RP-HPLC-UV ANALYSIS OF PHENOLIC CONTENT OF Digitalis ferruginea ssp. Schischkinii

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Digitalis is a genus in the family Scrophulariaceae. Extracts from Digitalis ferruginea ssp. schischkinii collected from the Verçenik Plateau, in Rize, were investigated for determination of their phenolic compound contents. The samples from leaves, flowers and stems of Digitalis ferruginea ssp. schischkinii were ground and extracted with hexane, dichloromethane and methanol consecutively. Methanolic extracts were evaporated and selective extraction with diethyl ether and ethyl acetate consecutively in aqueous solutions at pH=2 were applied. Acidified hydrolysis of the methanol extracts was also performed leading to the cleavage of the acid labile C-O bond between the flavonol aglycone and the attached glycoside [1]. This step leads to disappearance of flavonol-glycosides and the simultaneous increase in the amount of flavonol aglycones in the samples.

The phenolic compositions of the methanolic extracts were determined directly by reversed phase high performance liquid chromatography (RP-HPLC) with UV-vis detection at 280 nm [2]. Seventeen phenolic standards used for method development were as follows: Gallic acid, protocatechuic acid, p-OH benzoic acid, catechin, chlorogenic acid, vanillic acid, caffeic acid, syringic acid, epicatechin, p-coumaric acid, ferulic acid, benzoic acid, rutin, o-coumaric acid, cis,trans-absisic acid, trans-cinnamic acid, and quercetin. Propylparaben was used as an internal standard.

According to RP-HPLC-UV analysis, p-coumaric acid is the major component in the all methanolic extracts. Protocatechuic acid, p-OH benzoic acid, caffeic acid, ferulic acid, benzoic acid, rutin, o-coumaric acid, trans cinnamic acid and quercetin were also detected in the extracts. There was a significant increase in the amount of quercetin while rutin was not detected after hydrolysis for the extract of flower part.

REFERENCES