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IL-12-expressing HSV-1 NSC 733972

National Cancer Institute

Source

National Cancer Institute. *IL-12-expressing HSV-1 NSC 733972*. NCI Thesaurus. Code C114294.

A genetically engineered, replication selective, infected cell protein (ICP) 34.5 gene-deleted, oncolytic human simplex virus type 1 (HSV-1) expressing the human immunostimulating cytokine interleukin-12 (IL-12), with potential antineoplastic activity. Upon intratumoral administration of HSV-1 expressing IL-12 NSC 733972, the IL-12-expressing HSV-1 preferentially infects and replicates in tumor cells of neuronal origin causing viral-mediated tumor cell lysis. The released virus particles, in turn, infect and replicate in neighboring tumor cells. In addition, the IL-12-expressing HSV-1 promotes the secretion of IL-12 by the tumor cells. IL-12 promotes the activation of natural killer cells, which induces both the secretion of interferon-gamma and a cytotoxic T-lymphocyte (CTL) response against the tumor cells. This results in both immune-mediated tumor cell death and further inhibition of tumor cell proliferation. Deletion of the gene encoding for ICP34.5 imparts tumor selectivity by preventing replication in healthy cells.