Effects of alkaloid dihydrocheleritrine on metabolism and viability of glioblastoma cells.

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The human glioblastoma multiforme tumor (grade IV) is among the most malignant brain tumors, with a poor prognosis. The present study evaluated the anti-proliferative effect of the benzophenanthridine alkaloid dihydrocheleritrine, extracted from Zanthoxylum stelligerum on glioblastoma cells. C6 cells were treated with 1 to 500 µM alkaloid and changes on mitochondrial metabolism and cell viability was measured by MTT test. We observed that dihydrocheleritrine induced a dose dependent reduction on cell viability. IC50 values were of 291.5 µM, 237.1 µM and 142.7 µM, after 24, 48 and 72 hours treatment, respectively. An evident reduction on cellularity was observed in C6 cultures, since 24 hours treatment with the concentration of 100 µM alkaloid. The results indicate an antitumor potential for the alkaloid dihydrocheleritrine. Studies are being conducted to determine its molecular targets and mechanisms of action, to find applications on glioma therapy. Supported by CAPES, CNPq and FAPESB.

Keywords: Alkaloids, dihydrocheleritrine, glioblastoma, cytotoxicity.
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