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NOTES

Antimicrobial Activity of 3-Bromoflavones

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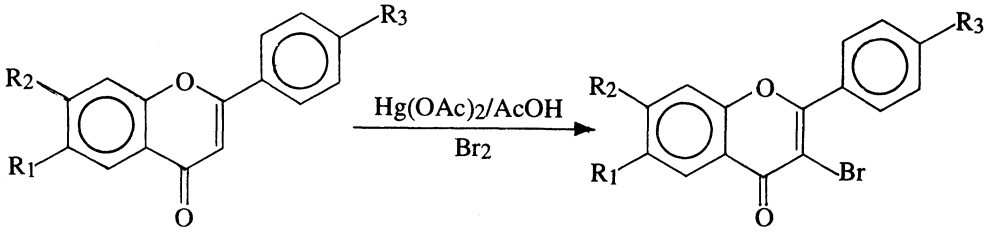
Microbial activities of 3-bromoflavones have been studied.

Flavones are natural occuring pigments and occur in all parts of the plants. Flavone is described as 2-phenyl-benzopyrone or 2-phenyl-cromone.

Structurally flavones is α, β unsaturated ketone and their chemical properties are associated with structure.



A	CH_3	H	OCH_3
B	CH_3	H	H
C	H	H	OCH_3
D	H	H	H

Scheme-1

3-Bromo flavone were prepared by using bromine in acetic acid in presnece of Hg $(OAc)_2$ as a catalyst[1].

Flavones have been found to be associated with diverse biological activities[2]. Antimicrobial activity of (A) 3-bromo-6-methol-4′-methoxy flavone (m.p. 161°C), (B) 3-bromo-6′-methyl-flavone (m.p. 151°C), (C) 3-bromo-4′-methoxy-flavone (m.p. 134°C) (D) 3-bromoflavone (m.p. 125°C) and was studied against gram positive *(Bacillus subtilis and Staphylococcus aureus)* bacteria and gram negative bacteria *(Escherichia Coli, Salmonella typhi, Klebsiella pneumoniae, Pseudomonas aeruginosa, Aerobacter aerogenes and Shigella dysentary)* at a concentration of 50 μg/ml by agar cup plate method. Methanol, the solvent was used as a control in this method. Compound 2A, 2B, 2C were found highly active against bacteria studied, while compound 2D found less active than of compounds 2A, 2B and 2C.

It is concluded from the results that the flavones containing bromine at position-3 enhances the antibacterial activity.

TABLE 1
ANTIMICROBIAL ACTIVITY OF 3-BROMOFLAVONES

Organisms tested	Inhibitory zone (cm) of 3-bromoflavons			
	A^{+++}	B^{+++}	C^{+++}	D^{++}
Escherichia coli	3.5	3.0	4.0	2.0
Basillus subtilis	4.0	4.0	4.0	2.5
Staphylococcus aureus	4.0	3.0	4.0	2.0
Pseudomonas aeruginosa	3.0	3.0	2.5	1.5
Salmonella typhi	3.5	3.0	3.5	2.5
Klebsiella pneumoniae	2.5	1.6	2.4	1.0
Shigella dyesentary	3.4	3.5	4.0	2.5
Aerobacter aerogenes	2.5	3.0	2.5	1.8

+++ = Highly active ++ = Moderately active
A 3-bromo-6-methyl-4′-methoxy flavone B 3-bromo-6-methyl flavone
C 3-bromo-4′-methoxy flavone D 3-bromo flavone

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