LINC01018

Since the inhibitory effect of KNG1 on glioma has been proved, this study further explores the regulation of the lncRNA/miRNA axis on KNG1 in glioma.

The miRNAs that target KNG1 and the lncRNA that target miR 942-5p were predicted by bioinformatics analysis and verified by experiments. The correlations between miR-942-5p and the survival of patients and between KNG1 and miR-942-5p were analyzed. After transfection, cell migration, invasion, proliferation, and cell cycle were detected through wound healing, Transwell, colony formation, and flow cytometry assays. A mouse subcutaneous xenotransplanted tumor model was established. The expressions of miR-942-5p, KNG1, LINC01018, and related genes were evaluated by quantitative real-time reverse transcription polymerase chain reaction (RT-qPCR), Western blot, or immunohistochemistry.

MiR-942-5p targeted KNG1, and LINC01018 sponged miR-942-5p. The high survival rate of patients was related to low miR-942-5p level. MiR-942-5p was highly expressed, whereas KNG1 was lowly expressed in glioma. MiR-942-5p was negatively correlated with KNG1. Silent LINC01018 or KNG1 and miR-942-5p mimic enhanced the migration, invasion, and proliferation of glioma cells, and regulated the expressions of metastasis-related and proliferation-related genes. LINC01018 knockdown and miR-942-5p mimic promoted glioma tumor growth in mice. The levels of miR-942-5p and KNG1 were decreased by LINC01018 knockdown, and LINC01018 expression was suppressed by miR-942-5p mimic. MiR-942-5p inhibitor, KNG1, and LINC01018 had the opposite effect to miR-942-5p mimic.

Conclusion: LINC01018/miR-942-5p/KNG1 pathway regulates the development of glioma cells in vitro and in vivo [1)].

1)
Xu J, Wang J, Zhao M, Li C, Hong S, Zhang J. LncRNA LINC01018/miR-942-5p/KNG1 axis regulates the malignant development of glioma in vitro and in vivo. CNS Neurosci Ther. 2022 Dec 22. doi: 10.1111/cns.14053. Epub ahead of print. PMID: 36550594.