affiliates, together with Bank, collectively, **Bank Entities**); (b) to prospective transferees or purchasers of any interest in the Credit Extensions (provided, however, that any prospective transferee or purchaser shall have entered into an agreement containing provisions substantially the same as those in this Section); (c) as required by law, regulation, subpoena, or other order; (d) to Bank s regulators or as otherwise required in connection with Bank s examination or audit; (e) as Bank reasonably considers appropriate in exercising remedies under the Loan Documents; and (f) to third-party service providers of Bank so long as such service providers have executed a confidentiality agreement with Bank with terms no less restrictive than those contained herein. Confidential information does not include information that is either: (i) in the public domain or in Bank s possession when disclosed to Bank, or becomes part of the public domain (other than as a result of its disclosure by Bank in violation of this Agreement) after disclosure to Bank; or (ii) disclosed to Bank by a third party, if Bank does not know that the third party is prohibited from disclosing the information.

Bank Entities may use anonymous forms of confidential information for aggregate datasets, for analyses or reporting, and for any other uses not expressly prohibited in writing by Borrower. The provisions of the immediately preceding sentence shall survive termination of this Agreement.

12.10 Attorneys Fees, Costs and Expenses. In any action or proceeding between Borrower and Bank arising out of or relating to the Loan Documents, the prevailing party shall be entitled to recover its reasonable attorneys fees and other costs and expenses incurred, in addition to any other relief to which it may be entitled.

12.11 Electronic Execution of Documents. The words execution, signed, signature and words of like import in any Loan Document shall be deemed to include electronic signatures or the keeping of records in

electronic form, each of which shall be of the same legal effect, validity and enforceability as a manually executed signature or the use of a paper-based recordkeeping systems, as the case may be, to the extent and as provided for in any applicable law, including, without limitation, any state law based on the Uniform Electronic Transactions Act.

12.12 Captions. The headings used in this Agreement are for convenience only and shall not affect the interpretation of this Agreement.

12.13 Construction of Agreement. The parties mutually acknowledge that they and their attorneys have participated in the preparation and negotiation of this Agreement. In cases of uncertainty this Agreement shall be construed without regard to which of the parties caused the uncertainty to exist.

12.14 Relationship. The relationship of the parties to this Agreement is determined solely by the provisions of this Agreement. The parties do not intend to create any agency, partnership, joint venture, trust, fiduciary or other relationship with duties or incidents different from those of parties to an arm s-length contract.

12.15 Third Parties. Nothing in this Agreement, whether express or implied, is intended to: (a) confer any benefits, rights or remedies under or by reason of this Agreement on any persons other than the express parties to it and their respective permitted successors and assigns; (b) relieve or discharge the obligation or liability of any person not an express party to this Agreement; or (c) give any person not an express party to this Agreement any right of subrogation or action against any party to this Agreement.

12.16 Effect of Amendment and Restatement. Except as otherwise set forth herein, this Agreement is intended to and does completely amend and restate, without novation, the Prior Loan Agreement. All security interests granted under the Prior Loan Agreement are hereby confirmed and ratified and shall continue to secure all Obligations under this Agreement.

13 DEFINITIONS

13.1 Definitions. As used in the Loan Documents, the word shall is mandatory, the word may is permissive, the word or is not exclusive, the words includes and including are not limiting, the singular includes the plural, and numbers denoting amounts that are set off in brackets are negative. As used in this Agreement, the following capitalized terms have the following meanings:

Account is any account as defined in the Code with such additions to such term as may hereafter be made, and includes, without limitation, all accounts receivable and other sums owing to Borrower.

Account Debtor is any account debtor as defined in the Code with such additions to such term as may hereafter be made.

Affiliate is, with respect to any Person, each other Person that owns or controls directly or indirectly the Person, any Person that controls or is controlled by or is under common control with the Person, and each of that Person s senior executive officers, directors, partners and, for any Person that is a limited liability company, that Person s managers and members.

Agreement is defined in the preamble hereof.

Amortization Date means (i) if the Interest Only Extension Event has not occurred, November 1, 2015 and (ii) if the Interest Only Extension Event has occurred, at Borrower s election, May 1, 2016.

Bank is defined in the preamble hereof.

Bank Entities is defined in Section 12.9.

