Autologous CD19CAR-CD28-CD3zeta-EGFRt-expressing Tcm-enriched T Cells

National Cancer Institute

Source

National Cancer Institute. Autologous CD19CAR-CD28-CD3zeta-EGFRt-expressing Tcm-enriched T Cells. NCI Thesaurus. Code C105614.

A preparation of genetically modified autologous central memory (Tcm) enriched T-cells transduced with a replication incompetent lentiviral vector expressing a chimeric antigen receptor (CAR), containing a CD28 signaling domain fused to both CD3 zeta, which targets the CD19 antigen, and a truncated form of the human epidermal growth factor receptor (EGFRt), with potential immunostimulating and antineoplastic activities. Upon intravenous administration, autologous CD19CAR-CD28-CD3zeta-EGFRt-expressing Tcm-enriched T cells are directed to CD19-expressing tumor cells, thereby inducing a selective toxicity in CD19-expressing tumor cells. CD19 antigen is a B-cell specific cell surface antigen expressed in all B-cell lineage malignancies. Devoid of both ligand binding domains and tyrosine kinase activity, EGFRt both facilitates in vivo detection of the administered T-cells and can promote elimination of those cells upon a cetuximab-induced antibody dependent cellular cytotoxicity response. The costimulatory signaling domain enhances proliferation of T cells and antitumor activity.