Technology Overview

For therapeutic vaccination or cure efforts, T-cell mediated cellular immunity is critical. In order to mount an effective T-cell response, the foreign (exogenous) antigen must be recognized by the immune system and presented to T-cells. Fred Hutch researchers have elucidated the critical role of the HLA-F and MHC-1 open conformer processing pathway in recognizing cancer and viral antigens. By understanding a patient’s HLA fingerprint, personalized peptide vectors can be generated to elicit a potent T-cell mediated adaptive immune response to kill target cells.

APPLICATIONS

- Compositions and methods for personalized T-cell vaccines for cancer and infectious disease indications

ADVANTAGES

- Platform can be manipulated and personalized in vitro at low cost
- Platform can be applied to cancer, viral, and tumor neoantigens
- Peptide vaccines are easy to handle, store, and transport
- Lower cost of goods as compared to subunit or whole protein vaccines

Market Overview

The global vaccine market overall is predicted to double to approximately $58 billion by 2016 due to an increased prevalence of disease, increases in government sponsored programs and application of novel technologies. The global market for cancer vaccines was $4.5 billion in 2013 with a CAGR of 1.3% for the period of 2014-2019.

Investigator Overview

Daniel Geraghty, PhD, Clinical Research Division