

Increasing [evidence](#) has confirmed that [circRNAs](#) are involved in regulating the [development](#) and [progression](#) of various [tumors](#). The aim of a study of Gao et al. from the Department of Neurosurgery, People's Hospital of Lanling County, [Linyi, Shandong, China](#) was to examine the effect of [circFBXW7](#) on [glioma progression](#) and to determine its underlying mechanism.

qRT-PCR was performed to measure the expression of circFBXW7, [miR 23a-3p](#), and PTEN in tissues and cell lines of [glioma](#). The [proliferation](#) ability of [glioma cells](#) was examined using the CCK-8 assay. Glioma cell migration and invasion capacity were detected using Transwell assays. The dual-luciferase reporter gene assay was employed to examine the correlation between miR-23a-3p and circFBXW7 or PTEN. The expression levels of the related genes were determined using western blotting analysis. A glioma xenograft tumor model was employed to evaluate the functional roles of circFBXW7 in vivo.

CircFBXW7 was found to be aberrantly downregulated in glioma [tumor tissues](#) and [cell lines](#). Overexpression of circFBXW7 was found to significantly inhibit the [proliferation](#), [migration](#), and [invasion](#) ability of the [glioma cells](#). Moreover, bioinformatic analysis and dual-luciferase reporter assays confirmed that circFBXW7 can directly target miR-23a-3p, which then blocks the binding of miR-23a-3p to the 3' untranslated region (UTR) of [PTEN](#). Mechanically, circFBXW7 suppresses cell proliferation and metastasis in glioma by sponging miR-23a-3p, resulting in elevated PTEN expression. In addition, in vivo experiments also confirmed that circFBXW7 overexpression effectively halts tumor growth and metastasis. Consistent with the in vitro observations, circFBXW7 overexpression significantly decreased miR-23a-3p, Ki-67, and N-cadherin, as well as increased PTEN and E-cadherin levels.

The results revealed that circFBXW7 exhibits anti-proliferative and anti-[metastasis](#) activities via sponging miR-23a-3p to elevate PTEN expression in glioma, which may offer a novel target for clinical therapy and diagnosis of glioma ¹⁾.

¹⁾

Gao ZG, Yang P, Huang J, Ding YQ. CircFBXW7 Alleviates Glioma Progression through Regulating MiR-23a-3p/PTEN Axis. Anat Rec (Hoboken). 2020 May 4. doi: 10.1002/ar.24410. [Epub ahead of print] PubMed PMID: 32365279.

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