

Prospective Isolation Of Tumor-Reactive Cytotoxic CD4+ T Cells For Bladder Cancer Therapy

Published date: Dec. 1, 2018

Technology description

Researchers at UCSF, using single-cell RNA sequencing and T cell receptor sequencing of patient-derived bladder tumor cells, have identified a series of gene expression markers and specific T cell receptors specific to infiltrating bladder tumor resident CD4+ T cells. Utilizing these cell surface markers, they isolated this novel CD4+ T cell population, expanded it ex-vivo, and confirmed its cytotoxic potential.

UCSF researchers have discovered a method for the isolation and expansion ex vivo of an endogenous population of bladder tumor-reactive cytotoxic CD4+ T cells that can be used to specifically and potentially treat bladder cancer.

Market Potential

Bladder cancer is one of the most common types of cancers in the US, with approximately 80,000 new cases diagnosed in 2018 alone. Current treatments include checkpoint immunotherapy, a broad method of inhibiting a mechanism by which cancer cells evade the immune system.

Utilizing a novel combination of cell-surface markers, this method of isolating and expanding endogenous tumor reactive CD4+ T cells provides a more specific immune response towards the treatment of bladder cancer.

Advantages

Identifies a **novel, bladder tumor infiltrating population of T cells**

More **specific to bladder cancer** than other immunotherapy treatments

Can be expanded ex vivo and has shown to **possess cytotoxic activity towards tumor cells**

May have **fewer regulatory challenges** over engineered chimeric antigen receptor (CAR) approaches due to the endogenous nature of these cytotoxic CD4+ T cells

These **identified markers and T cell receptor sequences could be used to transduce T cells** to specifically target bladder cancer

Identified markers and T cell receptors are **potential targets for pharmacological manipulation** for enhancement of activity

Institution

[University of California, San Francisco](#)

Inventors

[David Oh](#)

[Chien-Chun Stev Pai](#)

[Chun Jimmie Ye](#)

[Lawrence Fong](#)

[Serena Kwek MacPhee](#)

联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com