miR-181c

Is a commonly down regulated MicroRNA in glioblastoma (GBM) reported by several MicroRNA profiles, associated with the mesenchymal subtype of GBM and predicted the outcome for patients from a GBM cohort (n=518) obtained from The Cancer Genome Atlas database. A multivariate analysis showed that miR-181c was an independent prognostic indicator for GBM patients. Quantitative reverse transcription PCR showed that miR-181c was expressed poorly in neurospheres of glioma cells that resemble glioma stem cells. Proliferation and invasion assays showed that miR-181c also blocked the proliferation and invasion abilities of glioma cells. Limiting dilution and colony formation assays showed that miR-181c attenuated the self-renewal ability of glioma cells. Finally, investigation of the mechanism defined Notch2, a key molecular of Notch signaling, as the functional downstream target of miR-181c. An inverse correlation was found between miR-181c and Notch2 in glioma cells and verified in fresh glioma samples. Taken together, the present study showed that miR-181c can be considered a valuable indicator for the outcome of GBM patients. miR-181c acts as a tumor suppressor that attenuates proliferation, invasion, and self-renewal capacities by downregulation of Notch2 in glioma cells [1].

1)
Ruan J, Lou S, Dai Q, Mao D, Ji J, Sun X. Tumor suppressor miR-181c attenuates proliferation, invasion, and self-renewal abilities in glioblastoma. Neuroreport. 2015 Jan 21;26(2):66-73. doi: 10.1097/WNR.0000000000000302. PubMed PMID: 25494473.