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[Lab. of Pharmacognosy]

Further Study on Two Chemical Races of *Salix sachalinensis* Fr. Schmidt.

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Chemical constituents in the bark of two chemical races (a flavonoid race and a phenylpropanoid race) in *Salix sachalinensis*, the existence of which had been proposed on the basis of the secondary metabolites in the leaves, were qualitatively and quantitatively compared. The result showed the comparison of secondary metabolites in the leaves between two races is efficient for Salicaceous plants chemotaxonomy.

[Phytochemistry, **30**, 1732-1733 (1991)]

[Lab. of Pharmacognosy]

Trifolirhizin Malonate from *Sophora flavescens* var. *angustifolia* and its Stability.

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Trifolirhizin 6'-malonate [(−)-maackiain 3-O-(6-O-malonyl-β-D-glucopyranoside)] was isolated from the roots and callus cultures of *Sophora flavescens* var. *angustifolia* and identified by HPLC, MS and NMR. This compound was easily hydrolyzed to trifolirhizin by heating. By the mild extraction using ultrasonication indicated that maackiain derivatives were accumulated in *S. flavescens* var. *angustifolia* as a malonyl esterified glucoside form to increase its water-solubility and to detoxify its toxicity.

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Chemotaxonomy of the Genus *Citrus* Based on Polymethoxyflavones.

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The contents of seven polymethoxyflavones [5,6,7,8,4'-pentamethoxy-, 5,6,7,8,3',4'-hexamethoxy-, 5,7,4'-trimethoxy-, 5,6,7,3',4'-pentamethoxy-, 5,7,3',4'-tetramethoxy-, 5,7,8,4'-tetramethoxy- and 5,7,8,3',4'-pentamethoxyflavone] in the fruit peels of *Citrus* species (Rutaceae) were determined by use of high performance liquid chromatography. On the basis of their composition, relative ratio and the total contents, seven distinct flavone-patterns (type I-VII) were designated. These flavone-patterns facilitate the chemotaxonomy of the genus *Citrus*. The results obtained in the present study support the morphological classification systems presented by Swingle or Tanaka except several taxa.