

## NOTE

## Synthesis and Antimicrobial Activity of 6-(H/Br)-7-Ethoxy Flavone

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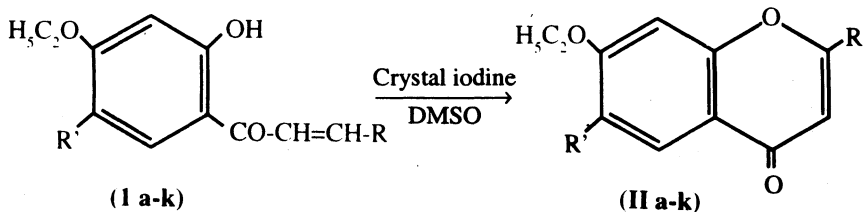
6-(H/Br)-7-ethoxy flavones have been synthesized by the condensation of 2'-hydroxy-4'-ethoxy-5'-(H/Br)-chalcone with dimethyl sulphoxide (DMSO) in the presence of catalytic amount of iodine. The structures of the compounds have been supported by elemental analysis and spectral data. These compounds were screened for antibacterial activity against *S. aureus* and *E. coli*.

The conversion of 2'-hydroxy chalcones into flavones by prolonged refluxing with  $\text{SeO}_2$  in isoamyl alcohol is time consuming and is applicable to those chalcones only which do not have free hydroxyl group other than at 2'-hydroxy chalcones into dibromide and thus it has limited applications. The use of dimethyl sulphoxide (DMSO) as an oxidizing agent for effecting this conversion has been reported by several workers<sup>1-5</sup>.

### Antibacterial activity

The compounds were screened for antibacterial activity and tested using paper disc method<sup>5</sup> at 500 ppm concentration using 5 mm disc of filter paper against gram-positive bacteria *Staphylococcus aureus* and gram-negative bacteria *Escherichia coli* and were compared with Amoxycillin and Cloxacillin. Generally most of the compounds were found to have moderate activity or inactive against both the bacteria.

All the melting points were determined in open capillaries and are uncorrected. IR spectra of the compounds were recorded on a Perkin-Elmer 577 spectrophotometer and PMR spectra ( $\text{CDCl}_3$ : TMS as internal standard) on a Varian Spectrophotometer Model No. XL-300.



R' = H or Br

### Preparation of 6-(H/Br)-7-ethoxy flavones

2'-Hydroxy-4'-ethoxy-5'-(H/Br) chalcone (**1a**, 0.012 mol) was suspended in DMSO (30 mL) and a crystal of iodine was added to it. The mixture was refluxed for 10 min, cooled, diluted with water; the solid obtained was filtered off, washed with 20% aq. sodium thiosulphate and recrystallized from ethanol to furnish 6-(H/Br)-7-ethoxy flavones (**2a**)

IR spectra: 1565  $\nu(\text{C}=\text{C})$ , 1640  $\nu(\text{C}=\text{O})$ ,  $\text{cm}^{-1}$

NMR spectra ( $\delta$  ppm): 1.6 (t, 3H), 4.4 (m, 2H), 2.6 (d, 3H), 8.2 (s, H-5), 6.5 (H-6).

The physical data of compounds (II a-k) are given in Table-1.

TABLE-1  
PHYSICAL DATA OF COMPOUND (II A-K)

No.	—R	m.p. °C (Yield %) R <sub>1</sub> = Br	m.p. °C (Yield %) R <sub>1</sub> = H
(a)	Phenyl	157 (70)	118 (60)
(b)	2-chlorophenyl	120 (60)	90 (57)
(c)	4-chlorophenyl	242 (60)	280 (59)
(d)	3-nitrophenyl	240 (65%)	108 (55)
(e)	4-nitrophenyl	—	208(60)
(f)	4-methoxyphenyl	—	120 (56)
(g)	4-hydroxy-3-methoxyphenyl	210 (55)	210 (62)
(h)	2,4-dichlorophenyl	134 (60)	155 (67)
(i)	3,4,5-trimethoxyphenyl	212 (65)	202 (60)
(j)	3,4-dimethoxyphenyl	214 (60)	125 (55)
(k)	4-bromophenyl	202 (75)	148 (70)

### REFERENCES

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(Received: 8 November 1999; Accepted: 14 December 1999)

AJC-1967