Autologous CD19 CAR+ EGFRt + CD4+ and CD8+ T Cells

National Cancer Institute

Source

National Cancer Institute. Autologous CD19 CAR+ EGFRt + CD4+ and CD8+ T Cells. NCI Thesaurus. Code C137866.

A preparation of a defined ratio of CD4+ and CD8+ autologous T-lymphocytes transduced with a lentiviral vector expressing a chimeric antigen receptor (CAR) containing an anti-CD19 single chain variable fragment (scFv), derived from the CD19-specific murine immunoglobulin (Ig) G1 monoclonal antibody FMC63, fused to the signaling domain of CD28, the zeta chain of the TCR/CD3 complex (CD3-zeta), and a truncated form of the human epidermal growth factor receptor (EGFRt), with potential immunostimulating and antineoplastic activities. Upon intravenous administration, the autologous CD19 CAR+ EGFRt + CD4+ and CD8+ T-cells are directed to and induce 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, the expressed EGFRt both facilitates in vivo detection of the administered, transduced T-cells and can promote elimination of those cells through a cetuximab-induced antibody dependent cellular cytotoxicity (ADCC) response.