



Promab Biotechnologies' CAR-T new product development programs are being designed for pre-clinical and future clinical applications.

CAR-T cells can be used for:

1. Compound screening
2. Antibody screening
3. Co-stimulatory and activation domain comparison
4. Personalized medicine and donor variations for CAR-T screening
5. Checkpoint inhibitors
6. Safety switches and regulators of CAR-T functions
7. Pre-clinical in vivo models
8. Treg and T memory cells in CAR-T setting
9. CAR-T signaling, tumor microenvironment
10. Proof of concept studies for clinical trials

The structure of CAR from Promab:

The CD19 protein is overexpressed in hematological cancers. CD19 scFv CAR-T cells can be used to target CD19 antigen.

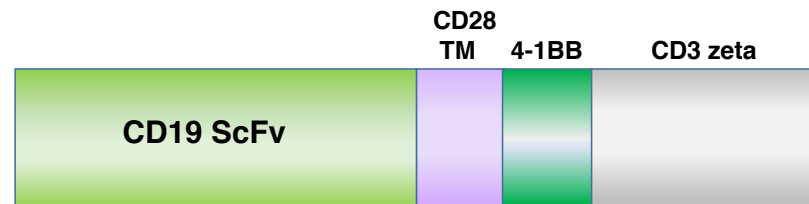


Figure 1. CAR-T cells expressing the above constructs are available from Promab targeting CD19 scFv antigen. ScFv, single chain variable fragment. These CAR-T cells are generated with CD19 scFv-CD28-4-1BB-CD3 ζ construct.

To date Promab generated 2nd generation CAR and CAR controls as shown in Figure 1, CAR-T cells and CAR-Natural Killer (NK) effector cells against cancer target cells that show excellent functionality, including dose dependent and target cell-specific cytotoxic activity.

These CAR-T cells can be tested with target cells in cytotoxic assays and used for testing modulators of immune checkpoint inhibitors (PD-1, CTLA-4 pathways) or activators of immune response, small molecules affecting T cell or T reg activity.

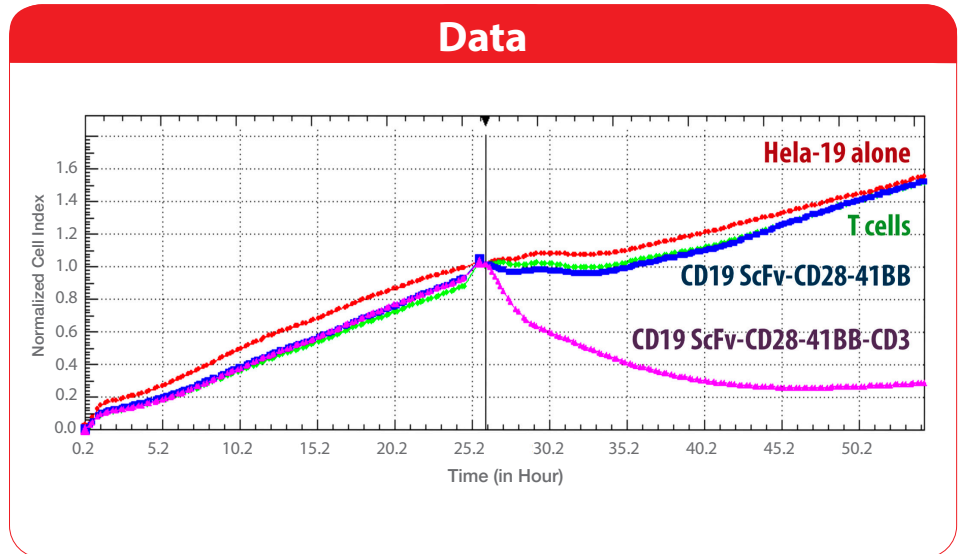


Figure 2. CD19scFv-CD28-4-1BB-CD3 ζ cells show a significant cytotoxic effect on target cells over-expressing the CD19 antigen. Effector:Target ratio of 10:1 CD19scFv-CD28-4-1BB-CD3 ζ had comparable activity as CD19scFv-CD28-4-1BB-CD3 ζ construct.