

Mentha crisper Essential Oil and Rotundifolone Analogues: Cytotoxic Effect on Glioblastoma

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Abstract : Glioblastoma (GBM) is an aggressive cancer from the brain and with high prevalence and significant morbimortality. Therefore, it is necessary to investigate new therapeutic options against this pathology. Thus, the purpose of this study was to evaluate the antitumor activity from *Mentha crisper* essential oil (MCEO), its major constituent rotundifolone (ROT) and a series of six analogues on human U87MG glioblastoma cell line. The antitumor effects of the compounds on human U87MG-GBM cell line were assessed using in vitro cell viability assays. In addition, biosafety tests were performed on cultured human blood cells. The data show that MCEO, 1,2-perillaldehyde epoxide (EPER1) and perillaldehyde (PALD) were the most cytotoxic compounds against the U87MG cells, with IC50 values of 16.263, 15.087 and 14.888 µg/mL, respectively. The treatment with MCEO, EPER1 and PALD did not lead to damage in blood cells. These chemical analogues may be useful as prototypes for development of novel antitumor drugs due to their promising activities and toxicological safety.

Keywords : antitumor activity, cancer, natural products, terpenes

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