

Galactomannan from *Schizolobium amazonicum* Modulates Nitric Oxide and Interleukin-10 Production in Peritoneal Macrophages

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INTRODUCTION: We have shown that galactomannans from lichen and plants have immunomodulatory effects in peritoneal macrophages, by increasing the NO production and some pro-inflammatory interleukins. Now we evaluated the immunomodulating potential of galactomannan preparations extracted from seeds of *Schizolobium amazonicum*, a native Brazilian tree. **OBJECTIVE:** The aim of this study was to evaluate the effects of the native galactomannan (SAGM), its hydrolyzed form (SAGMD), and their complexed forms with oxovanadium (SAGM:VO and SAGMD:VO) on cultured peritoneal macrophages. **MATERIAL AND METHODS:** The peritoneal macrophages were collected from mice by infusing their peritoneal cavity with 10 mL ice-cold sterile phosphate-buffered saline solution (HBSS). The number of cells was adjusted and incubated for 2 h at 37 °C, under 5% CO₂ in a humidified incubator. Adherent macrophages were incubated for 48 h in the absence (control) or presence of the galactomannan preparations at various concentrations, (10-100 µg/mL) for viability, and (25-100 µg/mL) for NO and interleukins assays. The viability and NO production were measured by MTT method and Griess reagent, respectively. Interleukin levels were measured by ELISA using commercial Kits. **RESULTS AND DISCUSSION:** The viability of macrophages was not affected after 48 h of treatment with all polysaccharides; however, native galactomannan (SAGM) at the concentration of 100 µg/mL was able to increase NO production at ~230%. The levels of the pro-inflammatory interleukin 1β were not altered by the treatment with the polysaccharides (100 µg/mL). In the other hand, the production of interleukin 10, an anti-inflammatory mediator, was stimulated at ~318% and ~192% by incubation with SAGM and SAGM:VO (50 µg/mL), respectively. **CONCLUSION:** These results show that native galactomannans (SAGM) from seeds of *S. amazonicum* and its oxovanadium complexes are potential modulators of peritoneal macrophages, increasing the production of NO and interleukin-10.

Keywords: galactomannan, macrophages, NO production.

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