



ACTINOMYCETES ASSOCIATED TO ZOANTHIDS *Palythoa variabilis* AND *Palythoa caribaeorum* PRODUCE CYTOTOXIC COMPOUNDS

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Abstract: Brazilian coast shelters a great biodiversity and it is a highly promising source of marine natural products. Previous studies showed zoanthid species *Palythoa variabilis* and *Palythoa caribaeorum* produce a great variety of cytotoxic molecules [1]. Increasing number of evidences indicate the associated microbiota produces cytotoxic compounds isolated from marine invertebrates. This study aimed to isolate and to evaluate the antitumor potential of microorganisms associated to the zoanthids *P. variabilis* and *P. caribaeorum* from Pedra Rachada beach, Paracuru-CE, Brazil. Collection of the animals was performed in sandstone reefs during low tide, the samples were stored in whirl-packs and kept in ice until the processing at the laboratory. Briefly, after cutting a small piece of the colony, they were grinded and diluted in sterile sea water. The platement was carried out using two methods and three different culture media. One method consisted on direct platement of the animal's extract and the other was preceded by heating at 55°C for 10 minutes of the extract. The media used for strains growth were sea water agar (SWA) trace metal agar (TMA), starch casein agar (SCA). The petri dishes were observed until 3 months and individualized colonies were isolated based on actinomycete characteristics. The isolated strains were grown in medium A1 broth (soluble starch, yeast extract and peptone) under stirring for seven days, and then cryopreserved in 20% glycerol at -70°C. The rest of the broth was extracted with ethyl acetate under stirring for one hour to obtain the crude extract. The cytotoxic activity of the extracts was evaluated against a colorectal cancer cell line (HCT-116) by the MTT assay after 72 hours incubation [2]. The five extracts obtained from the isolated strains (BRA-352, BRA-383, BRA-384, BRA-385 and BRA-400) were tested and two of them (BRA-384 and BRA-385) showed high cytotoxic activity, with growth inhibition percentage higher than 75% at 5µg/mL. Further studies are ongoing for the isolation of the cytotoxic molecules. These results demonstrate the importance of the prospection of marine natural products along the Brazilian coast.

References:

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