

## Chimeric Antigen Receptor (CAR)

A chimeric antigen receptor (CAR) construct specific for a T-cell receptor (TCR) beta-chain variable region subunit of a T cell.

### Proposed use

For use in immunotherapy, for treating or preventing cancer, autoimmune disease or any disease characterized by the presence of pathogenic T cells.

### Problem addressed

Current CAR-based immunotherapies eliminate either the whole or 50% of healthy T cells, thus rendering patients profoundly immunosuppressed. Our anti-TCRVbeta CAR immunotherapy would leave >90% of the T cell immunity intact, thus reducing considerably the probability of life-threatening infections.

### Technology overview

Within a healthy T cell population, each cell expresses 1 of 22 different types of TCRVbeta chains. Pathological T cells express the same TCRVbeta which is only expressed in <10% of normal T cells.

We have developed anti-TCRVbeta Chimeric Antigen Receptors which can target pathological T cells in a highly selective manner, leaving >90% of the patients T cells and T cell-dependent immunity intact.

### Intellectual property information

A PCT application was filed in August 2023. The priority date is August 2022.

### Link to published paper(s)

<https://www.frontiersin.org/articles/10.3389/fimmu.2023.1118681/full>

### Inventor information

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### Benefits

- Targets and selectively kills pathogenic T cells.
- Leaves >90% of healthy T cells intact.
- Leaves T cell dependent immunity intact.
- Reduces probability of life-threatening infections.

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