Anti-CD19-CAR Retroviral Vector-Transduced Autologous T Cells

National Cancer Institute

Source

National Cancer Institute. Anti-CD19-CAR Retroviral Vector-Transduced Autologous T Cells. NCI Thesaurus. Code C88055.

A preparation of autologous peripheral blood T-lymphocytes (PBTL) that have been genetically modified to express a chimeric antigen receptor (CAR) consisting of an anti-CD19 scFv (single chain variable fragment) coupled to the costimulatory signaling domain CD28 and the zeta chain of the T-cell receptor (TCR)/CD3 complex (CD3 zeta), with potential immunostimulating and antineoplastic activities. Upon administration, anti-CD19-CAR retroviral vector-transduced autologous T cells direct the T-lymphocytes to CD19-expressing tumor cells, thereby inducing selective toxicity in CD19-expressing tumor cells. CD19 antigen is a B-cell specific cell surface antigen expressed in all B-cell lineage malignancies. CD3 zeta is one of several membrane-bound polypeptides found in the TCR/CD3 complex, which regulates both the assembly of complete TCR complexes and their expression on the cell surface. CD28 is essential for CD4+ T-cell proliferation, interleukin-2 production, and T-helper type-2 (Th2) development.