Docket #: S23-347

Fully Human CD19-Targeted CAR T Cells for Cancer Treatment

Stanford scientists have developed fully human CD19-targeted CAR T cells designed to overcome the limitations of current CAR T cell therapies, particularly in treating low CD19 density blood cancers. This innovative technology aims to enhance the efficacy and persistence of CAR T cell treatments.

Current CD19 CAR T cell therapies face significant challenges, including anti-murine immune responses and antigen remodeling/heterogeneity. The innovative CARs utilize a fully human CD19 binder, in combination with a hinge-transmembrane domain and a costimulatory domain that are different from currently known CD19 CAR, enhancing recognition of low antigen density tumors and improving persistence in vivo.

This approach helps minimize the risk of immune rejection and has shown superior efficacy compared to clinical benchmarks in preclinical models, offering a promising advancement in cancer treatment.

Stage of Development
Pre-clinical

Applications

- Treating low CD19 density blood cancers where current CAR T cell therapies are insufficient.
- Re-infusion for patients who have undergone previous CAR T cell therapy

Advantages

- Enhanced recognition of low antigen density tumors.

- Reduced immunogenicity due to fully human components
- Enhanced *in vivo* persistence

Patents

- Published Application: WO2026169775

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