Bank Expenses are all audit fees and expenses, costs, and expenses (including reasonable attorneys fees and expenses) for preparing, amending, negotiating, administering, defending and enforcing the Loan Documents (including, without limitation, those incurred in connection with appeals or Insolvency Proceedings and those identified as Bank Expenses in Section 9.3 hereof) or otherwise incurred with respect to Borrower after the date hereof, but excluding those incurred in connection with the funding of the Term A Loan and Term B Loan.

Bank Services are any products, credit services, and/or financial accommodations previously, now, or hereafter provided to Borrower or any of its Subsidiaries by Bank or any Bank Affiliate, including, without limitation, any letters of credit, cash management services (including, without limitation, merchant services, direct deposit of payroll, business credit cards, and check cashing services), interest rate swap arrangements, and foreign exchange services as any such products or services may be identified in Bank s various agreements related thereto (each, a **Bank Services Agreement**).

Basic Rate is the per annum rate of interest (based on a year of 360 days) equal to the sum of (a) U.S. Treasury note yield to maturity for a term equal to the Treasury Note Maturity as reported in the Federal Reserve Statistical Release H.15-Selected Interest Rates under the heading U.S. Government Securities/Treasury Constant Maturities on the Effective Date, plus (b) the Loan Margin. (In the event Release H.15 is no longer published, Bank shall select a comparable publication to determine the U.S. Treasury note yield to maturity.)

Borrower is defined in the preamble hereof.

Borrower s Books are all Borrower s books and records including ledgers, federal and state tax returns, records regarding Borrower s assets or liabilities, the Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

Borrowing Resolutions are, with respect to any Person, those resolutions substantially in the form attached hereto as Exhibit B.

Business Day is any day that is not a Saturday, Sunday or a day on which Bank is closed.

Cash Equivalents means (a) marketable direct obligations issued or unconditionally guaranteed by the United States or any agency or any State thereof having maturities of not more than one (1) year from the date of acquisition; (b) commercial paper maturing no more than one (1) year after its creation and having the highest rating from either Standard & Poor s Ratings Group or Moody s Investors Service, Inc.; (c) Bank s certificates of deposit issued maturing no more than one (1) year after issue; and (d) money market funds at least ninety-five percent (95%) of the assets of which constitute Cash Equivalents of the kinds described in clauses (a) through (c) of this definition.

Claims is defined in Section 12.3.

Code is the Uniform Commercial Code, as the same may, from time to time, be enacted and in effect in the State of California; provided, that, to the extent that the Code is used to define any term herein or in any Loan Document and such term is defined differently in different Articles or Divisions of the Code, the definition of such term contained in Article or Division 9 shall govern; provided further, that in the event that, by reason of mandatory provisions of law, any or all of the attachment, perfection, or priority of, or remedies with respect to, Bank s Lien on any Collateral is governed by the Uniform Commercial Code in effect in a jurisdiction other than the State of California, the term **Code** shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies and for purposes of definitions relating to such provisions.

Collateral is any and all properties, rights and assets of Borrower described on Exhibit A.

Collateral Account is any Deposit Account, Securities Account, or Commodity Account.

Commodity Account is any commodity account as defined in the Code with such additions to such term as may hereafter be made.

Compliance Certificate is that certain certificate in the form attached hereto as Exhibit C.

Contingent Obligation is, for any Person, any direct or indirect liability, contingent or not, of that Person for (a) any indebtedness, lease, dividend, letter of credit or other obligation of another such as an obligation, in each case, directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (b) any obligations for undrawn letters of credit for the account of that Person; and (c) all obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect a Person against

fluctuation in interest rates, currency exchange rates or commodity prices; but Contingent Obligation does not include endorsements in the ordinary course of business. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it determined by the Person in good faith; but the amount may not exceed the maximum of the obligations under any guarantee or other support arrangement.

Control Agreement is any control agreement entered into among the depository institution at which Borrower maintains a Deposit Account or the securities intermediary or commodity intermediary at which Borrower maintains a Securities Account or a Commodity Account, Borrower, and Bank pursuant to which Bank obtains control (within the meaning of the Code) over such Deposit Account, Securities Account, or Commodity Account.

Copyrights are any and all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret.

Credit Extension is any Term Loan or any other extension of credit by Bank for Borrower s benefit under this Agreement.

Default Rate is defined in Section 2.3(b).

Deposit Account is any deposit account as defined in the Code with such additions to such term as may hereafter be made.

Designated Deposit Account is the multicurrency account denominated in Dollars, account number ******1957, maintained by Borrower with Bank.

