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DNR-expressing Nasopharyngeal Carcinoma-specific Cytotoxic T-Lymphocytes

National Cancer Institute

Source

National Cancer Institute. *DNR-expressing Nasopharyngeal Carcinoma-specific Cytotoxic T-Lymphocytes*. NCI Thesaurus. Code C114378.

A preparation of autologous, dominant-negative receptor (DNR)-expressing nasopharyngeal carcinoma (NPC)-specific cytotoxic T-lymphocytes (CTLs), with potential antineoplastic activity. The DNR-expressing NPC-specific CTLs specifically target Epstein-Barr virus (EBV) nuclear antigen 1 (EBNA1), latent membrane proteins (LMP) and BamHIA rightward frame 1 (BARF1), and are transduced with a retroviral vector expressing DNR, a dominant-negative form of the transforming growth factor beta (TGFβ) receptor, which blocks TGF-beta-mediated signaling. Upon administration, the CTLs recognize and target NPC cells, which may result in both CTL-mediated cell lysis and the inhibition of tumor cell proliferation. Tumor-expressed TGF-beta inhibits T-lymphocyte activation and expansion; resistance to TGF-beta allows for optimal CTL activity. EBV infection plays a key role in NPC tumorigenesis.