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Recombinant Oncolytic Poliovirus PVS-RIPO

National Cancer Institute

Source

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A recombinant, live attenuated, nonpathogenic oncolytic virus containing the oral poliovirus Sabin type 1 in which the internal ribosomal entry site (IRES) is replaced with the IRES from human rhinovirus type 2 (HRV2), with potential antineoplastic activity. Upon intratumoral administration of recombinant oncolytic poliovirus PVS-RIPO, the poliovirus is selectively taken up by and replicates in tumor cells expressing CD155 (poliovirus receptor, PVR or NECL5) eventually causing tumor cell lysis. CD155, an oncofetal cell adhesion molecule and tumor antigen, is ectopically expressed in certain cancers, such as glioblastoma multiforme (GBM), and plays an important role in tumor cell migration, invasion, and metastasis. Due to the heterologous HRV2 IRES in this recombinant virus, PVS-RIPO only propagates in susceptible, nonneuronal cells (e.g., GBM).