Dollars, **dollars** or use of the sign **$** means only lawful money of the United States and not any other currency, regardless of whether that currency uses the $ sign to denote its currency or may be readily converted into lawful money of the United States.

Dollar Equivalent is, at any time, (a) with respect to any amount denominated in Dollars, such amount, and (b) with respect to any amount denominated in a Foreign Currency, the equivalent amount therefor in Dollars as determined by Bank at such time on the basis of the then-prevailing rate of exchange in San Francisco, California, for sales of the Foreign Currency for transfer to the country issuing such Foreign Currency.

Domestic Subsidiary means a Subsidiary organized under the laws of the United States or any state or territory thereof or the District of Columbia.

Effective Date is defined in the preamble hereof.

Equipment is all equipment as defined in the Code with such additions to such term as may hereafter be made, and includes without limitation all machinery, fixtures, goods, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing.

Equity Event is the receipt by Borrower on or after the Effective Date of unrestricted net cash proceeds of at least Fifty Million Dollars ($50,000,000) from the issuance and sale by Borrower of its equity securities (including in the form of subordinated convertible debt).

ERISA is the Employee Retirement Income Security Act of 1974, and its regulations.

Event of Default is defined in Section 8.

Exchange Act is the Securities Exchange Act of 1934, as amended.

Final Payment is a payment (in addition to and not a substitution for the regular monthly payments of principal plus accrued interest) due on the earliest to occur of (a) the Term Loan Maturity Date, or (b) the acceleration of any Term Loan, or (c) the prepayment of a Term Loan pursuant to Section 2.1.1(c), equal to the original principal amount of such Term Loan funded multiplied by the Final Payment Percentage.

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Final Payment Percentage is three percent (3.00%).

Foreign Currency means lawful money of a country other than the United States.

Foreign Subsidiary means any Subsidiary which is not a Domestic Subsidiary.

Funding Date is any date on which a Credit Extension is made to or for the account of Borrower which shall be a Business Day.

FX Contract is any foreign exchange contract by and between Borrower and Bank under which Borrower commits to purchase from or sell to Bank a specific amount of Foreign Currency on a specified date.

GAAP is generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other Person as may be approved by a significant segment of the accounting profession, that are applicable to the circumstances as of the date of determination.

General Intangibles is all general intangibles as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation, all Intellectual Property, claims, income and other tax refunds, security and other deposits, payment intangibles, contract rights, options to purchase or sell real or personal property, rights in all litigation presently or hereafter pending (whether in contract, tort or otherwise), insurance policies (including without limitation key man, property damage, and business interruption insurance), payments of insurance and rights to payment of any kind.

Governmental Approval is any consent, authorization, approval, order, license, franchise, permit, certificate, accreditation, registration, filing or notice, of, issued by, from or to, or other act by or in respect of, any Governmental Authority.

Governmental Authority is any nation or government, any state or other political subdivision thereof, any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative functions of or pertaining to government, any securities exchange and any self-regulatory organization.

Guarantor is any Person providing a Guaranty in favor of Bank.

Guaranty is any guarantee of all or any part of the Obligations, as the same may from time to time be amended, restated, modified or otherwise supplemented.

Indebtedness is (a) indebtedness for borrowed money or the deferred price of property or services, such as reimbursement and other obligations for surety bonds and letters of credit, (b) obligations evidenced by notes, bonds, debentures or similar instruments, (c) capital lease obligations, and (d) Contingent Obligations.

Indemnified Person is defined in Section 12.3.

Insolvency Proceeding is any proceeding by or against any Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

Intellectual Property means, with respect to any Person, all of such Person s right, title, and interest in and to the following:

(a) its Copyrights, Trademarks and Patents;

(b) any and all trade secrets and trade secret rights, including, without limitation, any rights to unpatented inventions, know-how, operating manuals;

(c) any and all source code;

(d) any and all design rights which may be available to such Person;

(e) any and all claims for damages by way of past, present and future infringement of any of the foregoing, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the Intellectual Property rights identified above; and

(f) all amendments, renewals and extensions of any of the Copyrights, Trademarks or Patents.

Interest Only Extension Event means (i) Borrower s achievement of the Equity Event or (ii) the occurrence of the Term B Draw Event prior to October 31, 2015.

