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Cytochalasin E, a Potential Agent for Anti-Glioma Therapy, Efficiently Induces U87 Human Glioblastoma Cell Death

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***SUMMARY*. Glioblastoma is one of the most malignant brain tumors. Current treatments for glioblastoma usually make poor responses, and novel treatment strategies are extremely imperative. Cytochalasin E was reported to inhibit angiogenesis and tumor growth in some studies, but its effects on gliomas are still unknown. In this study, we found cytochalasin E inhibits U87 human glioblastoma cell growth in a very low concentration range of 10^{-8} to 10^{-6} M in a time and concentration dependent manner, and the IC50 were $1.17 \pm 0.32 \times 10^{-7}$ M for 48 h treatment, $6.65 \pm 1.12 \times 10^{-8}$ M for 72 h and $3.78 \pm 1.30 \times 10^{-8}$ M for 96 h. We also found cytochalasin E induces cell-cycle G2/M phase arrest (72 h-treatment of 10^{-6} M cytochalasin E caused 56.2 ± 6.1 % cells arrest in G2/M phase) and cell apoptosis (96 h-treatment of 10^{-6} M cytochalasin E induced 24.1 ± 4.2 % cells apoptosis). Thus, cytochalasin E is proposed as a potential agent for glioblastoma chemotherapy.**

KEY WORDS: Actin, apoptosis, Cytochalasin E, Glioma, Proliferation.

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