

NOTE

Synthesis of 2,3-Disubstituted Quinoxalines

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Chalcone dibromide on condensation with *o*-phenylene diamine (OPDA) gave 2-benzyl-3-phenylquinoxalines which are synthesized and characterized and tested for antibacterial activity.

Quinoxalines are well known for their antibacterial¹, antitumour and antiviral² properties. In the present work synthesis of 2-benzyl-3-phenyl quinoxalines (III) by the reaction of substituted chalcone dibromide (I) with *o*-phenylene diamine (OPDA) (II) in presence of conc. sulfuric acid in methanol are reported (Scheme-1).

All melting points were taken in open capillary tubes and are uncorrected. IR spectra were taken on a Perkin-Elmer-377 spectrophotometer and PMR spectra were recorded on a Varian model EM-360L spectrophotometer. Satisfactory elemental analyses were obtained.

Preparation of 2-(2'-hydroxy-4'-methoxy-5'-bromo) benzyl-3-substituted-phenyl-1,4-isoxazolines (III)

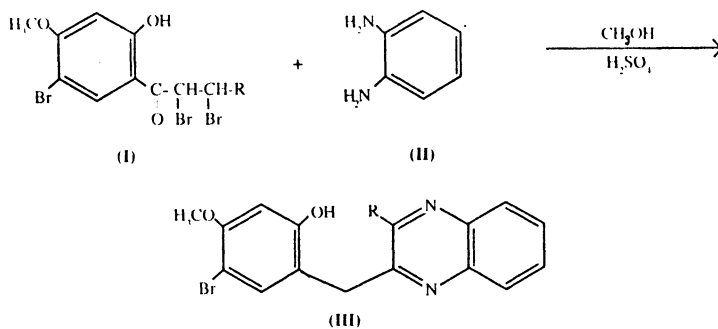
2'-Hydroxy-4'-methoxy-5'-tribromochalcone³ (I, 0.01 mol) and *o*-phenylene-diamine (II, 0.01 mol) were taken in methanol (25 mL). A few drops of conc. sulphuric acid were added and the reaction mixture was heated on a water bath for 30 min. It was diluted with water and the crude mass was extracted with solvent ether (to remove insoluble OPDA). Ether was removed and solid residue was crystallized from ethanol to obtain III.

IR (KBr) ν_{\max} 1600-1595 $\nu(\text{C}=\text{N})$, 700-695 (1,2-disubstituted benzene), 1370 $\nu(\text{—CH}_2\text{—})$, 1300 cm^{-1} $\nu(\text{C—H})$, PMR (CDCl_3) δ 2.57 ($\text{—CH}_2\text{—}$), 3.87 (—OCH_3), 6.49 (OH), 6.68-8.32 (Ar—H).

Antibacterial activity

The products were screened for antibacterial activity by cup-plate method, using chloroform as solvent at a concentration of 50 mg against *Staphylococcus aureus* and *Escherichia coli*. All compounds show mild activity against both the bacteria.

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Scheme-I

Compounds (III)	m.p. (°C)	Compounds (III)	m.p. (°C)
1. R = —C ₆ H ₅	92	8. R = 4-C ₃ H ₇ C ₆ H ₄	118
2. R = 2-OCH ₃ C ₆ H ₄	155	9. R = 3-NO ₂ C ₆ H ₄	108
3. R = 2-ClC ₆ H ₄	123	10. R = 3-NO ₂ C ₆ H ₄	124
4. R = 3-ClC ₆ H ₄	136	11. R = 4-N(CH ₃) ₂ C ₆ H ₄	102
5. R = 4-ClC ₆ H ₄	142	12. R = 4-OH, 3-OCH ₃ C ₆ H ₃	114
6. R = 2,4-(Cl) ₂ C ₆ H ₃	146	13. R = 3,4(O ₂)CH ₂ C ₆ H ₃	143

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