Short Communication

Pakistan J. Sci. Ind. Res., Vol. 21, Nos. 3-4, June - August 1978

SYNTHESIS OF 2-HYROXY-2-PHENYL-1,2,3,4,6, 7-HEXAHYDRO-11, bH-BENZO (a) QUINOLIZINE AND 2-PHYNYL-1,2,3,4,6,7-TETRAHYDRO-11, bH-BENZO (a) QUINOLIZINE

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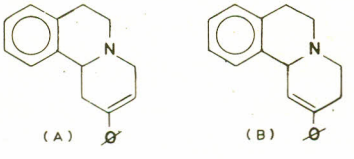
(Received September 12, 1977; revised November 6, 1977)

2-Substituted benzo (a) quinolizidine derivative– an analogue of reversed ester of pethedine – was made by the action of phenyllithium on 2-oxo-benzo (a) quinolizine to assess its biological activity. Its structure was proved with IR and NMR spectroscopy. The 2-substituted benzo (a) quinolizines are already used in medicine under the name of tetrabenazine [1].

The elimination reaction was carried on 2-hydroxy-2-phenyl-1,2,3,4,6,7-hexahydro-11, b *H*-benzo (a) quinolizine to give 2-phenyl-1,2,3,4,6,7-tetrahydro-*H*-benzo (a) quinolizine.

NMR spectra shows the presence of two isomers (a) and (b) in the ratio of 1:1.

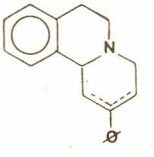


METHOD OF PREPARATION

*2-Hydroxy-2-phenyl-1,2,3,4,6,7-hexahydro-11,b*H-*benzo (a) quinolizine.*

Bromobenzene (20 g, 0.1 mole) in dry ether (50 ml) was added to lithium (1.5 g, 0.2 g-atom) in dry ether (10 ml) and refluxed until all the metal had dissolved. To this 2-oxobenzo (a) quinolizidine (8.5 g, 0.05 mole) in dry ether was added dropwise with stirring. After the reaction was over the solution was refluxed for ½ hr and allowed to stand for another ½ hr. The reaction mixture was poured on to ice-water and extracted with ether. The ether extract was dried (sodium sulphate) and the solvent was removed benzo (a) quinolizine (3 g, 20%) as a pale yellow solid. OH, 3200-3500, - 720. Further IR shows Bohlman band at 2900 cm^{-1}.

*2-Phynyltetrahydro-11*H-*benzo (a) quinolizine*



2-Hydroxy-2-phenyl-1,2,3,4,6,7-hexahydro-11 H-benzo (a) quinolizine (2 g, 0.007 mole) was dissolved in hydrochloric acid (5 ml, 10%). The solution was cooled, made alkaline with ammonia and extracted with ether (3×10 ml). The combined ether extract was dried (sodium sulphate) and the solvent was evaporated to dryness to give a solid which was crystallized to give 2-phenyltetrahydro-11 H-benzo (a) quinolizine (0.5 g, 26.7%) as yellow needles, mp 90°.

NMR spectra shows the following τ values: 2.75 (aromatic proton), 3.9 (ethylenic bond). Found: C, 87.3; H, 7.3; N. 5.1%. C_9H_{19} N requires: C, 87.3; H.7.3; N. 5.1%).

REFERENCE

1. A. Brossi, *Medicinal Chemistry* (A. Burger), Vol. 2, p. 1457.