Inventory is all inventory as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products, including without limitation such inventory as is temporarily out of Borrower s custody or possession or in transit and including any returned goods and any documents of title representing any of the above.

Investment is any beneficial ownership interest in any Person (including stock, partnership interest or other securities), and any loan, advance or capital contribution to any Person.

Key Person is Borrower s Chief Executive Officer, who is Jonathan Lim as of the Effective Date.

Letter of Credit is a standby or commercial letter of credit issued by Bank upon request of Borrower based upon an application, guarantee, indemnity, or similar agreement.

Lien is a claim, mortgage, deed of trust, levy, charge, pledge, security interest or other encumbrance of any kind, whether voluntarily incurred or arising by operation of law or otherwise against any property.

Loan Documents are, collectively, this Agreement and any schedules, exhibits, certificates, notices, and any other documents related to this Agreement, the Warrant, any Bank Services Agreement, any subordination agreement, any note, or notes or guaranties executed by Borrower or any Guarantor, and any other present or future agreement by Borrower and/or any Guarantor with or for the benefit of Bank in connection with this Agreement or Bank Services, all as amended, restated, or otherwise modified.

Loan Margin is seven hundred fifty (750) basis points.

Material Adverse Change is (a) a material impairment in the perfection or priority of Bank s Lien in the Collateral or in the value of such Collateral; (b) a material adverse change in the business, operations, or financial condition of Borrower; or (c) a material impairment of the prospect of repayment of any portion of the Obligations.

Obligations are Borrower s obligation to pay when due any debts, principal, interest, fees, Bank Expenses, and other amounts Borrower owes Bank now or later, whether under this Agreement, the other Loan Documents (other than the Warrant or other agreements related to equity securities of Borrower), or otherwise, including, without limitation, all obligations relating to letters of credit (including reimbursement obligations for drawn and undrawn letters of credit), cash management services, and foreign exchange contracts, if any, and including interest accruing after Insolvency Proceedings begin and debts, liabilities, or obligations of Borrower assigned to Bank, and the performance of Borrower s duties under the Loan Documents (other than the Warrant or other agreements related to equity securities of Borrower).

Operating Documents are, for any Person, such Person s formation documents, as certified by the Secretary of State (or equivalent agency) of such Person s jurisdiction of organization on a date that is no earlier than thirty (30) days prior to the Effective Date, and, (a) if such Person is a corporation, its bylaws in current form, (b) if such Person is a limited liability company, its limited liability company agreement (or similar agreement), and (c) if such Person is a partnership, its partnership agreement (or similar agreement), each of the foregoing with all current amendments or modifications thereto.

Patents means all patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same.

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Payment/Advance Form is that certain form attached hereto as Exhibit D.

Perfection Certificate is defined in Section 5.1.

Permitted Indebtedness is:

(a) Borrower s Indebtedness to Bank under this Agreement and the other Loan Documents;

(b) Indebtedness existing on the Effective Date and shown on the Perfection Certificate;

(c) Subordinated Debt;

(d) unsecured Indebtedness to trade creditors incurred in the ordinary course of business;

(e) Indebtedness incurred as a result of endorsing negotiable instruments received in the ordinary course of business;

(f) credit cards in the ordinary course of business in an aggregate amount not to exceed Five Hundred Thousand Dollars ($500,000);

(g) letters of credit in the ordinary course of business in connection with the leasing of real property in an aggregate amount not to exceed Five Hundred Thousand Dollars ($500,000);

(h) Indebtedness secured by Liens permitted under clauses (a) and (c) of the definition of Permitted Liens hereunder;

(i) other unsecured Indebtedness not otherwise permitted hereunder, in an aggregate amount not to exceed Two Hundred Thousand Dollars ($250,000) at any time; and

(g) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness (a) through (i) above, provided that the principal amount thereof is not increased or the terms thereof are not modified to impose more burdensome terms upon Borrower or its Subsidiary, as the case may be.

