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ELSEVIER FULL-TEXT ARTICLE

Induction of oligodendrogenesis in glioblastoma-initiating cells by IFN-mediated activation of STAT3 signaling.

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The response of cancer patients to interferon (IFN) treatment is long-lasting, indicating that IFN may act on small cancer stem cell populations. Glioma-initiating cells (GICs) can self-renew and induce the formation of heterogeneously differentiated tumor cells and are resistant to chemotherapeutic agents like temozolomide. In this study, we showed that via STAT3 signaling, IFN-beta suppressed the proliferation, self-renewal, and tumorigenesis of GICs, induced their terminal differentiation to mature oligodendroglia-like cells, and exhibited synergistic cytotoxicity with temozolomide. Therefore, IFN may be a potential therapeutic agent for inducing the terminal differentiation of GICs.

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