Autologous HPV-16/18 E6/E7-specific TGF-beta-resistant T Lymphocytes

National Cancer Institute

Source

National Cancer Institute. Autologous HPV-16/18 E6/E7-specific TGF-beta-resistant T Lymphocytes. NCI Thesaurus. Code C121537.

A preparation of autologous transforming growth factor-beta (TGF-beta)-resistant cytotoxic T-lymphocytes (CTL) reactive to human papilloma virus (HPV) types 16 and 18 E6/E7 antigens, with potential antineoplastic activity. Autologous T-lymphocytes from a HPV-positive cancer patient are exposed to and stimulated with dendritic cells (DCs) loaded with the HPV-16/18 proteins E6 and E7. In turn, the HPV-16/18 E6/E7-specific T-lymphocytes are transduced with a retroviral vector expressing a dominant-negative mutant of type II transforming growth factor (TGF)-beta receptor, which blocks signaling mediated by all three TGF-beta isoforms. Following re-administration to patients with HPV-positive tumors, the HPV-16/18 E6/E7-specific TGF-beta-resistant T lymphocytes target HPV16/18 E6/E7-positive cells, which may result in a specific cytotoxic T-lymphocyte (CTL) response, followed by cell lysis and the inhibition of tumor cell proliferation. Tumors expressing TGF-beta inhibit T-lymphocyte activation and expansion.