STRUCTURES OF NATURAL DIELS-ALDER ADDUCTS FROM THE ROOT BARKS OF THE MULBERRY TREE.

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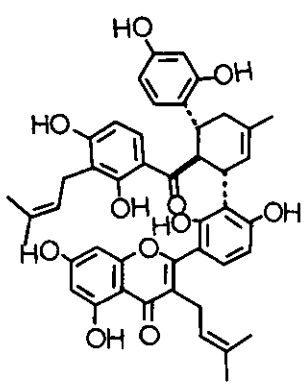
Root barks of the mulberry tree have been used in Chinese herbal medicine. We reported the structure determination of a series of natural Diels-Alder adducts, isoprenylated flavonoids and 2-arylbenzofuran derivatives isolated from the root barks and Chinese crude drug "Sāng-Bái-Pí".* Some of the Diels-Alder adducts showed a significant hypotensive effect.* We report herein the structures of kuwanons N (1) and O (2) obtained from the root barks of Morus Lhou (ser.) Koidz., and sanggenon G (3) from the Chinese crude drug. Kuwanon N (1), $[\alpha]_D^{17}$ -188°, $C_{45}H_{44}O_{11}$. Kuwanon O (2), $[\alpha]_D^{17}$ -243°, $C_{40}H_{38}O_{11}$. Sanggenon G (3), $[\alpha]_D^{16}$ -277°, $C_{40}H_{38}O_{11}$. The structures of kuwanons N, O and sanggenon G were shown to be 1-3 on the basis of spectral data, respectively. Kuwanons N (1) and O (2) are regarded biogenetically as Diels-Alder adducts of a chalcone and a dehydroprenyl flavonoid, while sanggenon G (3) is regarded as a adduct of a chalcone and a dehydrogeranyl-flavanone.



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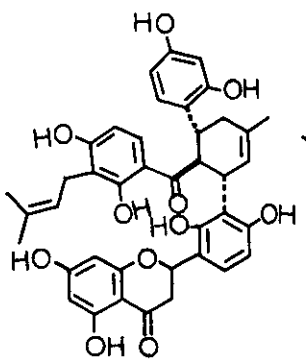

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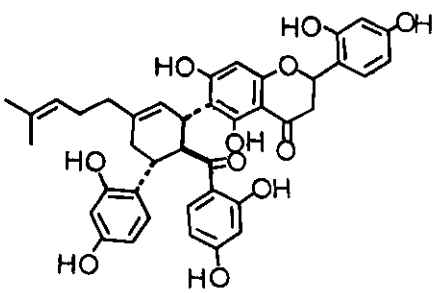

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* T. Nomura and T. Fukai, Heterocycles, 15, 1531 (1981); T. Nomura, Kagaku no Ryoiki, 36, 596 (1982).