

MODULATION OF NEUTROPHIL ACTIVATION BY EXTRACTS OF *GRACILARIA DOMINGENSIS*.

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Polymorphonuclear neutrophils (PMNs) are the primary effector cells in the host defense against bacterial infection and injury. During inflammatory process, PMNs release large amounts of reactive oxygen species (ROS) among a wide range of body responses. Recent trends in drug research from natural sources have shown that algae are promising organisms to furnish novel biochemically active compounds, including anti-inflammatory natural products. We investigated the effect of four extracts of *Gracilaria domingensis* (aqueous, methanolic, ethylacetate and n-hexane extracts) on the PMN oxidative burst evaluated by the luminol enhanced chemiluminescence assay (CL-Lum). PMNs were obtained from peripheral blood of healthy donors (1×10^6 cells/mL) and incubated with each extract in five concentrations (4 μ g/mL, 40 μ g/mL, 100 μ g/mL, 200 μ g/mL and 400 μ g/mL) in the presence of luminol. After this process, the cells were stimulated with phorbol-12-myristate-13-acetate (PMA, 16ng, 30min, 37°C). All the extracts tested inhibited CL-Lum from stimulated PMNs in a concentration-dependent pattern without loss of cell viability. Ethylacetate extract was the most active (95,63% of inhibition at concentration of 400 μ g/mL). The results suggest a strong anti-inflammatory activity of algae extracts leading to the elucidation of new compounds.

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