

BIOPROSPECTION OF NATIVE AND EXOTIC MARINE INVERTEBRATES AT ARRAIAL DO CABO AS ANTICANCER POTENTIAL AGAINST GLIOBLASTOMA

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Marine invertebrates are source of molecules that have different ecological functions and unique complexity. Bioprospecting aims to identify the application of these molecules and their isolation. Among these applications, molecules with anticancer properties are subject to bioprospecting in natural products. The hypothesis is that the cytotoxic activity of these products is capable of inhibiting proliferation of glioblastoma, the most lethal cancer in central nervous system. Therefore, the present study aimed to evaluate the anticancer potential of crude extracts from six marine invertebrates at Arraial do Cabo, Rio de Janeiro, being: two exotic invasive species as *Tubastraea coccinea* and *Didemnum* sp.; two established exotic species as *Darwinella* sp. and *Chromonephthea braziliensis*; and two native species as *Palythoa caribaeorum* and *Phyllogorgia dilatata*. To produce de crude extracts from marine invertebrates, five different individuals were collected, fixed in ethanol 90% and triturated. Then homogenates were diluted in methanol (1:5) and evaporated using rotary evaporator for 4h at 50oC. To evaluate the anticancer evaluation, the cell viability of the T98G and U251 human glioblastoma cells and the healthy human cell fibroblast cell line was analyzed by the acid phosphatase method in both monolayer and three-dimensional cell culture models. The cells were cultured with 100, 200, 400, 800 e 1000microg/mL, and 12.5, 25, 50, 100 e 200microg/mL for *Didemnum* sp. Cell viability assays were analyzed by Kruskal-Wallis non-parametric statistical test followed by multiple comparisons to control by the Dunn's test. The values were expressed by the median and their distribution (min-max) and were considered significant when $P \leq 0.05$. The anticancer evaluation, the crude extract from *Didemnum* sp. and *T. coccinea* were effective in both culture models (2D and 3D), showed selective citotoxic effect in both glioblastoma cell lines, without citotoxicity of human fibroblasts. The IC50 of the extracts was 120.6 and 432. 8 (microg /mL) for T98G cells and 63.32 and 317.2 (microg/mL) for U251 cells, of *Didemnum* sp. and *T. coccinea*, respectively. It is suggested that the exotic invasive species *Didemnum* sp. and *T. coccinea* it is found in abundance and its' crude extracts promising for the development of biotechnological products with pharmaceutical applications. Future experiments as chemical profile will be performed to identify the active biocompounds in these crude extracts and to forward to in vivo scale for brain tumor therapeutic future approach.