

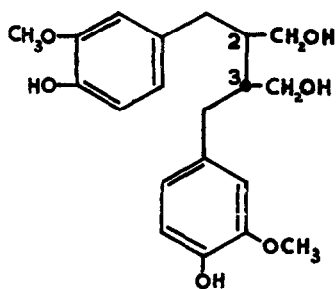
seco-isolariciresinol, A NEW LIGNAN FROM
Podocarpus spicatus

L. H. Briggs, R. C. Cambie and J. L. Hoare

Dept. of Chemistry, University of Auckland, New Zealand

(Received 14 April 1959)

IN a continued investigation of the heartwood constituents of Podocarpus spicatus we have isolated a further lignan, m.p. 113.5°, $[\alpha]_D^{25} - 35.6^\circ$, in addition to the previously reported matairesinol¹ and conidendrin.¹ The compound has formula $C_{20}H_{26}O_6$; possesses two methoxy groups and four hydroxy groups, two of which are phenolic, and is formulated as a lignan by the close similarity of the ultra-violet spectrum with those of matairesinol, conidendrin and isolariciresinol. With the assumption that the substitution pattern is of the common 4-hydroxy-3-methoxy type the structure of the lignan can only be formulated as (-)-2:3-bis(4'-hydroxy-3'-methoxybenzyl)-butan-1:4-diol (I).



¹ H. Erdtman in Modern Methods of Plant Analysis Vol. III, pp. 428-449. Springer-Verlag, Germany (1955).

The lignan has not been previously isolated from natural sources but has been detected by paper chromatography among the hydrogenation products of pinoresinol.² To indicate its structural relationship the name seco-isolariciresinol is proposed for the lignan.

The structure has been confirmed by a synthesis from (-)-matairesinol. LiAlH_4 reduction of the dibenzyl derivative of matairesinol gave a diol, hydrogenolysis of which removed the benzyl groups to give a product which was identical in all respects with seco-isolariciresinol. From the work of Schrecker and Hartwell³ the synthesis leads to the absolute configuration of seco-isolariciresinol as 2L, 3D.

² K. Freudenberg and L. Knof, Chem. Ber. **90**, 2857 (1957).

³ A. W. Schrecker and J. L. Hartwell, J. Amer. Chem. Soc. **77**, 432 (1955); **79**, 3827 (1957); J. Org. Chem. **21**, 381 (1956).