CYTOTOXIC EFFECT OF WILD BLACKBERRY (RUBUS SPP) PHENOLIC COMPOUNDS ON MURINE GLIOMA CELL LINES

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Brain tumors represent the third cause of death in cancer patients worldwide. Gliomas are the most frequent tumors of the central nervous system. Currently, their treatment consists in resection surgery combined with radio and chemotherapy with temozolamide. In Mexico, the treatment of first choice is based on carboplatin and vincristine by the high costs of the temozolamide. However, the survival for the patients remains poor. The alternative medicine offers some options of natural origin as possible therapeutic agents against neoplastic cells. Here, we determined the cytotoxic effect of two wild blackberries (Rubus spp) phenolic compounds (anthocyanin and proanthocyanidin) on two murine glioma cell lines (C6 and RG2). The extracts were isolated by ionic interchange resin chromatography and they were characterized by HPLC and Mass Spectroscopy. The cell viability was determined on C6 and RG2 cell lines exposed to different concentrations (0.001 - 2.5 µg/ml) of blackberries extracts by 24 and 48 hours. The viability of the groups was determined by the amount of the crystal violet eluted and these data were validated by the incorporation and elution of the dye neutral red only by living cells. Our results shown that the survival of neoplastic cells has a dose-dependent behavior, where the major effect (> 60% of cell death) was observed at the 48 hours of exposition at a concentration of 1µg/ml of proanthocyanidin in both tumor cell lines. Preliminarily, we propose some candidates of blackberry extracts which will be tested in further trials to determine the possible pathways that induce the cell death in these glioma lines. The results obtained will allow us to suggest suitable compounds for the development of alternative treatments against tumors of glial origin. Key words: cancer, glioma, anthocyanin, proanthocyanidin, cytotoxicity, blackberry, Rubus.