ESTABLISHMENT OF IMMUNOMODULATORY ACTIVITY OF FRUCTAN FROM CRUDE EXTRACT OF Stevia rebaudiana STEM

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INTRODUCTION. Stevia rebaudiana is an Asteraceae known for the production of sweetener from its leaves. Fructans are polysaccharides used in functional foods due to their prebiotic potential and positive physiological effects in health, such as improving the efficiency of the immune system by intake of these nutrients functional. The objective of the study was to establish a protocol to evaluate the potential of action of fructans under the lymphoproliferative activity.

MATERIALS AND METHODS. Lymphocytes were obtained after centrifugation of the macerated spleens of mice with Histopaque (2000 g / 20 min). Viable cell suspensions were prepared at a concentration of 2.10⁶ cells mL⁻¹ that were incubated in 96 well plate in a CO₂ chamber (37 °C, 5% CO₂) for 2 h. Then, lymphocytes were stimulated with 100 uL of crude extract of fructans at concentrations of 10, 50, 100 and 200 mg mL⁻¹. After 72 h of incubation the cultures were treated with 100 uL of MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) at a concentration of 3 mg mL⁻¹ during 2 h. After this time was added 100 uL of DMSO to dissolve the formazan crystals resulting from reduction of MTT. The absorbance was determined in a microplate reader at a wavelength of 550 nm.

RESULTS AND DISCUSSION. The results demonstrated that fructans obtained from the S. rebaudiana stems in different concentrations tested showed a significant (P < 0.05) increase in absorbance when compared to the negative control. The higher absorbance values are related to increased of lymphocytes proliferation, as well as viability. Among fructans concentrations tested, the highest concentration (200 mg mL⁻¹) showed the higher growth rate of the lymphocytes (83%).

CONCLUSION. Therefore, in this initial screening, we can concluded that the fructans showed a potential action under lymphoproliferation, however the lymphoproliferative activity is proportional to concentration.

Keyword: Fructans, Immunomodulator, Stevia rebaudiana.

Acknowledgement: CNPq and CAPES