SLC1A5

The role of ferroptosis or ferroptosis-related genes (FRGs) in glioma progression has not been extensively studied. In our study, a novel ferroptosis-related prognostic model, including 7 genes, was established, in which patients classified into the high-risk group had more immuno-suppressive status and worse prognosis. Among these 7 genes, we screened solute carrier family 1 member 5 (SLC1A5), an FRG, as a possible new target for glioma treatment. Our results showed that the expression of SLC1A5 was significantly upregulated in glioblastoma tissues compared with the low-grade gliomas. In addition, SLC1A5 knockdown could significantly inhibit glioma cell proliferation and invasion, and reduce the sensitivity of ferroptosis via the GPX4-dependent pathway. Furthermore, SLC1A5 was found to be related to immune response and SLC1A5 knockdown decreased the infiltration and M2 polarization of tumor-associated macrophages. Pharmacological inhibition of SLC1A5 by V9302 was confirmed to promote the efficacy of anti-PD-1 therapy. Overall, we developed a novel predictive model for glioma based on the seven-FRGs signature, which could apply to glioma prognostic and immune status prediction. Besides, SLC1A5 in the model could regulate the proliferation, invasion, ferroptosis, and immune state in glioma, and be applied as a prognostic biomarker and potential therapeutic target for glioma [1)]

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Han L, Zhou J, Li L, Wu X, Shi Y, Cui W, Zhang S, Hu Q, Wang J, Bai H, Liu H, Guo C, Cao H, Chao M, Hu Y, Mou Y, Jiao Y, Feng D, Wang L, Qu Y. SLC1A5 enhances malignant phenotypes through modulating ferroptosis status and immune microenvironment in glioma. Cell Death Dis. 2022 Dec 24;13(12):1071. doi: 10.1038/s41419-022-05526-w. PMID: 36566214.