Team Progress Updates

SU2C-Farrah Fawcett Foundation Human Papillomavirus (HPV) Research Team:

"Therapeutic CD8 Vaccines Against Conserved E7 HPV Epitopes Identified by MS"

Once a cancer-causing type of HPV has established itself, immune cells called cytolytic T lymphocytes (CTLs) are required to eradicate the virus-infected precancerous or cancerous cells. CTLs recognize "tags" on the surface of other cells. More specifically, molecules on the CTLs called T cell receptors (TCRs) detect cell tags called epitopes. Using their TCRs, CTLs can distinguish between normal and abnormal cells with great specificity.

Members of the team have developed a novel method to find epitopes on cancer cells that are entirely specific for the cancer and hence not found on normal cells in the body. CTLs in the patient's body can be programmed by vaccination to detect these epitopes and then attack and kill the cancer cells to which they are attached. One epitope CTL target that the team has already identified has been incorporated into a potential therapeutic vaccine. The team is testing this vaccine in patients in a clinical trial as part of the support received from Stand Up To Cancer.

The team has reported the following progress:

June 2017:

- Techniques to analyze patient samples have been developed. These techniques will facilitate identification of different cells from the patient tissue, including immune cells, and analyses of proteins from patient blood.

December 2016:

- The clinical trial of the vaccine has opened. Patients with either recurrent and/or metastatic head and neck, cervical or anal cancer can enroll.

December 2015:

- The Team has acquired state-of-the-art new equipment and is optimizing and refining the sensitivity for detecting specific flags on cells associated with HPV cancers. Detection sensitivity is vital to select the most suitable patient for the trial and for subsequent evaluation of how the vaccine therapy is working.

December 2014:

- The Team has developed a protocol for their vaccination clinical trial.