The Gene Expression Database (GXD) is a community resource for gene expression information from the laboratory mouse. GXD stores and integrates different types of expression data and makes these data freely available in formats appropriate for comprehensive analysis.

Four gene expression databases (GEO, TCGA, GTEx and CCLE) were enrolled in a study and used for TROAP expression and survival analysis. TROAP expression was quantified by qRT-PCR, western blot and immunohistochemistry assays in glioma tissues and cell lines. TROAP knockdown and overexpression vector were constructed and transfected into glioma cells. CCK-8, colony formation, transwell, and wound healing assays were used to evaluate cell viability, migration and invasion, flow cytometry to determine cell cycle arrest. Gene set enrichment analysis (GSEA) was conducted to screen the pathway involved in TROAP-high phenotype. The expression of cell cycle and Wnt/β-Catenin signaling proteins were analyzed by immunofluorescence and western blot.

Based on the bioinformatic analysis and a series of functional assays, Zhao et al. found the TROAP was enriched in glioma tissues and cell lines, its overexpression was correlated with the clinicopathologic characteristics and poor prognosis. TROAP knockdown inhibited cell proliferation, migration, invasion, and G1/S cell cycle arrest compared with control group in glioma. Mechanism analysis revealed that TROAP activated Wnt/Beta-catenin pathway and upregulated its downstream targets expression, while silencing β -Catenin or Axin2 could reverse the tumor-promoting effects caused by TROAP, confirming that TROAP-induced malignant phenotype and tumorigenesis via Wnt/ β -Catenin signaling pathway.

Conclusion: The present study found that TROAP accelerated the progression of gliomagenesis through Wnt/ β -Catenin pathway, and TROAP might be considered as a novel target for glioma therapy ¹⁾.

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Zhao ZQ, Wu XJ, Cheng YH, Zhou YF, Ma XM, Zhang J, Heng XY, Feng F. TROAP regulates cell cycle and promotes tumor progression through Wnt/β-Catenin signaling pathway in glioma cells. CNS Neurosci Ther. 2021 Jun 2. doi: 10.1111/cns.13688. Epub ahead of print. PMID: 34077623.

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