

ANTI-NEOPLASTIC POTENTIAL OF BRAZILIAN PLANTS CRUDE EXTRACT ON HUMAN GLIOMA CELL LINES

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Introduction: Glioblastomas are the most common primary brain tumors. The use of new antineoplastic agents of natural sources has been highly effective and offers a wide field for scientific research. Studies have shown that Brazilian cerrado plants have been broadly used in popular medicine as analgesic, anti-inflammatory and anticancer agents. However, little is known about their anticancer properties in brain tumors. **Objective:** To investigate the antitumor effect of Brazilian cerrado plants extracts on glioma cell lines. **Material and Methods:** Antitumor effects of 13 distinct Brazilian cerrado plants extracts were assessed using MTS assays on two adult (GAMG and U373), two pediatric (SF188 and RES259) and one primary (HCB151) glioma cell line. We also compared the antitumor efficacy of these phytotherapeutic with standard glioblastoma therapy (temozolomide-TMZ). **Results:** The Brazilian cerrado plants extracts exhibited dose-dependent cytotoxic effects in most of the glioma cell lines. Amongst the crude extracts tested, three extracts from *melastomataceae* family displayed the best activity among glioma cell lines, with an IC₅₀ mean ranging from 25 to 35 ug/mL. In comparison with TMZ, *melastomataceae* extracts showed a median of 2.3 fold higher efficacy in the glioma cell lines analyzed, with a range of 0.9 – 5.3 fold. **Conclusions:** The extracts from the *melastomataceae*s demonstrated potent antitumor activity against glioma cell lines. Taken together, our findings may provide insight into the tailoring designing of the natural compounds based therapies for cancer patients.

Keywords: Brazilian cerrado plants; glioblastoma cell lines; cytotoxic activity.

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