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Anti-CD19-CD20-CAR-CD3zeta-4-1BB-expressing Autologous T-lymphocytes

National Cancer Institute

Source

National Cancer Institute. *Anti-CD19-CD20-CAR-CD3zeta-4-1BB-expressing Autologous T-lymphocytes*. NCI Thesaurus. Code C143156.

Autologous T-lymphocytes that have been transduced with a lentiviral vector to express a chimeric antigen receptor (CAR) consisting of a single chain variable fragment (scFv) of anti-CD19 in tandem with an anti-CD20 scFv, and coupled to the cytoplasmic portion of the zeta chain of the human T-cell receptor (CD3zeta), and the co-stimulatory molecule 4-1BB (CD137), with potential immunostimulating and antineoplastic activities. Upon transfusion, anti-CD19-CD20-CAR-CD3zeta-4-1BB-expressing autologous T-lymphocytes recognize and direct T-cells to CD19- or CD20-expressing tumor B-cells. This results in a cytotoxic T-lymphocyte (CTL) response against CD19- or CD20-expressing tumor cells, and causes tumor cell lysis. Both CD19 and CD20 are B-cell-specific cell surface antigens overexpressed in B-cell lineage malignancies.