

ANTITUMOR EFFECT OF CRUDE CYANOBACTERIAL EXTRACT FROM HYPERSALINE SYSTEMS AGAINST GLIOBLASTOMA CELLS**I.V.G. Silva¹; M.H.C.B. Neves¹; A.R. Soares^{1,2}; R.C. Maia³; G.P.F. Lopes^{1,3}**

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Glioblastoma is the most malignant brain tumor of the central nervous system, having a high rate of proliferation and invasive growth, which limits its treatment. Cyanobacteria are photoautotrophic prokaryote organisms, which are recognized as being large producers of secondary metabolites with unique structural characteristics, many of them with biological activities known with the antibacterial, anti-inflammatory and antitumor. To evaluate the possible antitumoral effect of crude extracts from different species of cyanobacteria collected in different hypersaline environment against human glioblastoma cells. The collection of cyanobacteria of the genus *Oscillatorium sp.*, *Phormidium sp.*, *Lyngbya sp.* and *Aphanothece sp.* was made in the Lagoon of Araruama and salines. The collected material was lyophilized and extracted 3 times by static maceration in Ethyl Acetate:Methanol (1:1) over a period of 2h. MTT cell viability assay was performed with two human glioblastoma cell lines U251 and T98G. The cells were incubated with the crudes extracts at concentrations of 62,5µg/mL, 125µg/mL, 250µg/mL, 500µg/mL and 1000µg/mL maintained for 72h in 5% CO₂ at 37°C. The control condition consisted of cells cultured with the extract dilution vehicle (0.5% DMSO). The percent viability calculation was performed from the ratio: [(A_{570nm} of treated cells/A_{570nm} of untreated cells)x100]. Thin layer chromatography was performed on flexible aluminum plates having silica gel as adsorbent material; two different elution systems were used (Hex:CH₂Cl₂ 1.5:8.5) and (AcOEt 100%). Each of the plates was revealed by the Dragendorff, KMnO₄, FeCl₃, EtOH 5% H₂SO₄ and Ninhydrin reagents. In order of response in lineage U251 the crude extracts *Oscillatorium sp.* demonstrated IC₅₀=51,91µg/ml, followed by *Phormidium sp.* with IC₅₀=197,5µg/ml and the *Lyngbya sp.* with IC₅₀=299,2µg/ml. In the T98G cell line the crude extracts *Oscillatorium sp.* demonstrated IC₅₀=124.9µg/mL, followed by *Phormidium sp.* with IC₅₀=261,8µg/ml. The crude extract of *Aphanothece sp.* did not present cytotoxic activity in any of the studied cell lines. The analysis of the thin layer chromatography allowed the visualization of the presence different classes of secondary metabolites of cyanobacteria Article extracts, showing a great chemical diversity. The results suggest that the secondary metabolites of cyanobacteria *Oscillatorium sp.*, *Phormidium sp.*, And *Lyngbya sp.* of hypersaline systems can present bioactive compounds with antitumor effect *in vitro* and that these extracts present a diversity of chemical substances.

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