Tetrahedron Letters No. 7, pp. 30-32, 1960. Pergamon Press Ltd. Printed in Great Britain.

TURBICORYN, A NEW GLUCOSIDE OBTAINED FROM THE SEEDS OF A SACRED PLANT

M. C. Pérezamador and J. Herrán

Instituto de Quimíca, Universidad Nacional Autónoma de México

(Received 14 March 1960)

IT is well known that the Aztecs regarded several plants as sacred, examples being the hallucinatory mushrooms which have been thoroughly studied in recent years.

Another plant that seems to have been used was known as "Ololiuhqui." Although there has been some confusion in regard to the botanical identity of this plant, we were able to secure from the southern part of Mexico a sample of the seeds of Turbina corymbosa (Roth) Rasin (instead of Rivea corymbosa Hall), which is known in the place of origin by the trivial name already mentioned.[1]

From these seeds, after extraction with hexane to eliminate the oils, a new glucoside, which we propose to name Turbicoryn, was obtained from the alcoholic extract. The white crystals, obtained by purification and recrystallization from methanol-water, showed m.p. 240-241°; $[\alpha]_D^{25}$ -53°

[1] We wish to thank Mr. Thomas MacDougall for the botanical classification and the collection of the seeds.

(pyridine) (Found: C, 59.36; H, 8.44; O, 32.16. $C_{27}H_{46}O_{11}$ requires C, 59.32; H, 8.48; O, 32.19%).[2]

On acetylation of nona-acetate was obtained; m.p. 247-249°; $[\alpha]_D^{25}$ -59° (pyridine) (Found: C, 58.38; H, 7.10; O, 34.67; AcO, 41.04; M, (Rast) 1002. $C_{45}H_{64}O_{20}$ requires C, 58.43; H, 6.97; O, 34.59; 9 AcO, 41.8%, M, 925).

After hydrolysis of Turbicoryn with β-glucosidase, glucose, identified by paper chromatography, was obtained and a new aglycone Turbicorytin isolated; m.p. 151-153°; $[\alpha]_D^{25}$ -55° (pyridine) (Found: C, 65.45; H, 9.42; O, 25.15; CMe, 4.43; M, (Rast) 426. $C_{21}H_{36}O_6$ requires C, 65.59; H, 9.44; O, 24.97, CMe, 3.90%, M, 384.5).[3]

The aglycone, Turbicorytin, does not show unsaturation on test with tetranitromethane or bromine water, nor by titration with perbenzoic acid. It does not reduce Tollens reagent. On titration with periodic acid, two equivalents are found to be used, showing that the molecule contains at least three vicinal hydroxyl groups or is a bis-glycol. The product so obtained gives positive tests for aldehyde and can be oxidized to an acid or reduced with $LiAlH_4$ to an alcohol.

The acetylation of Turbicorytin with acetic anhydride-pyridine gives a hexa-acetate, m.p. 236-238°, showing that all six oxygens are in alcoholic functions; $[\alpha]_D^{25}$ -53° (pyridine) (Found: C, 62.19; H, 7.61; O, 30.40; AcO 41.8. $C_{33}H_{48}O_{12}$ requires C, 62.25; H, 7.60; O, 30.15; 6 AcO, 40.5%).

When Turbicorytin is heated with zinc dust at 400° under nitrogen, an oil is obtained and chromatography on alumina afforded a crystalline fraction,

---

[2] Micro-analysis carried out by F. Pascher, Bonn, Germany.

[3] Analysis carried out by Mr. J.M.L. Cameron, Glasgow, Scotland.

which sublimed at 60°/0.02 mm, m.p. 89-91°. In the ultra-violet it shows (in methanol) the maxima corresponding to a methyl-substituted phenanthrene, although the very small amount of this product available was not sufficient for purposes of complete characterization: λ_{max} 212 (4.42), 248 (4.47), 255 (4.58), 276 (3.96), 286 (3.94), 298 (4.04), 317 (2.48), 326 (2.38), 333 (2.53), 340 (2.28), 349.5 (2.40). The orange picrate has m.p. 132-134°.

Further work is being carried out to elucidate the complete structure of Turbicoryn and Turbicorytin and to determine whether they possess pharmacological activity.