Fred Hutch Cancer Center

Targeting MAGE-A1 using high-affinity native TCRs

Business Opportunity

Exclusive license
Sponsored research

Technology Type

Therapeutic
Immuno-Oncology
Cell Therapy

State of Development

IND enabling

Patent Information

US and Foreign Patent Applications Pending

Investigator

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Tech ID

17-079

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Brief Description

High-affinity MAGE-A1-specific TCR for the treatment of multiple myeloma and solid tumors

Technology Overview

Expression of MAGE-A1 is strictly limited to testis and a variety of tumor tissues. Specifically, MAGE-A1 is expressed in about 50% of multiple myeloma, up to 60% in triple negative breast cancer, 30% in non-small cell lung cancer and up to 50% in ovarian cancer cells. Prof. Aude Chapuis' group at Fred Hutch has developed a high-affinity, HLA-A*0201 restricted, MAGE-A1-specific TCR for the treatment of multiple myeloma and solid tumors. Moreover, the researchers reported enhanced tumor killing by co-opting both CD4+ and CD8+ T cells with Ag-specific TCR along with CD8αβ co-receptor. Preclinical validation of MAGE-A1 TCRs displayed strong cytotoxicity towards MAGE-A1+ cell lines and activity in both CD4 and CD8 T cells. IND enabling work and vector (LVV) manufacturing has been completed.

Applications

- Treatment or relapse prophylaxis for multiple myeloma, TNBC, NSCLC, melanoma (including basalioma), ovarian, colon cancer.

Advantages

- Selected for high-affinity.
- Transduction of CD8αβ co-receptor utilizes both CD4+ and CD8+ cells