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Autologous Gamma-retroviral MSGV1 139 scFv EGFRvIII CAR Gene-modified T Cells

National Cancer Institute

Source

National Cancer Institute. *Autologous Gamma-retroviral MSGV1 139 scFv EGFRvIII CAR Gene-modified T Cells*. NCI Thesaurus. Code C143060.

A preparation of autologous T-lymphocytes transduced with the gamma retroviral vector MSGV1 expressing a chimeric T-cell antigen receptor (CAR) consisting of a single-chain variable fragment (scFv) from a specific antibody clone (mAb139) that targets a mutant form of epidermal growth factor receptor (EGFR) known as variant III (EGFRvIII; EGFR-vIII), with potential antineoplastic activity. Upon intratumoral administration, the gamma-retroviral MSGV1 139 scFv EGFRvIII CAR gene-modified T-cells specifically target and bind to tumor cells expressing EGFRvIII, leading to selective cytotoxicity in EGFRvIII-expressing tumor cells. EGFRvIII, a tumor-associated antigen (TAA) encoded by an in-frame deletion of exons 2-7 in the EGFR gene, is specifically overexpressed by a subset of tumor cells and is not expressed in normal, healthy cells. It plays a key role in tumor cell proliferation, tumor angiogenesis and radio- and chemoresistance.