HOST2

Long non-coding RNA (lncRNA) human ovarian cancer-specific transcript 2 (HOST2) has been reported to be expressed at high levels in human ovarian cancer, involving tumorigenesis. However, little is still known about whether and how HOST2 regulates glioma development and progression. Therefore, a study of Wang et al. from the Department of Neurosurgery, Shanghai East Hospital Affiliated to Tongji University, aimed to investigate the role of HOST2 in human glioma cells. Reverse transcription quantitative real-time polymerase chain reaction (RT-qPCR) was used to determine the expression of lncRNA HOST2, let-7b, and PBX3 in human glioma cells. Cultured human glioma cells were treated with siRNA (si)-lncRNA HOST2, let-7b mimic, si-lncRNA HOST2 + let-7b inhibitor, and si-PBX3. Parameters including cell viability, colony formation, cell migration, and cell invasion were detected by cell counting kit-8 assay, colony formation assay, scratch test, and Transwell assay respectively to determine the effects of down-regulated HOST2 on glioma cells. Tumor formation in nude mice was evaluated by subcutaneous tumor formation experiment. Results showed that HOST2 and PBX3 were highly expressed in glioma tissue whereas let-7b was expressed at much lower levels. In response to treatment with si-lncRNA HOST2, si-PBX3, and let-7b mimic, glioma cell lines exhibited decreased cell viability, suppressed cell migration, invasion, and reduced colony formation of glioma cells. This was accompanied by an attenuated tumor formation with smaller volume and weight in nude mice, suggesting that down-regulated HOST2 could inhibit the tumorigenicity of glioma cells. Lastly, we found that lncRNA HOST2 was highly expressed in glioma tissues and its down-regulation could inhibit the growth and invasion of glioma cells [1)].

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Wang Q, Zhuang ZW, Cheng YM, Ma JQ, Xu SY, Zhong CL, Zhang KM. An in vitro and in vivo study of the role of long non-coding RNA-HOST2 in the proliferation, migration, and invasion of human glioma cells. IUBMB Life. 2018 Oct 5. doi: 10.1002/iub.1943. [Epub ahead of print] PubMed PMID: 30290058.