Permitted Investments are:

(a) Investments (including, without limitation, Subsidiaries) shown on the Perfection Certificate and existing on the Effective Date;

(b) (i) Investments consisting of Cash Equivalents, and (ii) any Investments permitted by Borrower s investment policy, as amended from time to time, provided that such investment policy (and any such amendment thereto) has been approved in writing by Bank;

(c) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of Borrower;

(d) Investments consisting of deposit accounts in which Bank has a perfected security interest;

(e) Investments accepted in connection with Transfers permitted by Section 7.1;

(f) Investments consisting of the creation of a Subsidiary for the purpose of consummating a merger transaction permitted by Section 7.3 or under Section 6.11 of this Agreement, which is otherwise a Permitted Investment;

(g) Investments (i) by Borrower in Subsidiaries not to exceed Three Hundred Fifty Thousand Dollars ($350,000) in the aggregate in any fiscal year and (ii) by Subsidiaries in other Subsidiaries or in Borrower;

(h) Investments consisting of (i) travel advances and employee relocation loans and other employee loans and advances in the ordinary course of business, and (ii) loans to employees, officers or directors relating to the purchase of equity securities of Borrower or its Subsidiaries pursuant to employee stock purchase plans or agreements approved by Borrower s Board of Directors;

(i) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of business;

(j) Investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers who are not Affiliates, in the ordinary course of business; provided that this paragraph (j) shall not apply to Investments of Borrower in any Subsidiary; and

(k) Investments in connection with joint ventures or strategic alliances or collaboration of Borrower or a Subsidiary consisting of the licensing of technology pursuant to license agreements permitted under this Agreement, the development of technology or the providing of technical support; provided that any cash invested in connection thereto shall not exceed Five Hundred Thousand Dollars ($500,000) in the aggregate in any fiscal year.

Permitted Liens are:

(a) Liens existing on the Effective Date and shown on the Perfection Certificate or arising under this Agreement and the other Loan Documents;

(b) Liens for taxes, fees, assessments or other government charges or levies, either not due and payable or being contested in good faith and for which Borrower maintains adequate reserves on its Books, provided that no notice of any such Lien has been filed or recorded under the Internal Revenue Code of 1986, as amended, and the Treasury Regulations adopted thereunder;

(c) purchase money Liens (i) on Equipment acquired or held by Borrower incurred for financing the acquisition of the Equipment securing no more than Two Million Five Hundred Thousand Dollars ($2,500,000) in the aggregate amount outstanding; provided, however, that Borrower shall give Bank notice of any acquisition securing more than Two Hundred Fifty Thousand Dollars ($250,000) within thirty (30) days of such acquisition; or (ii) existing on Equipment when acquired, if the Lien is confined to the property and improvements and the proceeds of the Equipment;

(d) Liens of carriers, warehousemen, suppliers, or other Persons that are possessory in nature arising in the ordinary course of business so long as such Liens attach only to Inventory, securing liabilities in the aggregate amount not to exceed One Hundred Thousand Dollars ($100,000) and which are not delinquent or remain payable without penalty or which are being contested in good faith and by appropriate proceedings which proceedings have the effect of preventing the forfeiture or sale of the property subject thereto;

(e) Liens to secure payment of workers compensation, employment insurance, old-age pensions, social security and other like obligations incurred in the ordinary course of business (other than Liens imposed by ERISA);

(f) Liens incurred in the extension, renewal or refinancing of the indebtedness secured by Liens described in (a) through (c); provided that any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness may not increase;

(g) leases or subleases of real property granted in the ordinary course of Borrower s business (or, if referring to another Person, in the ordinary course of such Person s business), and leases, subleases, non-exclusive licenses or sublicenses of personal property (other than Intellectual Property) granted in the ordinary course of Borrower s business (or, if referring to another Person, in the ordinary course of such Person s business), if the leases, subleases, licenses and sublicenses do not prohibit granting Bank a security interest therein;

(h) non-exclusive license of Intellectual Property granted to third parties in the ordinary course of business, and licenses of Intellectual Property that could not result in a legal transfer of title of the licensed property that may be exclusive in respects other than territory and that may be exclusive as to territory only as to discreet geographical areas outside of the United States;

(i) Liens arising from attachments or judgments, orders, or decrees in circumstances not constituting an Event of Default under Sections 8.4 and 8.7; and

(j) Liens in favor of other financial institutions arising in connection with Borrower s deposit and/or securities accounts held at such institutions, provided that Bank has a perfected security interest in the amounts held in such deposit and/or securities accounts.

Person is any individual, sole proprietorship, partnership, limited liability company, joint venture, company, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or government agency.

Prepayment Fee shall be an amount equal to (i) two percent (2.00%) of the outstanding principal balance of the Term Loan if the principal balance of the Term Loan is outstanding one (1) year or less after the Effective Date, or (ii) one percent (1.00%) of the outstanding principal balance of the Term Loan if the principal balance of the Term Loan is outstanding more than one (1) year after the Effective Date.

