A New Aldehyde of the Naphthyridine Series

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7-Hydroxy-1,8-naphthyridine-2,4-dicarboxaldehyde (I) has been prepared.

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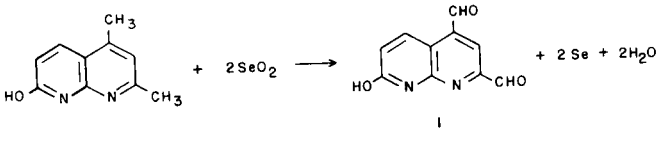
On the subject of aldehydes of the naphthyridine series nothing has been described until the present communication. 7-Hydroxy-1,8-naphthyridine-2,4-dicarboxaldehyde (I), which was necessary to continue our investigations on the metal complexes of hetarylformazanes [1], was obtained in a relatively good yield through the side-chain oxidation of the corresponding dimethyl derivatives by selenium dioxide.



I

EXPERIMENTAL

The infrared (ir) spectrum was determined on a Beckman Acculab 10 Infrared spectrophotometer and a Perkin-Elmer 557 (potassium bromide disk). Proton nuclear magnetic resonance (^{1}H-nmr) spectrum was recorded on Bruker WP 80 High Resolution Nuclear Magnetic Resonance Spectrometer. The mass spectrum was determined on VG Organic 7070 F Mass Spectrometer. Melting points were obtained on a Mettler FPI melting point apparatus and uncorrected. Elemental analysis were done by M-H-W Laboratories, Phoenix AZ, USA.

7-Hydroxy-1,8-naphthyridine-2,4-dicarboxaldehyde (I).

To the clear solution of 3 g of 2,4-dimethyl-7-hydroxy-1,8-naphthyridine in 55 ml of freshly distilled nitrobenzene 6 g of newly prepared and unsublimed selenium dioxide was gradually added with stirring. This mixture was heated under reflux condenser for 1.5 hours.

While the solution was still hot it was filtered from the metallic selenium formed as a result of the oxidation and the filtrate was distilled to remove nitrobenzene. The dialdehyde was isolated from the aqueous solution and recrystallized from water and aqueous ethanol to give yellow crystals mp 222-223° dec, yield, 1.7 g (49%); ir (Nujol): cm^{-1} 3240, 1700, 1645, 1600, 1540, 1502; ^{1}H-nmr (DMSO-d_6): ppm 6.2-8.85 (m, 3) 9.98 (d, 1, CHO), 10.45 (d, 1, CHO), 12.1-12.2 (br, 1, exchanges with deuterium oxide, OH); ms: m/e Calcd. (M^+) 202.18, observed 202.

Anal. Calcd. for $C_{10}H_6N_2O_3$: C, 59.40; H, 2.99; N, 13.85. Found: C, 59.49; H, 3.55; N, 13.63.

REFERENCES AND NOTES

[1] M. Seyhan and N. Sargin, *Chem. Ber.*, **99**, 2072 (1966).