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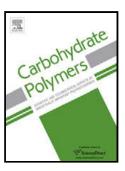
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ACCEPTED MANUSCRIPT

Purification, characterization and immunomodulatory effects of

2 Plantago depressa polysaccharides

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ABSTRACT

- 19 Four purified polysaccharide fractions from seeds of *Plantago depressa* (PDSP-1, PDSP-2,
- 20 PDSP-3 and PDSP-4) were obtained by isolation and purification using DEAE-52 cellulose and
- 21 Sephacryl S-400 HR chromatography. Basic physicochemical properties including molecular
- 22 weight, chemical composition, FT-IR and glycosidic linkage of these fractions were investigated.
- 23 They seemed to be homogeneous acidic protein-bound heteropolysaccharides with high molecular
- weight of over 1000 kDa and contained a lot more β -type glycosidic linkages than α -type. PDSP-3
- 25 mainly contained mannose, arabinose and fucose, and the others were rich in arabinose, fucose
- and galacturonic acid. The immunomodulatory effects of them were assessed by splenocyte
- 27 proliferation index and production of NO and TNF-α from macrophages. They all showed
- 28 significant immunomodulatory activities, and PDSP-3 presented the strongest effect. Their
- 29 observed differences in biological activities were probably due to their structure differences. And
- 30 monosaccharide compositions, linkage types and molecular weight may affect their
- 31 immunomodulatory activities.

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- 33 Keywords: Plantago depressa; Acidic polysaccharide; Purification; Partial structure;
- 34 Immunomodulatory effects

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