Abstrac

Glioblastoma is the most and common brain tumors malignant. The treatment of glioblastoma is very difficult, due to extensive tissue surrounding of the brain and the aggressive attack. Therefore, the investigation of new therapeutic approaches for this disease is very important. At the present study, for the first time, we examined the cytochalasin H cytotoxicity activities as a new agent therapeutic on the human malignant glioma cell line (U87MG) *in vitro*. The cells were cultured and treated with 10^{-10}- 10^{-5} M of cytochalasin H for 24, 48 and 72 h. MTT assay showed that cytochalasin H (10^{-5} M) inhibited the U87MG cancer cells proliferation for 48 h. The Real-time PCR showed that *PLAU* and *PCDH10* expressions were significantly decreased and increased compared with control respectively. The fluorescence microscopy indicated morphological changes due to apoptosis in U87MG cancer cells after treatment with cytochalasin H (10^{-5} M, 48 h). Fluorometric analysis of caspase 3, 8, and 9 activities showed that there were not significant differences in caspases compared with control group. Together, this research project program showed the caspase-independent pathways of programmed cell death in U87MG cancer cell line under cytochalasin H treatment and further studies are needed to explore the exact mechanism.

Key words: glioblastoma, cytochalasin H, caspases, apoptosis, *PLAU, PCDH10*, qPCR, MTT assay

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