II SIMPÓSIO INTERNACIONAL EM INVESTIGAÇÕES QUÍMICO-FARMACÊUTICAS

Itajaí-2019

Área: FAR 08

LOBOPHORENES OBTAINED FROM SEAWEED *Lobophora variegata* MODULATE OF INFLAMMATORY RESPONSE OF MACROPHAGES.

Kayanny Q. Ferreira[1]*, Fábio N. Ávila[2], Pedro B. de M. Carneiro[3], Otília D. L. Pessoa[2], Marília de O. Nunes[1], Nylane M. N. Alencar[1], Diego V. Wilke[1].

[1]Núcleo de Pesquisa e Desenvolvimento de Medicamentos, Departamento de Fisiologia e Farmacologia, Universidade Federal do Ceará, CE, Brasil; [2] Departamento de Química Orgânica e Inorgânica, Universidade Federal do Ceará, CE, Brasil. [3] Campus Ministro Reis Velloso, Universidade Federal do Piauí, Pi, Brasil. *kayannyqf@gmail.com

INTRODUCTION

The *Lobophora variegata* macroalgae is rich in omega-3 fatty acids, calcium, phosphorus and vitamin C, being a species that has antioxidant, antitumor and anti-inflammatory effects. Inflammation is a fundamentally protective response of the host in response to an infection or aggression. However, prolonged inflammation is associated with a variety of progressive diseases such as metabolic disorders, neurodegenerative diseases, cardiovascular diseases and cancer. The chemical investigation of the Brazilian *Lobophora variegata* yielded epoxy lobophorene derivatives revealed a moderate antiproliferative effect against tumor cell lines (Ávila et al. 2019, J. Braz. Chem). The objective of this study was to evaluate the modulation of macrophages stimulated with bacterial lipopolysaccharide by lobophorenes extracted from *L. variegata* using *in vitro* models.

MATERIAL AND METHODS

The anti-inflammatory potential was investigated in macrophage lineage (RAW264.7). Macrophages were pretreated with polyunsaturated henoecosanic epoxides of the lobophorenes A (**1**) and B (**2**) at 3.3 and 33 μM; or Dimethyl sulfoxide (C-) ; or LPS 100 ng/mL only (C+), for 1h and then stimulated with LPS and incubated for additional 24h. The SRB assay was performed to evaluate the antiproliferative effect of lobophorenes. The Griess assay was performed to indirectly dose nitric oxide (NO); ELISA to measure the production of cytokines in addition to the detection of the transcription factor NF-κB by immunoblot. CTNBio approval number: 62251/2018.

RESULTS

Compounds **1** and **2** did not depict antiproliferative effect up to 33 μM on RAW264.7 cells. Compounds **1** and **2** inhibited the production of nitrite, IL-6, IL-1β and TNF-α production ($p<0.05$) by RAW264.7. Both compounds inhibited NF-κB expression at concentrations of 3.3 and 33 μM.

CONCLUSIONS

Two loboforenes isolated from the *L. variegata* alga inhibited macrophages activation after LPS stimulus *in vitro*.

ACKNOWLEGMENTS

The authors are grateful to Coordenação de Aperfeiçoamento de Pessoal de Nível Superior/Fundação Cearense de Apoio ao Desenvolvimento Científico e Tecnológico (CAPES/FUNCAP) and Instituto Nacional de Ciência e Tecnologia (INCTBionat).

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