Anti-CEA IgCD28TCR-Transduced Autologous T Cells

National Cancer Institute

Source

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A population of autologous tumor infiltrating lymphocytes (TIL) transduced with a retroviral vector encoding the chimeric gene IgCD28TCR with potential immunostimulating and antineoplastic activities. The chimeric IgCD28TCR gene consists of portions of CD28, the zeta chain of the T-cell receptor (TCRzeta), and a single chain antibody domain (sFv) specific for the tumor-associated antigen CEA. Upon administration, these gene-modified TIL bind to tumor cells expressing CEA, which may result in activation and proliferation of TIL and an enhanced cytotoxic T-lymphocyte (CTL) response against CEA-expressing tumor cells. CEA may be overexpressed in various gastrointestinal and breast cancers. CD28, a T-cell surface-associated co-stimulatory molecule, is required for full T-cell activation, proliferation, and survival; expression of the CD28 fragment in this chimeric gene construct may impede activation-induced cell death (AICD) of TIL.