

TNF- α AND INTERLEUKIN 1- β INHIBITORY ACTIVITIES OF SOME SCORZONERA SPECIES

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Among the pro-inflammatory cytokines tumour necrosis factor- α (TNF- α) and interleukin 1- β (IL-1 β) have a wide range of biological activities on numerous cell types and also reported to be involved in the pathogenesis of various inflammatory disorders (1–2). *Scorzonera* species (Asteraceae) are used to treat a variety of illnesses, including rheumatism, as well as for pain relief and wound healing in Turkish folk medicine (3–4). In current study some *Scorzonera* species; *S. latifolia*, *S. cana* var. *jacquiniana*, *S. tomentosa*, *S. mollis* ssp. *szowitsii*, *S. eriophoa*, *S. incisa*, *S. cinerea* and *S. parviflora* were evaluated for their anti-inflammatory activities by the inhibition of TNF- α and IL-1 β production on LPS-stimulated THP-1 macrophages. All extracts showed anti-inflammatory activity. However among the tested extracts *S. tomentosa* aerial part has been established as the most active one. Additionally, *S. latifolia* aerial part

extract displayed notable activity. Further studies are needed in order to clarify the bioactive principles responsible for these activities.

References: (1) Benbarek H, Deby-Dupont G, Deby C, Serteyn D. (2008). Direct stimulation of the oxidative activity of isolated equine neutrophils by TNF-alpha and IL-1beta. *Veterinary Immunology and Immunopathology*, 121: 101–106. (2) Rao PPN, Kabir SN, Mohamed T. (2010). Nonsteroidal Anti-Inflammatory Drugs (NSAIDs): Progress in Small Molecule Drug Development. *Pharmaceuticals*, 3: 1530–1549. (3) Sezik E, Yeşilada E, Tabata M, Honda G, Takaishi Y, Fujita T, Tanaka T, Takeda Y (1997) Traditional medicine in Turkey VIII. Folk medicine in East Anatolia; Erzurum, Erzincan, Ağrı, Kars, Iğdır Provinces. *Econ Bot* 51: 195–211. (4) Baytop T (1999) Türkiye’de Bitkiler ile Tedavi. Nobel Publishers, Ankara.

PHYTOCHEMICAL ANALYSIS AND DEVELOPMENT TECHNOLOGY OF DRY EXTRACT OF COMMON BEANS

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Bean pods (*Phaseolus vulgaris* L.) are among the most widely used traditional remedies against diabetes mellitus but its chemical composition is studied insufficiently. The purpose of this work was preliminary study of phytochemical composition of pods of common beans and development the technology of its extract. It was found that the pods of common beans contain flavonoids, polysaccharides, amino acids, saponins, organic acids, coumarins and sterines. According to literature antidiabetic activity of the common beans associated with the presence of flavonoids and polysaccharides. The total polysaccharides was 11,2 \pm 0,2%. Glucose, galactose, fructose, arabinose have been identified. The common beans contains flavonoids such as quercetin and kaempferol derivatives.

Flavonoid content was determined by spectrophotometry and was 0,30 \pm 0,05% in rutin equivalents. Analysis of amino acids composition by paper chromatography showed the presence of arginine, asparagine, triptofan, leucine, lysine, methionine, and tyrosine. Bismaceration with heating was used to obtain the dry extract. At the first stage 70% ethyl alcohol was used as extragent and a ratio raw materials: extragent was 1:10. The yield of flavonoids was 72%. In the second stage water was used as extragent and a ratio raw materials: extragent was 1:10. The yield of polysaccharides made 94%. The phytochemical analysis of common beans was carried out. The technology of dry extract containing the sum of polysaccharides and flavonoids from bean pods was developed.