

[Tetrahedron Letters, 35, 6517-6520 (1994)]

[Lab. of Pharmacognosy]

Structures of a Novel Spiro-monoterpene-coumarin in *Ethulia conyzoides*.

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In continuation of studies on the terpenoid constituents of Egyptian compositaeous plants, we have isolated a spiro-monoterpene-5-methylcoumarin from *Ethulia conyzoides*. The structure was determined by some NMR techniques including 2D-NMR and X-ray analysis. Several structurally close relatives were isolated from same plant and recently an unusual [2+2] cyclo-adduct of monoterpene-5-methylcoumarin has been also isolated from *E. vernonioides*. The compound above mentioned has a different connection from known monoterpene-5-methylcoumarin, and then a new mode of connection is proposed.

[Tetrahedron Letters, 35, 7817-7820 (1994)]

[Lab. of Pharmacognosy]

A Novel Stilbene Tetramer, Leachianol C, Isolated from *Sophora leachiana*.

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In continuation of chemosystematic studies on the genus *Sophora*, we have characterized the structures of flavonoids with isoprenyl, geranyl and lavanduly group(s), flavonostilbenes, and of oligostilbenes in the roots of *S. leachiana*. The latter two compounds are exclusively abundant in the roots in this plant as compared with other *Sophora* species. In particular, the presence of such oligostilbenes formed by resveratrol oligomerization through pallidol has been first reported as naturally occurring compounds. Further investigation of the unusual oligostilbenes in the roots resulted in the isolation of another novel resveratrol tetramer consisting of a pallidol and two resveratrol units. The structure of the resveratrol tetramer named leachianol C was determined by means of 2D NMR spectroscopy including phase sensitive NOESY.

[Tetrahedron Letters, 35, 9043-9044 (1994)]

[Lab. of Pharmacognosy]

Tetrapterols A and B: Novel Flavonoid Compounds from *Sophora tetraptera*.

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In the course of chemosystematic studies on the genus *Sophora*, we have characterized various types of flavonoid compounds and stilbene oligomers in the several *Sophora* species (*S. leachiana*, *S. exigua*, *S. fraseri*, *S. koreensis* etc.). Some of the compounds were peculiar to the respective species and showed potent activities against microorganisms such as *Streptococcus mutans* and methicillin-resistant *Staphylococcus aureus* (MRSA). Further investigation of the chemical constituents in the genus *Sophora*, tetrapterols A and B, an isoflavanone and a pterocarpan with a geranyl group that ortho-substituted to a hydroxyl group on its B- or D-ring and is cyclized with the hydroxyl group to form an aromatic ring after dhydrogenation were isolated from the roots of *S. tetraptera*.