circ_0055412

Recent evidence has suggested that circular RNAs (circRNAs) are associated with the pathological processes in glioma.

Zhou et al. aimed to investigate the function and mechanism of circ_CAPG (circ_0055412) in glioma.

Firstly, circ_0055412 expression was examined through Real-time polymerase chain reaction analysis. Loss-of-function assays and animal experiments were implemented to evaluate the role of circ_0055412 on cisplatin resistance of glioma cells. Moreover, mechanism assays were done to probe into the regulatory mechanism of circ_0055412 in glioma cells.

Circ_0055412 was found to be notably upregulated in glioma cells. Moreover, depletion of circ_0055412 enhanced cisplatin sensitivity of glioma cells in vitro and in vivo. Moreover, circ_0055412 recruited eukaryotic translation initiation factor 4A3 (EIF4A3) protein to stabilize capping actin protein, gelsolin-like (CAPG) mRNA. Furthermore, circ_0055412 served as a sponge for microRNA-330-3p (miR-330-3p) and regulated nuclear factor of activated T cells 3 (NFATC3) expression to activate the transcription of catenin beta 1 (CTNNB1), thus participating in the activation of the Wnt/β-catenin signaling pathway.

Circ_0055412 contributed to cisplatin resistance of glioma cells via stabilizing CAPG mRNA and modulating the Wnt/β-catenin signaling pathway. This finding might provide novel information for glioma treatment [1].

1)
Zhou Q, Fu Q, Shaya M, Kugeluke Y, Li S, Dilimulati Y. Knockdown of circ_0055412 promotes cisplatin sensitivity of glioma cells through modulation of CAPG and Wnt/β-catenin signaling pathway. CNS Neurosci Ther. 2022 Mar 25. doi: 10.1111/cns.13820. Epub ahead of print. PMID: 35332692.