ETS transcription factor ELK3 (ELK3), a novel oncogene, affects pathological processes and progression of many cancers in human tissues. However, it remains unclear whether ELK3, as a key gene, affects the pathological process of gliomas and the prognosis of patients with gliomas. This study aimed to comprehensively and systematically reveal the correlation between ELK3 and the malignant progression of gliomas by analyzing clinical sample information stored in multiple databases. We revealed the putative mechanism of ELK3 involvement in malignant gliomas progression and identified a new and efficient biomarker for glioma diagnosis and targeted therapy. Based on the sample data from multiple databases and real-time quantitative polymerase chain reaction (RT-qPCR), the abnormally high expression of ELK3 in gliomas was confirmed. Kaplan-Meier and Cox regression analyses demonstrated that a high ELK3 expression was markedly associated with low patient survival and served as an independent biomarker of gliomas. Wilcox and Kruskal-Wallis tests revealed that expression of ELK3 was positively correlated with several clinical characteristics of patients with gliomas, such as age, WHO classification, and recurrence. Moreover, Cell Counting Kit-8 (CCK-8), immunofluorescence, and wound healing assays confirmed that ELK3 overexpression markedly promoted the proliferation and migration of glioma cells. Finally, gene set enrichment analysis (GSEA) and western blotting confirmed that overexpression of ELK3 regulated the JAK-STAT signaling pathway and upregulate the expression of signal transducer and activator of transcription 3 (STAT3) and phosphorylated STAT3 (P-STAT3) to promote the malignant transition of gliomas. Therefore, ELK3 may serve as an efficient biomarker for the diagnosis and prognosis of gliomas and it can also be used as a therapeutic target to improve the poor prognosis of patients with gliomas [1)].

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Liu Z, Ren Z, Zhang C, Qian R, Wang H, Wang J, Zhang W, Liu B, Lian X, Wang Y, Guo Y, Gao Y. ELK3: A New Molecular Marker for the Diagnosis and Prognosis of Glioma. Front Oncol. 2021 Dec 16;11:608748. doi: 10.3389/fonc.2021.608748. PMID: 34976781; PMCID: PMC8716454.