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ABSTRACT

Temozolomide (TMZ) was used for clinical postoperative or non-surgical chemotherapy patients. However, its effect remains unsatisfactory and gradually discovered that the presence of chemoresistance. To explore more effective therapy using TMZ, we investigate the effects of combination of application of TMZ together with Sonodynamic therapy (SDT), which is based on the ultrasonic activation of a sonosensitizer, with low toxicity, noninvasive, deeper penetrability and a promising approach for treating malignant glioma by inducing apoptosis on glioma cells in vitro. Sodium–hydrogen exchanger isoform 1 (NHE1), which enable glioblastoma cells to escape TMZ-mediated toxicity via increased H+extrusion and affect the apoptosis effect on C6 glioma cells in vitro. The C6 cells survival rate and time point of TMZ resistance were tested by the Cell Counting Kit-8 (CCK8) viability assay. Western blot analysis results showed that the expression of NHE1 and matrix metalloproteinase-2 (MMP-2) protein obviously decreased by TMZ+SDT.