

# Cancer Biology & Drug Delivery

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## Gene cancer immunogene therapy

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**A**ntibodies to an oncoprotein Alpha-fetoprotein, AFP, have constituted the first generation tool for cancer diagnostic and cancer therapy, especially of hepatocarcinoma. In the case of brain malignant tumor, glioblastoma, AFP being present as well in glial as in neuronal cells, another oncoprotein-IGF-I, specific for glial cells was selected. For therapy purpose, the second generation tool was created: the arrest of oncoprotein synthesis in cancer cells was performed on translation and transcription level *in vitro* using anti-gene anti IGF-I strategy (IGF-I antisense/triple helix, AS/TH). The created AS/TH cells, presented the following characteristics: absence of IGF-I; presence of IGF-I receptor; presence of MHC-I, B71 and B72 antigens; and presence of IL-6. The observed phenotypical characteristics became the standardized criteria for IGF-I AS/TH cell vaccines: while injected in cancer patients, the vaccines induced the antitumor immune response and stopped the progression of tumor development. In glioblastoma patients, the survival reached 2 years, and in some cases, up to 3-4 years.

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