

Aggressive [metastasis](#) of [tumor cells](#) assumed a constructive role in strengthening the [chemoresistance](#) of tumors, so this investigation was intended to elucidate if lncRNA CCAT2 sponging downstream [miR 424](#) regulated chemotolerance of glioma cells by boosting metastasis of glioma cells.

One hundred and twenty-eight pairs of [glioma](#) tissues and corresponding adjacent [tissues](#) were resected from glioma patients during their operation, and we also purchased a series of glioma cell lines, including [U251](#), [U87](#), [A172](#) and [SHG44](#). Furthermore, pcDNA3.1-CCAT2, si-CCAT2, miR-424 mimic and miR-424 inhibitor were transfected into SHG44 and U251 [cell lines](#), so as to evaluate impacts of CCAT2 and miR-424 on chemosensitivity of the glioma cells. Besides, proliferation, invasion, and metastasis of the cells were determined through the implementation of [colony formation assay](#), [transwell assay](#) and [scratch assay](#).

Glioma tissues and cells were monitored with higher CCAT2 expression and lower miR-424 expression than adjacent normal tissues and NHA cell line ($P<0.05$). Among the glioma cell lines, the SHG44 cell line showed the strongest resistance against teniposide, temozolomide and cisplatin ($P<0.05$), whereas the U251 cell line was more sensitive to teniposide, temozolomide, vincristine and cisplatin than any other cell line ($P<0.05$). Besides, pcDNA3.1-CCAT2 and miR-424 inhibitor could enhance tolerance of glioma cell lines against drugs ($P<0.05$). Moreover, in-vitro transfection of si-CCAT2 and miR-424 mimic could significantly retard proliferation, invasion and migration of SHG44 and U251 cells ($P<0.05$), and CCAT2 was found to negatively regulate miR-424 expression by sponging it ($P<0.05$). In addition, CHK1 was deemed as the molecule targeted by upstream miR-424, and its overexpression can changeover the effects of miR-424 mimic on proliferation and metastasis of SHG44 and U251 cells.

lncRNA CCAT2/miR-424/Chk1 axis might serve as a promising target for improving chemotherapeutic efficacies in glioma treatment ¹⁾.

¹⁾

Ding J, Zhang L, Chen S, Cao H, Xu C, Wang X. lncRNA CCAT2 Enhanced Resistance of Glioma Cells Against Chemodrugs by Disturbing the Normal Function of miR-424. *Onco Targets Ther.* 2020 Feb 17;13:1431-1445. doi: 10.2147/OTT.S227831. eCollection 2020. PubMed PMID: 32110042; PubMed Central PMCID: PMC7034969.

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