Prior Loan Agreement is defined in the recitals hereto.

Registered Organization is any registered organization as defined in the Code with such additions to such term as may hereafter be made.

Requirement of Law is as to any Person, the organizational or governing documents of such Person, and any law (statutory or common), treaty, rule or regulation or determination of an arbitrator or a court or other Governmental Authority, in each case applicable to or binding upon such Person or any of its property or to which such Person or any of its property is subject.

Responsible Officer is any of the Chief Executive Officer, President, Chief Financial Officer or Controller of Borrower.

Restricted License is any material license or other material agreement with respect to which Borrower is the licensee (a) that prohibits or otherwise restricts Borrower from granting a security interest in Borrower s interest in such license or agreement or any other property, or (b) for which a default under or termination of could interfere with the Bank s right to sell any Collateral.

SEC shall mean the Securities and Exchange Commission, any successor thereto, and any analogous Governmental Authority.

Securities Account is any securities account as defined in the Code with such additions to such term as may hereafter be made.

Subordinated Debt is indebtedness incurred by Borrower subordinated to all of Borrower s now or hereafter indebtedness to Bank (pursuant to a subordination, intercreditor, or other similar agreement in form and substance reasonably satisfactory to Bank entered into between Bank and the other creditor), on terms acceptable to Bank.

Subsidiary is, as to any Person, a corporation, partnership, limited liability company or other entity of which shares of stock or other ownership interests having ordinary voting power (other than stock or such other ownership interests having such power only by reason of the happening of a contingency) to elect a majority of the board of directors or other managers of such corporation, partnership or other entity are at the time owned, or the management of which is

otherwise controlled, directly or indirectly through one or more intermediaries, or both, by such Person. Unless the context otherwise requires, each reference to a Subsidiary herein shall be a reference to a Subsidiary of Borrower.

Term A Loan is a loan made by Bank pursuant to the terms of Section 2.1.1(a) hereof.

Term B Loan is a loan made by Bank pursuant to the terms of Section 2.1.1(a) hereof.

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Term B Draw Period is the period of time commencing from the later to occur of (X) September 30, 2014 and (Y) the occurrence of the Term B Draw Event through the earlier to occur of (a) September 30, 2015 or (b) an Event of Default which has occurred and is continuing.

Term B Draw Event means Bank s receipt of evidence, in form and substance satisfactory to Bank, of the initiation of the Phase 2a portion of the STARTRK-1 study for RXDX-101.

Term Loan is a loan made by Bank pursuant to the terms of Section 2.1.1 hereof.

Term Loan Maturity Date means (i) if the Interest Only Extension Event has not occurred, April 1, 2018 and (ii) if the Interest Only Extension Event has occurred, April 1, 2019.

Term Loan Payment is defined in Section 2.1.1(b).

Trademarks means any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Borrower connected with and symbolized by such trademarks.

Transfer is defined in Section 7.1.

Treasury Note Maturity is thirty six (36) months.

Warrant is that certain Warrant to Purchase Stock dated as of the Effective Date executed by Borrower in favor of Bank.

[***Signature page follows***]

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the Effective Date.

BORROWER:

IGNYTA, INC.

By /s/ Jacob Chacko
Name: Jacob Chacko
Title: Chief Financial Officer

BANK:

SILICON VALLEY BANK

By /s/ R. Michael White
Name: R. Michael White
Title: Managing Director

[*Signature page to Second Amended and Restated Loan and Security Agreement*]

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EXHIBIT A COLLATERAL DESCRIPTION

The Collateral consists of all of Borrower s right, title and interest in and to the following personal property:

All goods, Accounts (including health-care receivables), Equipment, Inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, General Intangibles (except as provided below), commercial tort claims, documents, instruments (including any promissory notes), chattel paper (whether tangible or electronic), cash, deposit accounts, fixtures, letters of credit rights (whether or not the letter of credit is evidenced by a writing), securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located; and

all Borrower s Books relating to the foregoing, and any and all claims, rights and interests in any of the above and all substitutions for, additions, attachments, accessories, accessions and improvements to and replacements, products, proceeds and insurance proceeds of any or all of the foregoing.

