miR 944

Jiang et al. investigated the regulatory role of exosomal microRNA-944 (miR-944) derived from glioma stem cells (GSCs) in glioma progression and angiogenesis. Bioinformatics analysis showed that miR-944 levels were significantly lower in high-grade gliomas (HGGs) than low-grade gliomas in the Chinese Glioma Genome Atlas and The Cancer Genome Atlas datasets. The overall survival rates were significantly shorter for glioma patients expressing low miR-944 levels than high miR-944 levels. GSC-derived exosomal miR-944 significantly decreased in vitro proliferation, migration, and tube formation by human umbilical vein endothelial cells (HUVECs). Targetscan and dual luciferase reporter assays demonstrated that miR-944 directly targets the 3'UTR of VEGFC. In vivo mouse studies demonstrated that injection of agomiR-944 directly into tumors 3 weeks after xenografting glioma cells significantly reduced tumor growth and angiogenesis. GSC-derived exosomal miR-944 significantly reduced VEGFC levels and suppressed activation of AKT/ERK signaling pathways in HUVECs and xenograft glioma cell tumors. These findings demonstrate that GSC-derived exosomal miR-944 inhibits glioma growth, progression, and angiogenesis by suppressing VEGFC expression and inhibiting the AKT/ERK signaling pathway [1)]

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Jiang J, Lu J, Wang X, Sun B, Liu X, Ding Y, Gao G. Glioma stem cell-derived exosomal miR-944 reduces glioma growth and angiogenesis by inhibiting AKT/ERK signaling. Aging (Albany NY). 2021 Jul 7;13. doi: 10.18632/aging.203243. Epub ahead of print. PMID: 34233294.