

IN VITRO WOUND HEALING PROPERTIES OF BENTHONIC ALGAE

Alegna Portes Baliano¹; Maria Eduarda de Souza Barroso¹; Diógina Barata²; Rodrigo Scherer; Marcio Fronza; Denise Coutinho Endringer¹.

¹Programa de Pós-Graduação em Ciências Farmacêuticas, Universidade Vila Velha, Vila Velha, Brasil
(alegna.baliano@hotmail.com)

²Universidade Federal do Espírito Santo, São Mateus, Brasil.

Purpose of study: To investigate the in vitro wound healing effects, together with the cytotoxicity of ethanolic extracts of benthonic algae: *Gracilaria bierdi*, *Gracilaria domingenses*, *Laurencia* sp, *Padina* sp and *Sargassum* sp. Methods: The effects of ethanolic extracts of algae were investigated for their ability to stimulate proliferation and migration of fibroblasts in the scratch assay [2]. The cytotoxicity was performed using MTT assay[1]. Results: Four algae (*G. bierdi*= 74.4±11.6% *G. domingenses*= 47.2± 2.5%, *Padina* sp=26.6± 0.3% and *Sargassum* sp promoted migration and proliferation of fibroblasts at the concentration of 50 µg/ml (Figure 1). At a concentration of a 110 µg/ml any of the extracts showed cytotoxicity in cell lines RAW, L929 and OVAR. Conclusion: *Padina* sp showed the stronger ability to stimulate proliferation and migration of fibroblasts in vitro.

Acknowledgments:

The financial support of Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) (CAPES), Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Fundação de Amparo à Pesquisa do Espírito Santo (FAPES) and Universidade Vila Velha (UVV) is greatly acknowledged.

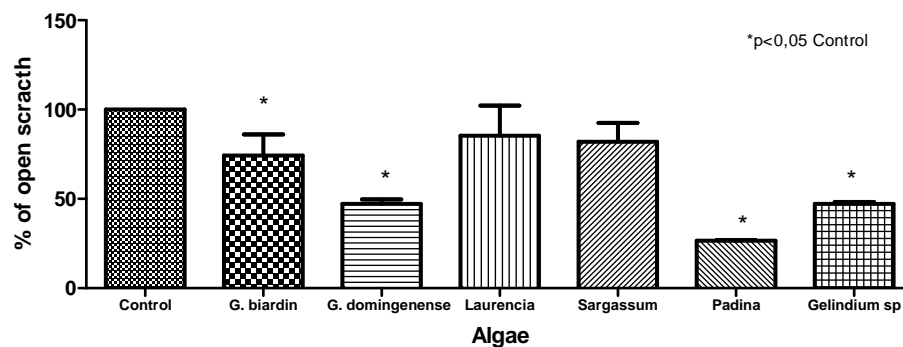


Figure 1. Effect of ethanolic extracts of algae on the migratory and proliferative activities of 3T3 mouse fibroblasts in the scratch assay. Data are expressed as percentage of cell number in the injured area, compared to the control group (DMEM medium only). Bars represent the mean ± SD of three independent experiments, *P<0.05, compared to the control group, by two-way-ANOVA.

References:

- MOSMANN, T. Rapid colorimetric assay for cellular growth and survival: application to proliferation and cytotoxicity assays. *J Immunol Methods* 65: 55–63, 1983.
- LIANG, C.C.; PARK, A.Y; GUAN, J.L. In vitro scratch assay: a convenient and inexpensive method for analysis of cell migration in vitro. *Nature Protocols* 2: 329 – 333, 2007.