

# Karanahan

An approach, termed “Karanahan”, is aimed at the eradication of [cancer stem cells](#) (CSCs), which were shown to be capable of internalizing fragments of [extracellular double-stranded DNA](#). After being internalized, these fragments interfere in the process of repairing interstrand cross-links caused by exposure to appropriate [cytostatics](#), and such an interference results either in the elimination of CSCs or in the loss of their tumorigenic potency. Implementation of the approach requires a scheduled administration of [cytostatic](#) and complex composite double-stranded DNA preparation.

[U87](#) cells treated [in vitro](#) in accordance with the Karanahan approach completely lost their [tumorigenicity](#) and produced no [grafts](#) upon intracerebral transplantation into immunodeficient mice. In SCID mice with developed subcutaneous grafts, the treatment resulted in reliable slowing down of tumor growth rate ( $P < 0.05$ ). In the experiment with intracerebral transplantation of U87 cells followed by surgical excision of the developed graft and subsequent therapeutic treatment, the Karanahan approach was shown to reliably slow down the tumor growth rate and increase the median survival of the mice twofold relative to the control.

The effectiveness of the Karanahan approach has been demonstrated both [in vitro](#) and [in vivo](#) in treating developed subcutaneous [grafts](#) as well as [orthotopic grafts](#) after surgical excision of the tumor<sup>1)</sup>.

1)

Dolgova EV, Andrushkevich OM, Kisaretova PE, Proskurina AS, Ritter GS, Dubatolova TD, Romanenko MV, Taranov OS, Efremov YR, Zavyalov EL, Romaschenko AV, Mishinov SV, Kirikovich SS, Levites EV, Potter EA, Ostanin AA, Chernykh ER, Roshchin SY, Bervitskiy AV, Moysak GI, Rzaev JA, Bogachev SS. [Efficacy](#) of the new therapeutic approach in curing malignant [neoplasms](#) on the model of human [glioblastoma](#). Cancer Biol Med. 2021 Jul 14;j.issn.2095-3941.2020.0511. doi: 10.20892/j.issn.2095-3941.2020.0511. Epub ahead of print. PMID: 34259424.

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