MECHANISM OF CANNABINOIDS ANTICANCER ACTION IN GLIOMAS: THERAPEUTIC IMPLICATIONS

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Glioblastoma (GBM) is the most frequent and aggressive form of brain cancer. These features are explained at least in part by the high resistance exhibited by these tumors to current anticancer therapies. Thus, the development of novel therapeutic approaches is urgently needed to improve the survival of the patients suffering this devastating disease. Δ^9-Tetrahydrocannabinol (THC, the major active ingredient of marijuana), and other cannabinoids have been shown to exert antitumoral actions in animal models of cancer, including glioma. The mechanism of these anticancer actions relies, at least in part, on the ability of these compounds to stimulate autophagy-mediated apoptosis in tumor cells. In this talk I will summarize some of our findings on: (i) the mechanism by which cannabinoids promote glioma cell death; (ii) the identification of the factors for resistance to cannabinoid anti-cancer action in gliomas with particular focus on Glioma initiating cells; and (iii) the identification of some cannabinoid-based combinational therapies that have already helped to set the bases for the development of clinical studies.