

Although O(6)-methylguanine DNA methyltransferase (MGMT) promoter methylation status is an important marker for glioblastoma multiforme (Glioblastoma), there is considerable variability in the clinical outcome of patients with similar methylation profiles. **OBJECTIVE:** We examined whether a MicroRNA (MicroRNA) signature can be identified for predicting clinical outcomes and helping in treatment decisions. **METHODS:** The differentially expressed MicroRNAs were evaluated in 6 pairs of short- ( $\leq 450$  days) and long-term survivors ( $> 450$  days) by using microarray. real-time quantitative PCR (qRT-PCR) was applied to further verify screened MicroRNAs with a greater number of samples ( $n = 48$ ). Meanwhile, functional interpretation of MicroRNA profile was carried out based on MicroRNA-target databases. In addition, MGMT promoter methylation status was tested by means of pyrosequencing (PSQ) testing. **RESULTS:** Six MicroRNAs were upregulated in the long-term survival group (fold change  $\geq 2.0$ ,  $P < 0.05$ ). The further verification by qRT-PCR indicated that the increase in let-7g-5p, miR-139-5p, miR-17-5p and miR-9-3p level in long-term survivors was statistically significant. Kaplan-Meier survival analysis showed that high expression of a prognostic 4-MicroRNA signature was significantly associated with good patient survival ( $p = 0.0012$ ). The signature regulated signaling pathways including Calcium, MAPK, ErbB, mTOR and cell cycle involved in carcinogenesis from glial progenitor cell to primary Glioblastoma. **CONCLUSIONS:** The 4-MicroRNA signature was identified as an independent prognostic biomarker that identified patients who have a favorable outcome <sup>1)</sup>.

<sup>1)</sup>

Yuan GQ, Wei NL, Wang XQ, Zhang YN, Mu LY, Zhou WN, Pan YW. A 4-MicroRNAs signature predicts survival in glioblastoma multiforme patients. Cancer Biomark. 2017 Aug 25. doi: 10.3233/CBM-170205. [Epub ahead of print] PubMed PMID: 28869437.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

[https://neurosurgerywiki.com/wiki/doku.php?id=4\\_mirna\\_signature](https://neurosurgerywiki.com/wiki/doku.php?id=4_mirna_signature)

Last update: **2024/06/07 02:56**