Notwithstanding the foregoing, the Collateral does not include more than 65% of the presently existing and hereafter arising issued and outstanding shares of capital stock owned by Borrower of any Foreign Subsidiary which shares entitle the holder thereof to vote for directors or any other matter, (b) any interest of Borrower as a lessee or sublessee under a real property lease; (c) rights held under a license or other agreement that are not assignable by their terms without the consent of the licensor thereof (but only to the extent such restriction on assignment is enforceable under applicable law); (d) any interest of Borrower as a lessee under an Equipment lease if Borrower is prohibited by the terms of such lease from granting a security interest in such lease or under which such an assignment or Lien would cause a default to occur under such lease (but only to the extent that such restriction on granting a security interest is enforceable under applicable law); provided, however, that upon termination of such prohibition, such interest shall immediately become Collateral without any action by Borrower or Bank or (e) any Intellectual Property; provided, however, the Collateral shall include all Accounts and all proceeds of Intellectual Property. If a judicial authority (including a U.S. Bankruptcy Court) would hold that a security interest in the underlying Intellectual Property is necessary to have a security interest in such Accounts and such property that are proceeds of Intellectual Property, then the Collateral shall automatically, and effective as of the Effective Date, include the Intellectual Property to the extent necessary to permit perfection of Bank s security interest in such Accounts and such other property of Borrower that are proceeds of the Intellectual Property.

Pursuant to the terms of a certain negative pledge arrangement with Bank, Borrower has agreed not to encumber any of its Intellectual Property without Bank s prior written consent.

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EXHIBIT B

CORPORATE BORROWING CERTIFICATE

BORROWER: **IGNYTA, INC.** **DATE:** September 30, 2014
BANK: **Silicon Valley Bank**

I hereby certify as follows, solely in my capacity as an officer of Borrower and not in my individual capacity, as of the date set forth above:

1. I am the Secretary, Assistant Secretary or other officer of Borrower. My title is as set forth below.

2. Borrower s exact legal name is set forth above. Borrower is a corporation existing under the laws of the State of Delaware.

3. Attached hereto are true, correct and complete copies of Borrower s Certificate of Incorporation (including amendments), as filed with the Secretary of State of the state in which Borrower is incorporated as set forth above. Such Certificate of Incorporation has not been amended, annulled, rescinded, revoked or supplemented, and remains in full force and effect as of the date hereof.

4. The following resolutions were duly and validly adopted by Borrower s Board of Directors at a duly held meeting of such directors (or pursuant to a unanimous written consent or other authorized corporate action). Such resolutions are in full force and effect as of the date hereof and have not been in any way modified, repealed, rescinded, amended or revoked, and Silicon Valley Bank (Bank) may rely on them until Bank receives written notice of revocation from Borrower.

RESOLVED, that **any one** of the following officers or employees of Borrower, whose names, titles and signatures are below, may act on behalf of Borrower:

Name	Title	Signature	Authorized to Add or Remove Signatories
			..
			..
			..
			..

RESOLVED FURTHER, that **any one** of the persons designated above with a checked box beside his or her name may, from time to time, add or remove any individuals to and from the above list of persons authorized to act on behalf of Borrower.

RESOLVED FURTHER, that such individuals may, on behalf of Borrower:

Borrow Money. Borrow money from Bank.

Execute Loan Documents. Execute any loan documents Bank requires.

Grant Security. Grant Bank a security interest in any of Borrower s assets.

Negotiate Items. Negotiate or discount all drafts, trade acceptances, promissory notes, or other indebtedness in which Borrower has an interest and receive cash or otherwise use the proceeds.

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Apply for Letters of Credit. Apply for letters of credit from Bank.

Enter Derivative Transactions. Execute spot or forward foreign exchange contracts, interest rate swap agreements, or other derivative transactions.

Issue Warrants. Issue warrants for Borrower s capital stock.

Further Acts. Designate other individuals to request advances, pay fees and costs and execute other documents or agreements (including documents or agreement that waive Borrower s right to a jury trial) they believe to be necessary to effect these resolutions.

RESOLVED FURTHER, that all acts authorized by the above resolutions and any prior acts relating thereto are ratified.

5. The persons listed above are Borrower s officers or employees with their titles and signatures shown next to their names.

By:
Name:
Title:

*** *If the Secretary, Assistant Secretary or other certifying officer executing above is designated by the resolutions set forth in paragraph 4 as one of the authorized signing officers, this Certificate must also be signed by a second authorized officer or director of Borrower.*

I, the _____ of Borrower, hereby certify as to paragraphs 1 through 5 above, solely in my capacity as an officer of Borrower and not in my individual capacity, as of the date set forth above.

