LJI Available Technologies

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NFKbid Overexpression Supports the Expansion and Survival of CD8⁺ Tumor-Infiltrating Lymphocytes

Researchers at the La Jolla Institute for Immunology have discovered that engineering tumor-reactive CD8⁺ T cells to overexpress NFKbid significantly increases the numbers of adoptively transferred T cells present in a tumor in a mouse model. As such, they have engineered CAR-T cells to overexpress NFKbid.

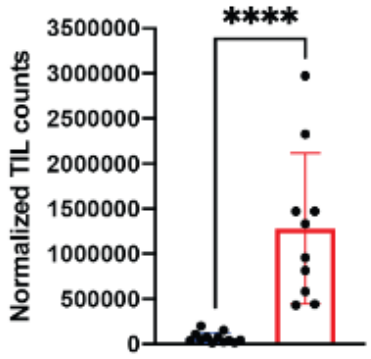
Adoptively transferred T cells, including CAR-T cell therapy or autologous patient T cell therapy, are a promising way to treat cancer. However, these adoptively transferred T cells tend to die off either before, or shortly after, reaching their tumor target. As such, these types of therapies require a very large number of cells at the transfer stage, outlining an important limitation of these therapies. Therefore, it would be beneficial to find a way to keep these adoptively transferred T cells alive and active for a longer period of time after transfer. Researchers at LJI have found a way to do just that.

The researchers have discovered that, by overexpressing NFKbid in engineered tumor-reactive CD8⁺ T cells, they can increase the number of cells present in a tumor in a mouse model by approximately 100-fold. This technology has the potential to allow for the effective treatment of cancer patients with much smaller numbers of adoptively transferred T cells.

ADVANTAGES:

- Increases the number of cells present in a tumor mouse model by ~100-fold
- Keeps adoptively transferred cells alive and active for longer periods of time
- Allows for effective treatment of cancer patients with smaller numbers of adoptively transferred cells

NFKbid overexpression allows for the expansion and survival of adoptively transferred CD8⁺ tumor-infiltrating lymphocytes



NFKbid (red) supports TIL expansion compared to control (blue)

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