

17. IDENTIFICATION AND DOSAGE OF SAPONINS IN THE AERIAL PARTS OF AGRIMONY AND CHICORY

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Introduction. The current direction of development of the pharmaceutical industry is the obtaining and use extracts from plants, therefore the Scientific Practical Center in the Field of Medicinal Plants (SPCFMP) of *Nicolae Testemitanu* SUMPh is studying plants as a potential source of local raw material for natural medicinal formulations.

Aim of study. Identification and dosing of saponins in the aerial parts: *Agrimoniae herba* and *Cichorii herba*.

Methods and materials. The aerial parts of *Agrimonia eupatoria* L., and *Cichorium intybus* L. were collected in the flowering period, from the collection of SPCFMP of *Nicolae Testemitanu* SUMPh, according to the pharmaceutical monograph recommendations. In order to be used for extraction, the dry vegetal products were grinded with a laboratory mill to a fine powder. The dry extracts have been obtained through fractional maceration and concentrated using rotative evaporator Laborata 4011. The quantitative analysis of saponosides was realized by Metertech UV/VIS SP 8001 Spectrophotometer, at wavelength of λ 540, according to the vanillin-sulphuric acid assay.

Results. Agrimony (*A. eupatoria*, fam. Rosaceae) is a perennial herbaceous plant known since the time of the ancient Egyptians. Several non-clinical studies reported the benefic effects of its extracts, such as antibacterial, antiviral, neuroprotective, and anti-inflammatory properties, due to the chemical compounds such as polyphenol compounds, tannins, phenolic acids, triterpenoids, flavonoids (rutin, quercetin, kaempferol, luteolin, and apigenin), essential oils, and saponins (α -amyrin, ursolic acid, euscagic acid). Chicory (*C. intybus*, fam. Asteraceae) is also a perennial medicinal plant with a long tradition of healthcare, its vegetal products stimulate digestion, detoxify the body, and decrease the cholesterol and glucose level in blood through cichoriin, arginine, choline, chicoric acid, bitter principles, latex, inulin-type fructans, tannins, flavonoids and saponins (α -amyrin, α -lactuceryl, taraxerone). Saponosides represent the secondary products of plants' metabolism and are noted for their multiple biological and pharmacological activities: antimicrobial, antiviral, anti-inflammatory, anticancer, antioxidant and immunomodulatory. By thin layer chromatography (TLC) the presence of saponosides in the aerial parts of the mentioned vegetal products was determined with an $R_f=0.32$, compared to standard saponin. Phytochemical analysis by the spectrophotometric method according to the vanillin-sulphuric acid test of the aerial parts revealed the presence of saponosides with a saponin concentration of 371.053 mg/L for *Agrimoniae herba* and 216.191 mg/L for *Cichorii herba*.

Conclusion. The need for a chemical study of *A. eupatoria* and *C. intybus* species from the SPCFMP collection of *Nicolae Testemitanu* SUMPh was established in order to use the aerial parts as sources of saponosides and new pharmaceutical forms.