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Antibacterial activity of some new unsymmetrically subsituted phthalides

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ABSTRACT

A new series of unsymmetrically substituted phthalides have been synthesised and tested for antibacterial activity against the bacteria *S. aures* and *E. coli*. Some of them have shown significant antibacterial activity.

Key words: Antibacterial activity, unsymmetrically subsituted phthalides.

INTRODUCTION

In the continuation of our previous work[1-3], we synthesise some new biologically active analogues of phthalein dyes which have been screened for their antibacterial property. The synthesised compounds are unsymmetically substituted phthalides[1-5] in which the central tiphenymethane carbon is attached to two different phenyl rings. Antibacterial activity of these phthalides has been tested against the two bacteria *Staphylococcus aureus* and *Escherichia coli*.

The synthesis, purification and physical data of following unsymmetrically substituted phthalides[1-5] were reported in our earlier communication[4].

- 2(4-Ethyl-3-nitrobenzoyl-3-(2,4-dihydroxyphenyl) phthalide.
- 2(4-Ethyl-3-nitrobenzoyl-3-(2,4-dihydroxyphenyl) phthalide.
- 2-(4-Ethyl-3-nitrobenzoyl-3-(3,5-dibromo-2-, 4-dihydroxyphenyl) phthalide.
- 2-(4-Ethyl-3-nitrobenzoyl-3-(3,5-diiodo-2-, 4-dihydroxyphenyl) phthalide.
- 2-(4-Ethyl-3-nitrobenzoyl-3-(3,5-diacetoxymercuri-2-,4-dihydroxyphenyl) phthalide.

All the compounds[1-5] were tested for their antibacterial property by paper disc diffusion method[5] against two bacteria *S. aures* and *E. coli*. 4 percent solution (in chlorofom) of each compound was tested for antibacterial activity. The experiments were also performed with standard antibacterial Gentamycin and Tetracycline under same conditions. The activity of the compounds were compared with standard drugs and Zone of inhibition was calculated in mm. Results are presented in Table.

Table 1: Antibacterial activity of phthalides (1-5) and References standar drugs

Phthalides	Zone of inhibition in mm	
	S. aureus	*E.Coli*
1.	+	++
2.	++	++
3.	+	++
4.	++++	+++
Standard, Gentamycin	++++	++++
Tetracycline	++++	++++

(++) Slightly active, (+++) Moderately active and (++++) Highly active

Results of antibacterial activity of phthalides[1-5] and standard drugs have been given in Table. The results showed that the activity of the phthalides[1-5] have slightly active to highly active as compared with Gentamycin and Tetracycline. A critical examination of the activity clearly indicates that merucrated compound[5] was found to be active as standard drugs. Diido compound[4] was also highly active but less than of corresponding mercurated compund.

REFERENCES

1. Kukreti, V. and Chamali, R.P, *Acta Ciencia Indica.,* **29**(1): 41 (2003).
2. Kukreti, V. and Chamali, R.P, *Asian J. Chem.,* **29**(3-4): 1871 (2003).
3. Kukreti, V. and Chamali, R.P, *Acta Ciencia Indica.,* **23**(4): 283 (2005)
4. Kukreti, V. and Chamali, R.P, *Dyes and Pigments.,* **32**: 15 (1996).
5. Maruzzela, J.C. and Henry, P.A., *Am. Pharma. Assoc.,* **47**: 471 (1958).