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Syntheses, Evaluation and Characterization of Some 1, 3, 4-Oxadiazoles as Antimicrobial Agents

NITI BHARDWAJ[*], S.K. SARAF, PANKAJ SHARMA[§] and PRADEEP KUMAR[#],

Northern India Engineering College, Lucknow, India.
[§]Raj Kumar Goel Institute of Technology, Ghaziabad, India.
[#]PES College of Pharmacy, Bangalore, India.
pradeep_alpine@yahoo.co.in

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Abstract: 1,3,4-Oxadiazoles show various biological activities and have been synthesized from different compounds. 1,3,4-oxadiazole is popularly known for its antimicrobial, anti-inflammatory, pesticidal and antihypertensive activities *etc*. It is well known that the synthesis of heterocyclic compounds tend to contain multi-structure in a molecule. The ring formation involves the condensation reaction. The challenge is to develop the ring system by incorporating the indole nucleus into it through the proposed reaction scheme. There are two free positions for the substitution in the oxadiazole ring system. In this study, it was planned to incorporate the oxadiazole ring system into indole ring. Synthesis of derivatives of 1,3,4-oxadiazoles from different benzaldehydes Characterization of the synthesized compounds along with their antimicrobial activity on different strains.

Keywords: Oxadiazole, Heterocyclic compounds, Chemotherapy, Antibacterial and Antifungal

Introduction

The earliest evidence of successful chemotherapy is from ancient Peru, where the Indians used bark from the Cinchona tree to treat malaria. Modern chemotherapy has been dated to the work of Paul Ehrlich in Germany, who sought systematically to discover effective agents to treat trypanosomiasis and syphilis. Ehrlich postulated that it would be possible to find chemicals that were selectively toxic for parasites but not toxic to humans. Progress in the development of novel antibacterial agents has been great, but the development of effective, nontoxic antifungal and antiviral agents has been slow. Amphotericin B, isolated in the1950s, remains an effective antifungal agent, although newer agents such as fluconazole are now widely used. An antimicrobial is a substance that kills or inhibits the growth of microbes such as bacteria (antibacterial activity), fungi (antifungal activity) and viruses