EGFR CAR-CD3zeta-4-1BB-expressing Autologous T-Lymphocytes

National Cancer Institute

Source

National Cancer Institute. EGFR CAR-CD3zeta-4-1BB-expressing Autologous T-Lymphocytes. NCI Thesaurus. Code C107191.

Autologous human T-lymphocytes transduced with a retroviral vector encoding an anti-epidermal growth factor receptor (EGFR) chimeric T cell receptor (chimeric antigen receptor or CAR) gene coupled to the signaling domains from both CD3 zeta and CD137 (4-1BB), with potential immunostimulatory and antineoplastic activities. Upon administration, the chimeric EGFR antigen receptor-modified autologous T lymphocytes bind to the EGFR antigen on tumor cell surfaces; subsequently, EGFR-expressing tumor cells may be lysed. Following binding to EGFR, the 4-1BB co-stimulatory molecule signaling domain enhances both activation and signaling. Inclusion of the 4-1BB signaling domain may also increase the antitumor activity when compared to the inclusion of the CD3-zeta chain alone. EGFR, a receptor tyrosine kinase (RTK) overexpressed by a variety of cancer cell types, plays key roles in tumor cell proliferation and tumor angiogenesis.