

Antioxidant Activity of Glucomannans isolated from *Aloe barbadensis* Miller

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Glucomannans (acemannan) are the main polysaccharides present in aloe gel produced by different *Aloe* species. Aloe gel contains many compounds, some of which have not been characterized. Acemannan the most investigated constituent of aloe gel is an acetylated β -(1 \rightarrow 4)-mannan. Several biological properties have been described for this polysaccharide, such as: anti-inflammation, anti-cancer, antioxidant, anti-diabetes, wound healing and immunostimulant activity. Here we relate the chemical composition of a polysaccharide isolated from aloe leaves and evaluate its antioxidant activity. The polysaccharide was isolated by ethanol treatment of aloe gel and submitted to ultrafiltration through a 0.45 μ m membrane yielding a retained fraction (R045) that showed a homogeneous profile by HPSEC-MALLS-RID analysis. Monosaccharide composition determined by gas chromatography showed mannose as the major sugar (77 mol%), together with glucose (10 mol%) and small amounts of galactose (2 mol%). ¹³C-NMR spectrum presents signals at 169.6 and 20.2 ppm, corresponding to acetyl groups. The anomeric region shows two main signals at 100.2 and 97.3 ppm corresponding to 4-linked β -mannopyranosyl units and to these units 2-O-acetylated, respectively. The antioxidant activity of R045 was evaluated by the β -carotene–linoleate system. The free-radical scavenging activities were measured by using 1,1-diphenyl-2-picryl-hydrazyl. For reducing power we used OH• radicals produced via Fenton's reaction and inhibition of superoxide anion (phenazine methasulfate, NADH and nitroblue tetrazolium method) was determined spectrophotometrically. Differently from previous reports in literature the homogeneous heteromannan (R045) isolated from *A. barbadensis* in the present paper did not show antioxidant activity in the tested models. Therefore, further studies are necessary to determine which component of aloe gel is responsible for its antioxidant activity. Supported by CNPq.