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NOTE

Stigmasta-7,16,25(26)-Triene-3-O-β-D-Glucopyranosyl-(1→5)-O-β-D-Xylofuranoside from the Roots of *Vitis adnata*

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The present communication deals with the isolation and identification of the saponin stigmasta-7,16,25(26)-triene-3-O-β-D-glucopyranosyl-(1→5)-O-β-D-Xylofuranoside from the roots of *Vitis adnata*.

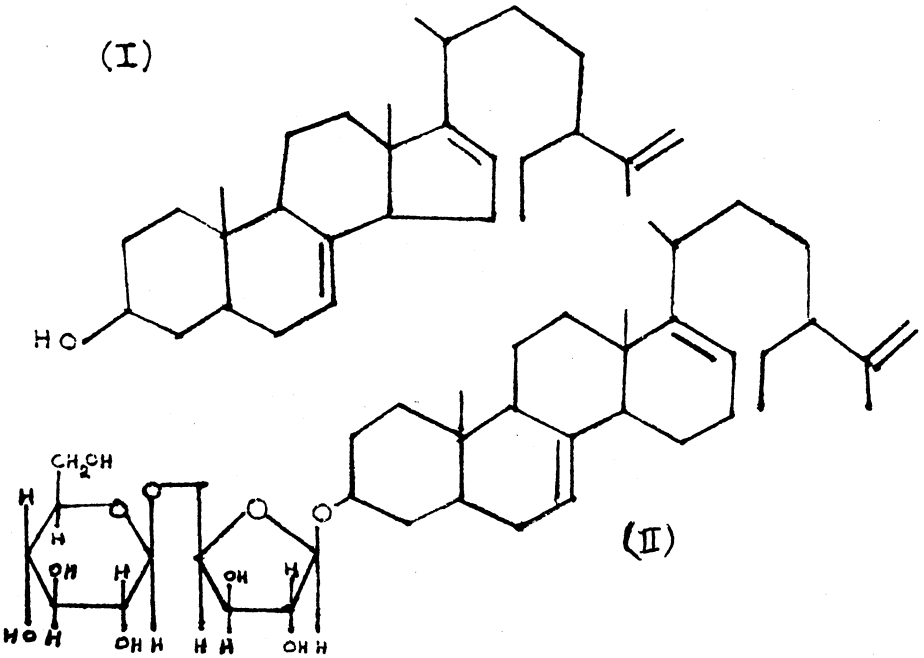
The methanol-soluble part of rectified spirit extract of *Vitis adnata*[1–3] yielded an amorphous saponin which was found to be homogeneous (TLC) adnata.

The saponin had molecular formula $C_{40}H_{64}O_{10}$, M = 704, m.pt. 158–160°, $(\alpha)_D^{22} = 21.8°$ ($CHCl_3$); had IR (KBr): 3425, 3050, 2900, 2815, 1645, 980–950, 850–800 and PMR ($CDCl_3$) of acetyl derivative ∫ 0.70 (d, 3H, sec. CH_3), 0.75 (S, 6H·2XCH_3 gp.), 0.81 (m, 3H, primary CH_3), 0.94 (S, 3H, tert. CH_3), (1.25–4.25) multiple complex. 1.27 methylene protons (5.50 dd, 1H, vinylic H), 4.30 (d, 1H, J = 7.3 Hz, 1H), 4.38 (d, ^{1}H, J = 7.2–1″ H), 3.4–4.24 (m, 11H, sugar protons), 2.02 (S, 3H, OAc at C–2), 2.09 (S, 3H, OAc at (–3′), 2.06 (S, 6H, OAc at C–2′ and (–3″), 2.03 (S, 3H, OAc at C–4″), 2.075, 3H, OAc at (–6″), MS m/z 704 (M^+), 541, 525, 410, 395, 392, 381, 314, 300, 271, 234, 216, 202.

The saponin on hydrolysis yielded a sapogenin and sugars which were identified as D-xylose and D-glucose (Co-Pc and Co-TLC). The sapogenin on crystallisation yielded yellow crystals, m.pt. 166–67°, $(\alpha)_D^{22} = 8.3$ ($CHCl_3$), $C_{29}H_{46}O$. $M^+ = 410$. Colour reactions characteristic of steroids[4,5] were given by Hirst *et al.*[5] IR (KBr): 3421, 3011, 3034, 3031, 2901, 2801, 1622, 1654, 1642, 1442, 1401, 1374, 1341, 1304, 1249, 1246, 1193, 1154, 1111, 1072, 1051, 1034, 980–953, 878–789, PMR ($CDCl_3$) of acetyl derivative ∫ 0.60 (d, 3H, sec. CH_3), 0.75 (S, 6H, 2X, CH_3 sec.), 0.80 (m, 3H, primary CH_3), 0.93 (S, 3H, tert. CH_3), 1.21–2.10 (complex m, 27 methylene proton), 2.01 (S, 3H, OAc at C–3), 5.46 (dd, 1H, vinylic H), MS: m/z (M^+).

By the help of fragmentation pattern, the sapogenin was identified as stigmasta-7,16,25(26)-trien-3β-01; m.pt. determination and Co-TLC with an authentic sample confirmed its identity as (I). The saponin (II) was found to contain one molecule each of D-xylose and D-glucose, and then D-glucose and D-xylose were present in pyranose and furanose form respectively. This was

confirmed from periodate oxidation, partial and permethylation studies. Above studies concluded that the sapogenin was attached with D-xylose unit and the



terminal sugar was D-glucose and these were linked by β-glycosidic linkages.

The roots of *Vitis adnata* were supplied by M/s United Chemical and Allied Products, Calcutta. The roots (2 kg) of *Vitis adnata* were dried, crushed and extracted with 95% ethanol; the dirty green viscous mass obtained after concentrating the extract was successively extracted with benzene, chloroform, ethyl acetate, acetone and methanol. A dirty green viscous mass was obtained after concentration of methanol-soluble fraction. This gave a precipitate after addition of excess solvent (ether). The precipitate was purified by column chromatography using silica gel. The yield of saponin (0.06) was achieved by eluate of acetone and methanol.

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