

Abstract

Cytotoxic and Antiinflammatory Activity Guided Studies on *Plantago holosteum* Scop. †

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Abstract: The genus *Plantago* (Plantaginaceae) is represented by 21 species in Turkey. *Plantago* species are used as folk medicine, especially for wound healing, antiinflammatory and anticancer effects. Iridoid glucosides, phenylethanoid and flavonoid glycosides, caffeic acid derivatives, polysaccharides and lipids are main components of *Plantago* species. In this study; aerial parts of *Plantago holosteum* Scop. were investigated by bioactivity guided fractionation via cytotoxic and antiinflammatory effects. For this purpose; aqueous extract of plant, fractions and compounds isolated from active fractions were tested for their cytotoxic effects against HEP-2 cancer, L929 and RAW 264.7 noncancerous cell lines using MTT assay while anti-inflammatory effects were monitored by the level of nitric oxide (NO) on LPS stimulated RAW264.7 macrophages. Furthermore; DPPH, NO, SO and ABTS radical scavenging capacities were also investigated to support this study. According to our results; aqueous extract and fractions showed selective cytotoxic effect on HEP-2 cancer cells and reduced the NO level with their increasing concentrations. Moreover, acteoside and isoacteoside isolated from active fractions, showed selective cytotoxic activity against HEP-2 cells and decreased the level of NO not compatible with increasing concentrations; thus cytotoxic and anti-inflammatory activities of aqueous extract of *P. holosteum* can be attributed to these compounds.

Keywords: *Plantago* species; cytotoxic effect; anti-inflammatory effect



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