

Hub genes

Hub genes are defined as [genes](#) with high correlation in [candidate gene](#) modules. High connectivity means that the connectivity ranked at top 10%. For example, if the module size was 1000, then the genes with top 100 were defined as the hub genes.

In a study, [dataset GSE50161](#) was used to construct a co-expression network for weighted [gene co-expression network](#) analysis. Two modules (dubbed brown and turquoise) were found to have the strongest correlation with [glioblastoma](#) (Glioblastoma). [Functional enrichment analysis](#) indicated that the brown module was involved in the [cell cycle](#), DNA [replication](#), and [pyrimidine](#) metabolism. The turquoise module was primarily related to [circadian rhythm](#) entrainment, glutamatergic synapses, and [axon guidance](#). [Hub genes](#) were screened by survival analysis using The Cancer Genome Atlas and Human Protein Atlas databases and further tested using the GSE4290 and Gene Expression Profiling Interactive Analysis databases. The eight hub genes ([NUSAP1](#), [SHCBP1](#), [KNL1](#), [SULT4A1](#), [SLC12A5](#), [NUF2](#), [NAPB](#), and [GARNL3](#)) were verified at both the transcriptional and translational levels, and these gene expression levels were significant based on the [World Health Organization](#) classification system. These hub genes may be potential [biomarkers](#) and therapeutic targets for the accurate diagnosis and management of Glioblastoma ¹⁾.

¹⁾

Li C, Pu B, Gu L, Zhang M, Shen H, Yuan Y, Liao L. Identification of key modules and hub genes in glioblastoma multiforme based on co-expression network analysis. FEBS Open Bio. 2021 Jan 10. doi: 10.1002/2211-5463.13078. Epub ahead of print. PMID: 33423377.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=hub_genes

Last update: **2024/06/07 02:57**

