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1: [Int J Cancer](#). 2009 Sep 15;125(6):1407-13.



MicroRNA-10b is overexpressed in malignant glioma and associated with tumor invasive factors, uPAR and RhoC.

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MicroRNAs (miRNAs) are effective post-transcriptional regulators of gene expression and are important in many biological processes. Although the oncogenic and tumor suppressive functions of several miRNAs have been characterized, the role of miRNAs in mediating tumor invasion and migration remains largely unexplored. Recently, miR-10b was identified as an miRNA highly expressed in metastatic breast cancer, promoting cell migration and invasion. Here, we performed real-time reverse transcriptase polymerase chain reaction (RT-PCR) assays on 43 glioma samples (17 glioblastoma, 6 anaplastic astrocytoma, 10 low-grade astrocytoma, 6 oligodendroglioma and 4 ependymoma) and 6 glioma cell lines. We found that miR-10b expression was upregulated in all glioma samples compared to non-neoplastic brain tissues. The expression levels of miR-10b were associated with higher grade glioma. In addition, mRNA expressions of RhoC and urokinase-type plasminogen activator receptor (uPAR), which were thought to be regulated by miR-10b via HOXD10, were statistically significantly correlated with the expression of miR-10b ($p < 0.001$, $p = 0.001$, respectively). Also, protein expression levels of RhoC and uPAR were associated with expression levels of miR-10b ($p = 0.009$, $p = 0.014$, respectively). Finally, multifocal lesions on enhanced MRI of 7 malignant gliomas were associated with higher expression levels of miR-10b ($p = 0.02$). Our data indicated that miR-10b might play some role in the invasion of glioma cells. 2009 UICC

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