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# Autologous PD1-inhibiting Anti-CD19 4-1BB CAR T Cells

National Cancer Institute

## Source

National Cancer Institute. *Autologous PD1-inhibiting Anti-CD19 4-1BB CAR T Cells*. NCI Thesaurus. Code C151944.

A preparation of autologous T-lymphocytes that are transduced with a lentiviral vector encoding a chimeric antigen receptor (CAR) specific for the tumor-associated antigen (TAA) cluster of differentiation 19 (CD19) linked to the intracellular signaling domain of 4-1BB (CD137) that also encodes a cell-intrinsic programmed cell death 1 (PD1; PDCD1; CD279; programmed death-1) short/small hairpin RNA (shRNA)-expressing cassette, with potential immunomodulating and antineoplastic activities. Upon administration of the autologous PD1-inhibiting anti-CD19 4-1BB CAR T-cells, these cells target, bind 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. The shRNA silences expression of PD1, abrogates T-cell exhaustion, increases CAR T-cell activity and enhances tumor cytotoxicity. Expression of PD-1, an inhibitory receptor expressed on activated T-cells, plays a key role in CTL suppression, T-cell exhaustion and CTL apoptosis.