By:
Name:
Title:

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EXHIBIT C

COMPLIANCE CERTIFICATE

TO: SILICON VALLEY BANK Date:
FROM: IGNYTA, INC.
The undersigned authorized officer of IGNYTA, INC. (Borrower), certifies that under the terms and conditions of the Second Amended and Restated Loan and Security Agreement between Borrower and Bank (the Agreement):

(1) Borrower is in complete compliance for the period ending _____ with all required covenants except as noted below; (2) there are no Events of Default; (3) all representations and warranties in the Agreement are true and correct in all material respects on this date except as noted below; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date; (4) Borrower, and each of its Subsidiaries, has timely filed all required tax returns and reports, and Borrower has timely paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower except as otherwise permitted pursuant to the terms of Section 5.8 of the Agreement; and (5) no Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Bank.

Attached are the required documents supporting the certification. The undersigned certifies that these are prepared in accordance with GAAP consistently applied from one period to the next except as explained in an accompanying letter or footnotes. The undersigned acknowledges that no borrowings may be requested at any time or date of determination that Borrower is not in compliance with any of the terms of the Agreement, and that compliance is determined not just at the date this certificate is delivered. Capitalized terms used but not otherwise defined herein shall have the meanings given them in the Agreement.

Please indicate compliance status by circling Yes/No under Complies column.

Reporting Covenants	**Required**	**Complies**
Monthly Compliance Certificate	Monthly within 30 days	Yes No
Quarterly financial statements	Quarterly within 45 days (Q1, Q2, Q3) (90 days for Q4)	Yes No
Annual financial statement (CPA Audited) + CC	FYE within 180 days	Yes No
Annual Board Approved Financial Projections	Earlier of 7 days after Board approval or 60 days after FYE	Yes No

Other Matters

Have there been any amendments of or other changes to the Operating Documents of Borrower or any of its Subsidiaries? If yes, provide copies of any such amendments or changes with this Compliance Certificate. Yes No

The following are the exceptions with respect to the certification above: (If no exceptions exist, state No exceptions to note.)

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IGNYTA, INC.

By:
Name:
Title:

BANK USE ONLY

Received by:

AUTHORIZED SIGNER

Date:

Verified:

AUTHORIZED SIGNER

Date:

Compliance Status: Yes No

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EXHIBIT D LOAN PAYMENT/ADVANCE REQUEST FORM

DEADLINE FOR SAME DAY PROCESSING IS NOON PACIFIC TIME*

Fax To: Date:

LOAN PAYMENT:

IGNYTA, INC.

From Account # To Account #
(Deposit Account #) (Loan Account #)

Principal $ and/or Interest $

Authorized Signature: Phone Number:
Print Name/Title:

LOAN ADVANCE:
Complete *Outgoing Wire Request* section below if all or a portion of the funds from this loan advance are for an outgoing wire.

From Account # To Account #
(Loan Account #) (Deposit Account #)

Amount of Advance $

All Borrower s representations and warranties in the Second Amended and Restated Loan and Security Agreement are true, correct and complete in all material respects on the date of the request for an advance; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date:

Authorized Signature: Phone Number:
Print Name/Title:

OUTGOING WIRE REQUEST:
Complete only if all or a portion of funds from the loan advance above is to be wired.

Deadline for same day processing is noon, Pacific Time

Beneficiary Name:	Amount of Wire: $
Beneficiary Bank:	Account Number:
City and State:	
Beneficiary Bank Transit (ABA) #:	Beneficiary Bank Code (Swift, Sort, Chip, etc.): **(For International Wire Only)**
Intermediary Bank:	Transit (ABA) #:
For Further Credit to:	
Special Instruction:	

By signing below, I (we) acknowledge and agree that my (our) funds transfer request shall be processed in accordance with and subject to the terms and conditions set forth in the agreements(s) covering funds transfer service(s), which agreements(s) were previously received and executed by me (us).

Authorized Signature:	2nd Signature (if required):
Print Name/Title:	Print Name/Title:
Telephone #:	Telephone #:

* Unless otherwise provided for an Advance bearing interest at LIBOR.

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IGNYTA, INC.

9,010,238 Shares of Common Stock

PROSPECTUS SUPPLEMENT NO. 4

Dated November 12, 2014