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Oncolytic HSV-1 C134

National Cancer Institute

Source

National Cancer Institute. *Oncolytic HSV-1 C134*. NCI Thesaurus. Code C162635.

A neurovirulent, oncolytic second-generation, replication-competent, recombinant and genetically-engineered herpes simplex virus type 1 (HSV-1) where the gene for ICP34.5 has been deleted and the gene encoding the human cytomegalovirus (HCMV), protein kinase R (PKR) evasion protein IRS1, with potential oncolytic and immunostimulating activities. Upon intratumoral administration, oncolytic HSV-1 C134 specifically infects and replicates within the rapidly dividing, glioma cells, thereby directly lysing tumor cells. The released virus particles, in turn, infect and replicate in neighboring tumor cells, thereby further killing tumor cells. Tumor antigens released from the lysed tumor cells also activate the immune system to induce a tumor-specific systemic immune and cytotoxic T-lymphocyte (CTL) response, thereby killing nearby non-infected tumor cells. Deletion of the gene encoding for ICP34.5 imparts tumor selectivity by preventing replication in healthy cells. IRS1 expression allows the virus to replicate within tumors but limits viral spread.