

Structure of an Arabinogalactan from Peach Pulp and its Effect on Peritoneal Macrophages

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The peach is a fruit widely consumed and cultivated in south of Brazil. We have now investigated the structure and the effect on mice peritoneal macrophages of an arabinogalactan from peach pulp. Peeled peaches (3 kg) were submitted to aqueous extraction, filtered, and the resulting extract was freeze-thawed. The cold water-soluble fraction was then treated with Fehling solution: the supernatant contained PAG (138 mg) which was composed of Rha, Ara, Xyl, Gal, Glc and uronic acids in a 2:41:5:45:4:2 molar ratio. Methylation data showed nonreducing end-units of *Araf* (19%), *Galp* (4%), and *Xylp* (4%), with side chains containing 3-*O*- (4%) and 5-*O*-substituted (10%) *Araf* units. The galactosyl units were mainly 3-*O*- (8%), 6-*O*- (9%), and 3,6-di-*O*-substituted (28%). The ¹³C-NMR spectrum of PAG contained C-1 signals at δ 109.2 and δ 107.3 from α-L-*Araf* and δ 103.1 from β-D-*Galp* units. An inverted DEPT-135 signal at δ 69.1 arose from substituted C-6 of *Galp* units. These results characterize PAG as a type II-arabinogalactan. To evaluate the effect of PAG on macrophage activity, it was cultivated in the absence of and the presence of PAG at concentrations of 1 to 150 µg/ml. On morphological analysis, it was observed that in the PAG-treated groups ~72% of macrophages were activated, while in the control group only ~48% had this profile. The increase in macrophage activation was observed at all tested PAG concentrations and was dose-independent. These data suggest a possible immunoestimulatory role for the peach pulp-arabinogalactan.

Supported by CNPq and PRONEX-Fundação Araucária

Key-words: Arabinogalactan; Macrophage activation; Peach pulp