Tuning T Cell Sensitivity and Specificity for Cancer Immunotherapy

Invention: The technology describes a method to modulate T cell sensitivity and responsiveness to peptides embedded within class I and class II major histocompatibility complex molecules (pMHC). This technology is envisioned to modulate the response of T cells against tumor antigens, therefore it represents a potential application in cancer immunotherapy.

Background: CD4 T cells orchestrate immune responses to vaccines, microbial infections, and tumors via their effector and regulatory functions. Considerable interest is thus focused on harnessing these cells and their functions for therapeutic purposes by ectopically expressing engineered receptor molecules that can redirect their antigen specificity and/or increase their sensitivity.

Applications:
- Cancer immunotherapy
- Research tools

Advantages:
- Tunes the sensitivity of a patient’s T-cells against certain tumor antigens
- Modulates the immune responsiveness against a given antigen

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