Autologous MAGE-A10-specific HLA-A2-restricted TCR c796 Gene-engineered Lymphocytes

National Cancer Institute

Source

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Human autologous T-lymphocytes transduced with a retroviral vector encoding a high-affinity T-cell receptor (TCR) specific for human leukocyte antigen (HLA)-A2-restricted, human melanoma-associated antigen A10 (MAGE-A10), clone 796 (c796), with potential antineoplastic activity. Peripheral blood mononuclear cells (PBMCs) are isolated from a patient, transduced with an anti-MAGE-A10(c796)-HLA-A2 restricted TCR, expanded ex vivo, and reintroduced into the HLA-A2-positive patient. Upon reintroduction, the autologous MAGE-A10-specific, HLA-A2-restricted TCR c796 gene-engineered lymphocytes bind to tumor cells expressing the MAGE-A10 antigen, which may induce cell death in and halt the growth of MAGE-A10-expressing cancer cells. The tumor-associated antigen MAGE-A10, a member of the MAGE-A family of cancer/testis tumor-associated antigens (CT-TAAs), is overexpressed by a variety of cancer cell types.