miR 151

The microRNA-151 (miR-151) has been reported to be involved in the growth, development, and tumorigenesis of different types of human cancers. This study was designed to unravel the role and therapeutic potential of miR-151 in glioma. The results showed glioma was found to be associated with significant (P<0.05) downregulation of miR-151. Low expression of miR-151 was also associated with poor survival of the glioma patients. Overexpression of miR-151 resulted in a significant (P<0.05) decline of glioma cell proliferation and colony formation. The sensitivity of the glioma cells to adriamycin also increased significantly (P<0.05) upon miR-151 overexpression. Additionally, overexpression of miR-151 also suppressed the migration and invasion of the human glioma cells. This was also associated with alteration in the expression of Epithelial-mesenchymal-transition proteins. The expression of E-cadherin was increased while as that of N-cadherin, vimentin, and Snail was considerably decreased upon miR-151 overexpression. Bioinformatic analysis and ducal luciferase assay showed miR-151 targets profilin 2 (PFN2) in human glioma cells. The expression of PFN2 was found to be significantly (P<0.05) upregulated in human glioma tissues cells and cell lines. Nonetheless, the PFN2 expression was considerably suppressed upon miR-151 overexpression. Knockdown of PFN2 resulted in decrease of glioma cells proliferation. In contrary, overexpression of PFN2 could avoid the tumor-suppressive effects of miR-151. Taken together, present study points towards the tumor-suppressive effects of miR-151 and prospective therapeutic implications in human glioma [1)].

1)
Zhang W, Niu H, Wang R, Liu C, Wang Y. MicroRNA-151 regulates the growth, drug sensitivity and Epithelial-mesenchymal-transition of human glioma cells by targeting profilin 2. Acta Biochim Pol. 2022 Mar 2. doi: 10.18388/abp.2020_5777. Epub ahead of print. PMID: 35232010.