Isolation and cytotoxicity of flavonoids from Daphnis Genkwae Flos

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Abstract

For the purpose of quality analysis、we investigated polar constituents as marker substance for some traditional herbs. From Daphnis Genkwae Flos twelve flavonoids were isolated. They were identified as potassium apigenin 7-O-β-D-glucuronate (1)、apigenin 7-O-β-D-glucuronide (2)、apigenin 7-O-β-D- methylglucuronate (3)、apigenin (4)、genkwanin 5-O-β-D-primeveroside (5)、genkwanin 5-O-β-D-glucoside (6)、genkwanin (7)、tiliroside (8)、kaempferol (9)、luteolin 5-O-β-D-glucoside (10)、luteolin (11) and 7-O-methylluteolin (12). Among them、2、3、5、6、9 and 10 were known compounds、but were for the first time isolated from this material. Compound 1 was isolated from nature for the first time. The structures of 1-12 were established on the basis of their physical properties and spectroscopic evidence.

Treatments of human hepatoma HepG2 cells with 0.1 mM apigenin (4)、luteolin (11)、and 7-O-methylluteolin (12) for 48 hr caused 40% reduction on cell viability、whereas potassium apigenin 7-O-β-D-glucuronate (1)、luteolin 5-O-β-D-glucoside (10)、genkwanin (7)、genkwanin 5-O-β-D-primeveroside (5)、and tiliroside (8) caused little or no effects on the viability of HepG2 cell. These data suggest a rough structure - activity relationship of flavonoid cytotoxicity.

Key words: Daphne genkwa、flower、Thymelaeaceae、flavonoid、cytotoxicity