| SENESCO TECHNOLOGI | ES INC | | |
|--|--------------------------------------|-----------------------------------|--|
| Form 8-K | | | |
| September 10, 2012 | | | |
| UNITED STATES | | | |
| SECURITIES AND EXCH | HANGE COMMISSION | | |
| Washington, D.C. 20549 | | | |
| | | | |
| FORM 8-K | | | |
| CURRENT REPORT | | | |
| PURSUANT TO SECTION 13 OR 15(d) OF THE | | | |
| SECURITIES EXCHANG | SE ACT OF 1934 | | |
| Date of report (Date of earli | est event reported): <u>Septembe</u> | er 10, 2012 | |
| Senesco Technologies, Inc. | | | |
| (Exact Name of Registrant a | as Specified in Charter) | | |
| Delaware | 001-31326 | 84-1368850 | |
| (State or Other Jurisdiction of Incorporation) | | (IRS Employer Identification No.) | |

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| 721 Route 202-206, Suite 130, Bridgewater, NJ (Address of Principal Executive Offices) | 08807 (Zip Code) |
| (908) 864-4444 (Registrant's telephone number, | |
| including area code) | |
| Not applicable (Former Name or Forme | er Address, if Changed Since Last Report) |
| Check the appropriate box below if the Form 8-K registrant under any of the following provisions: | Is intended to simultaneously satisfy the filing obligation of the |
| "Written communications pursuant to Rule 425 u | ander the Securities Act (17 CFR 230.425). |
| "Soliciting material pursuant to Rule 14a-12 under | er 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 | t to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c)) |
| | |

Item 8.01

Other Events.

On September 10, 2012, Senesco Technologies, Inc. ("Senesco") issued a press release announcing that the combination of bortezomib (the active component of VELCADE® marketed by Millennium, The Takeda Oncology Company) and SNS01-T, the subject of Senesco's on-going multiple myeloma clinical study, performs significantly better than either treatment alone in mouse xenograft models.

Mice implanted in the flank with human myeloma RPMI 8226 cells were treated with SNS01-T (0.375 mg/Kg IV), one of two different dose levels of bortezomib (0.2, 0.5 mg/Kg IP) alone or in combination with SNS01-T (0.375 mg/Kg IV). SNS01-T and bortezomib were administered twice weekly for 6 weeks. The study used an inactive nanoparticle as the control. SNS01-T monotherapy achieved 59% tumor growth inhibition, which exceeded that of bortezomib alone at either the 0.2 mg/kg dose (22% inhibition) or at 0.5 mg/kg (39 % inhibition). However, the combination of SNS01-T with 0.5 mg/kg of bortezomib resulted in 89 % tumor inhibition which was significantly more effective than either SNS01-T or bortezomib alone.

The Company recently reported that the combination of SNS01-T with lenalidomide (the active component of REVLIMID® marketed by Celgene Corporation, also a leading treatment for multiple myeloma), strongly inhibited human multiple myeloma tumor growth during 6 weeks of treatment in mice and resulted in no regrowth of tumors after an additional 8 weeks without further treatment.

A copy of the press release is filed as Exhibit 99.1 hereto and incorporated herein by reference.

Item 9.01.

Financial Statements and Exhibits.

(d)

Exhibits.

Exhibit No. Description

99.1 Press Release of Senesco Technologies, Inc. dated September 10, 2012.

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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.

SENESCO TECHNOLOGIES, INC.

Dated: September 10, 2012 By: /s/ Leslie J. Browne, Ph.D.

Name: Leslie J. Browne, Ph.D.

Title: President and Chief Executive Officer