NUP37

NUP37 (Nucleoporin 37) is a Protein Coding gene. Diseases associated with NUP37 include Microcephaly 24, Primary, Autosomal Recessive and Genetic Steroid-Resistant Nephrotic Syndrome. Among its related pathways are mRNA Splicing - Major Pathway and Transport of the SLBP independent Mature mRNA.

The carcinogenic effect of NUP37 has been reported recently in a variety of tumors, but its research in the field of glioma has not been paid attention to. The main purpose of a study is to reveal the relationship between NUP37 and the prognosis or clinical characteristics of glioma patients.

First, as a retrospective study, this study included thousands of tissue samples based on a variety of public databases and clinicopathological tissues. Second, a series of bioinformatics analysis methods were used to analyze the NUP37 and glioma samples from multiple databases such as the CGGA, TCGA, GEO, HPA, and GEPIA. Third, to analyze the relationship between the expression level of NUP37 in tumor tissues and cells and a variety of clinical prognostic molecular characteristics, whether it can be an independent risk factor leading to poor prognosis in glioma and whether it has clinical diagnostic value; GSEA was used to analyze the cancer-related signaling pathways that may be activated by high expression of NUP37. Fifth, CMap was used to analyze small molecule drugs that may inhibit NUP37 expression. Finally, the meta-analysis of thousands of tissue samples from seven datasets and cell proliferation and migration experiments confirmed that NUP37 has a malignant effect on glioma.

NUP37 is highly expressed in glioma patient tissues and glioma cells significantly correlate with reduced overall survival and may serve as an independent prognostic factor with some diagnostic value. Silencing NUP37 suppresses malignant biological behaviors of glioma cells. 4 small molecule drugs that had potential targeting inhibitory effects on NUP37 overexpression.

This study demonstrates for the first time a malignant role of NUP37 in glioma and provides a vision to unravel the complex pathological mechanisms of glioma and a potentially valuable biomarker for implementing individualized diagnosis and treatment of glioma [1)]

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Liu Z, Wang H, Jia Y, Wang J, Wang Y, Bian L, Liu B, Lian X, Zhang B, Ren Z, Zhang W, Dai W, Gao Y. Significantly high expression of NUP37 leads to poor prognosis of glioma patients by promoting the proliferation of glioma cells. Cancer Med. 2021 Jul 15. doi: 10.1002/cam4.3954. Epub ahead of print. PMID: 34264013.