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Studies of antibacterial activity of some new *N*-alkyl and *N*-alkyloxy phthalimides

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ABSTRACT

In the present investigation, all the synthesized compounds of phthalimides have been tested for their bacterial potency against different bacteria, such as *Bacillus subtilis*, *Escherichia coli*, *Proteus vulgaris* and *Staphylococcus aureus* species. © 2012 Trade Science Inc. - INDIA

KEYWORDS

Neat reaction technology;
N-alkyl phthalimide;
N-alkyloxy phthalimide;
Antibacterial activity;
SAR.

INTRODUCTION

Imide group is an interesting functionality, due to its wide presence in the natural products and in the pharmacologically active compounds. Compounds containing phthalimide moiety are distinguished by their potent fungicidal action^[1-3]. The well known products namely, Capton [N-(tri chloro methyl-thio) tetra hydro phthalimide], Folpet [N-(tri chloro methyl- phthalimide)] has industrial importance as the starting material for producing anthranilic acid by Hoffmann degradation and a large number of primary amines can be produced by the Gabriel synthesis^[4].

Phthalimides are important synthetic intermediates to prepare primary amines, agricultural pesticides and also used in preservatives, pigments and pharmaceuticals^[5-7]. The phthaloyl group is a well-established protective group for primary amines^[8] in various types of compounds, particularly peptides^[9], aminoglycosides^[10,11] and β-lactam antibiotics^[12].

MATERIALS AND METHOD

On the basis to established an effective structure activity relationship we have been synthesized compounds of N-alkyl and N-alkyloxy phthalimides by Neat Reaction Technology that is if neat reactants subjected to microwave irradiation gave the required products more quickly and with better yield in comparison to the traditional methodologies. (Scheme 1).

The homogenous mixture quickly turned solid at room temperature and led to the isolation of pure phthaloyl compounds in good yield with shorter reaction period. And tested of all synthesized compounds their bacterial potency such as *Bacillus subtilis*, *Escherichia coli*, *Proteus vulgaris* and *Staphylococcus aureus* species.

ANTIBACTERIALACTIVITY

Bioassay is an important and crucial in evaluation

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aryl amines (**1a-f**) and then coupling with phthalimides (**4a-f**) and N-hydroxy phthalimide (**5a-f**) will be beneficial in the field of pest management for designing the active molecules.

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