PLOD2

Circular RNAs are closed endogenous RNAs that are involved in tumor progression of diverse tumors. Even with the most advanced combined treatments, patients with glioblastoma have a median survival time of <15 months. A study aimed to investigate the roles of circular PLOD2 (circPLOD2) in gliomagenesis and tumor development and to clarify its tumor-promoting effects by bioinformatics analysis and molecular experiments.

To determine the characteristics of circPLOD2 expression, quantitative real-time polymerase chain reaction was conducted. Stable knockdown of circPLOD2 was implemented for functional assays. Cell Counting Kit-8 and colony formation assays were used to measure cell proliferation. Transwell assays and tube formation assays were used to evaluate cell invasion and angiogenesis abilities, respectively. An intracranial xenograft model was established to determine the function of circPLOD2 in vivo. Further biochemical and Western blot analyses were conducted to evaluate proteins associated with circPLOD2.

circPLOD2 was upregulated in glioma tissues and cells. High expression of circPLOD2 was significantly associated with tumor size, World Health Organization grade, and molecular characteristics of glioma. circPLOD2 deregulation affected glioblastoma multiforme cell proliferation, invasion, and angiogenesis. Knockdown of circPLOD2 inhibited tumorigenesis in vivo. Further biochemical analysis showed that circPLOD2 was involved in oncogenic pathways and correlated with the expression of proteins related to proliferation, invasion, and angiogenesis.

The data indicate that circPLOD2 promotes glioma tumorigenesis and tumor development in vitro and in vivo and that suppressing circPLOD2 could be a novel therapeutic strategy for glioma [1)].

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