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SYNTHESIS AND BIOLOGICAL SIGNIFICANCE OF SOME NOVEL ISOXAZOLINE DERIVATIVES

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ABSTRACT

The isoxazolines are having several interesting applications in the field of medicinal chemistry. We have synthesized a series of 3 - {3' - (6" – methoxy - naphthalen-2"-yl) - 5' - (2" - hydroxy-4"- methoxy phenyl)-4', 5'-dihydro-1*H*- pyrazol-1'-yl}-5-(substituted phenyl) - isoxazolines **(4a-j)**. The structures of isoxazoline have been characterized on bases of elemental analysis and spectral data. The compounds were screened for their *in vitro* antibacterial activity using gram-positive bacteria and gram negative bacteria.

KEYWORDS: Isoxazoline, chalcone, antibacterial activity, heterocyclic synthesis.

INTRODUCATION

The creation of novel isoxazoline derivatives remains a principal focus of medicinal research. Even the chemistry of isoxazolines and their heterocyclic analogues has been an interesting field of study for long time. The isoxazolines have been reported to possess antifungal[1], antibacterial[2], anti HIV[3], anti-inflammatory[4], anticancer[5], and antidepressant activity.[6] In isoxazole the oxygen and nitrogen atoms are present in 1,2 relationship. The dihydro derivatives are called isoxazolines. In recent years fluorinated acetophenones find an important place in the manufacture of drugs like ciprofloxacin.[7] Moreover in corporation of fluorine can alter the course of the reaction as well as biological activities. In addition, pyrazolines and isoxazolines have played a crucial part in the development of theory in heterocyclic chemistry and also used extensively in organic synthesis.[8-12]

In this study 6-methoxy-2-acetyl naphthalene on condensation with 4-methoxy-2- hydroxy benzaldehyde according to Claisen-Schmidt condensation[13-14] gives chalcone, which on reaction with hydrazine hydrate afforded 3-(6'- methoxy- naphthalene-2'-yl)-5-(4'-methoxy-