IGF-1R Antisense Oligodeoxynucleotide-treated Autologous Glioma Cells

National Cancer Institute

Source

National Cancer Institute. IGF-1R Antisense Oligodeoxynucleotide-treated Autologous Glioma Cells. NCI Thesaurus. Code C101257.

Autologous glioma cells treated ex vivo with an 18-mer antisense oligodeoxynucleotide of insulin-like growth factor receptor 1 (IGF-1R/AS ODN), with potential antineoplastic activity. IGF-1R/AS ODN pre-treated glioma cells encapsulated in small Lucite diffusion chambers are implanted into a subcutaneous pocket in the patient's abdominal rectus sheath. Within the diffusion chambers, IGF-1R/AS ODN binds to IGF-1R mRNA, and shuts down the translation of IGF-1R in the glioma cells. Downregulation of IGF-1R induces apoptosis and causes the release of exosomes, which contain tumor-associated antigens (TAAs). The diffusion of exosomes and IGF-1R/AS ODN from the Lucite chambers may active the patient's immune system and mount a cytotoxic T-lymphocyte (CTL) response against cells expressing these TAAs. IGF-1R, a receptor tyrosine kinase, is overexpressed in a variety of tumor cell types and is essential for tumor cell growth, transformation and survival.