Autologous Anti-CD19 CAR TCR-zeta/4-1BB-transduced T Lymphocytes BinD19

National Cancer Institute

Source

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Autologous T-lymphocytes that have been transduced with a lentiviral vector to express a T-cell receptor (TCR) consisting of a single chain variable fragment (scFv) of anti-CD19 coupled to the co-stimulatory molecule 4-1BB (CD137) and to the cytoplasmic portion of the zeta chain of the human T-cell receptor (CD3zeta), with potential immunostimulating and antineoplastic activities. Upon transfusion, the autologous anti-CD19 CAR TCR-zeta/4-1BB-transduced T-lymphocytes BinD19 target and bind to CD19-expressing neoplastic B-cells. This results in a cytotoxic T-lymphocyte (CTL) response against CD19-expressing tumor cells, the release of cytotoxic molecules and tumor cell lysis. CD19, cluster of differentiation 19, is a B-cell-specific cell surface antigen overexpressed in B-cell lineage tumors. Incorporation of the costimulatory signaling domains increases human T-cell function, expansion, and survival.