

PHENOLIC COMPOUNDS FROM LEAVES

OF *Hamamelis virginiana*

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The North-American bush *Hamamelis virginiana* L. (Hamamelidaceae) is successfully cultivated in the moist subtropical Adzhariya region of Georgia. The leaves and preparations of this plant are included in pharmacopeia of many countries and are widely used as a vascular circulation regulator, anti-inflammatory, antihemorrhagic, astringent, and cosmetic component [1-4].

According to the literature, the leaves and bark of *H. virginiana* contain tanning agents such as the gallic glycoside hamamelitannin, free gallic acid, flavonoids, and bitter principles [1, 4].

The leaves of *H. virginiana* grown in Georgia are rich in phenolic compounds, the total content of which reaches 14%. The phenolic compounds are isolated from aqueous alcohol extracts of the air-dried leaves (45 and 70% ethanol) with subsequent extraction by ethylacetate. The combined compounds are separated into the pure components by adsorption and partition chromatography on silica-gel, polyamide, and Sephadex (LH-20) columns using various solvent systems. The following flavonols, phenolcarboxylic acids, hydrolyzed tannides, anthocyanidines, and catechins were isolated: kaempferol (3,5,7,4'-pentahydroxyflavone), mp 278-281°C, λ_{\max} (EtOH) 368, 268 nm; quercetin (3,5,7,3',4'-pentahydroxyflavone), mp 311-314°C, λ_{\max} (EtOH), 370, 255 nm; trifolin (kaempferol-3-O- β -D-galactoside), mp 192-194°C, λ_{\max} (EtOH), 354, 267 nm [5]; kaempferol-3-O- β -D-glucuronide, mp 175-178°C, λ_{\max} (EtOH), 350, 266 nm [6, 7]; hyperin (quercetin-3-O- β -D-galactoside), mp 235-239°C, λ_{\max} (EtOH), 360, 262 nm [8]; quercituron or mikwelianin (quercetin-3-O- β -D-glucuronide), mp 189-190°C, λ_{\max} (EtOH) 357, 257 nm [7]; caffeic, chlorogenic, and gallic acids, mp 192-194, 202-204, and 250-251°C, respectively [8, 9]; hamamelitanin (2',5-digalloylhamamelose), mp 137-144°C [10]; cyanidine and delphinidine, λ_{\max} 535, 546 nm, respectively (in CH₃OH-HCl) [9, 11]; (+)-catechin, mp 175-176°C, λ_{\max} (EtOH), 280 nm [9].

The flavonoid galactosides and glucuronides are isolated for the first time from *H. virginiana*.

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