

# miR 1118

Hsa-miR-11181 was originally introduced as a regulator of genes involved in some brain tumours. Due to the high expression of Hsa-miR-11181 in limited glioblastoma brain tumours, in this study we intend to assess the expressions of Hsa-miR-11181 and Has-miR11181-3p in brain tumour tissues and attribute new target genes to these MicroRNAs.

**Materials and methods:** In this experimental study, total RNA from brain tissue samples was extracted for real-time quantitative polymerase chain reaction (RT-qPCR) analysis after cDNA synthesis. In order to confirm a direct interaction of Hsa-miR-11181 with two target genes, the 3' UTR of AKT2 and transforming growth factor-beta receptor 1 ([TGFB1](#)) were cloned separately for assessment by the dual luciferase assay.

**Results:** RT-qPCR analysis indicated that both Hsa-miR-11181-5p and Has-miR11181-3p specifically up-regulated in higher grades of glioma tumours versus other brain tumour types. Consistently, lower expression levels of AKT2 and TGFB1 were detected in higher grade gliomas compared to other types of brain tumours, which was inverse to the level of expression detected for the heparin-binding EGF-like growth factor (HBEGF) gene. The results of the dual luciferase assay supported a direct interaction of Hsa-miR-11181 with the 3' UTR sequences of the AKT2 and TGFB1 genes.

**Conclusion:** Overall, our data suggest that miR-1118 is a potential molecular biomarker for discrimination of glioma brain tumours from other brain tumour types <sup>1)</sup>.

<sup>1)</sup>

Dabiri H, Soltani BM, Dokanehiifard S, Jahanbakhshi A, Khaleghi M. Up-Regulation of Hsa-miR-11181 in Glioblastoma Multiforme as A Regulator of AKT2 and TGFB1 Signalling. Cell J. 2021 Sep;23(4):421-428. doi: 10.22074/cellj.2021.7734. Epub 2021 Aug 29. PMID: 34455717.

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Last update: **2024/06/07 02:53**

