Rab23

Rab23 overexpression has been implicated in several human cancers. However, its biological roles and molecular mechanism in astrocytoma have not been elucidated. The aim of a study is to explore clinical significance and biological roles of Rab23 in astrocytoma.

Wang et al observed negative Rab23 staining in normal astrocytes and positive staining in 39 out of 86 (45 %) astrocytoma specimens using immunohistochemistry. The positive rate of Rab23 was higher in grades III and IV (56.5 %, 26/46) than grades I + II astrocytomas (32.5 %, 13/40, $p < 0.05$). Transfection of Rab23 plasmid was performed induced A172 cell proliferation, colony formation, invasion, and migration, while Rab23 depletion with siRNA reduced these abilities of U87 cells. In addition, they found that Rab23 transfection upregulated while its depletion reduced Rac1 activity. Treatment of transfected cells with a Rac1 inhibitor decreased Rac1 activity and invasion. In conclusion, Rab23 serves as an important oncoprotein in human astrocytoma by regulating cell invasion and migration through Rac1 activity [1)].

Members of RAB family, RAB21, RAB23, RAB18 and RAB3B were predicted to be novel targets of miR-200b. The direct suppression of RAB21, RAB23, RAB18 and RAB3B expressions by miR-200b was revealed by luciferase reporter assay, quantitative RT-PCR analysis and Western blot. Furthermore, the overall survival of patients with different expression of RABs was analyzed. The expression of RAB21, RAB23, RAB18 and RAB3B was related to the prognosis and histopathology of glioma. The patients who had the upregulation of all the four RABs had the worst outcome; those who had the downregulation of all RABs had the best outcome ($p<0.001$). miR-200b was a potential biomarker for glioma prognosis [2)].

1)
Wang M, Dong Q, Wang Y. Rab23 is overexpressed in human astrocytoma and promotes cell migration and invasion through regulation of Rac1. Tumour Biol. 2016 Feb 20. [Epub ahead of print] PubMed PMID: 26897750.
2)
Liu Q, Tang H, Liu X, Liao Y, Li H, Zhao Z, Yuan X, Jiang W. miR-200b as a prognostic factor targets multiple members of RAB family in glioma. Med Oncol. 2014 Mar;31(3):859. doi: 10.1007/s12032-014-0859-x. Epub 2014 Jan 30. PubMed PMID: 24477653.