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Synthesis and Suitable Biological Evaluation of 1-Substituted-2-Thienyl-5-(4-Chlorophenyl) Pyrazoline Derivatives

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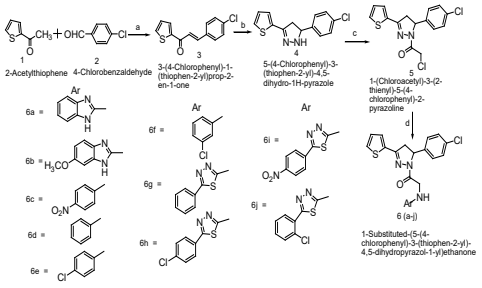
Treatment of infectious diseases still remains an important and challenging problem because of a combination factors including newly emerging infectious diseases and increasing number of multi-drug resistant microbial pathogens with particular relevance for Gram-positive bacteria. The need for new antimicrobial agents is greater than ever because of emergence for new infectious, and the potential use of multi drug resistance in common pathogen, the rapid emergence of new infectious, and the potential for use of multidrug-resistant agents. Pyrazoline is a five-membered heterocyclic ring having two adjacent nitrogen atoms within the ring. It has only one endocyclic double bond and is basic in nature. In the present study involves synthesis of 1-Substituted-2-thienyl-5-(4-chlorophenyl) pyrazoline derivatives. The synthesized compounds were subjected to antimicrobial screening against Gram-positive and Gram-negative bacteria to determine the growth inhibitory effects of the compounds. Amongst all the derivatives in series (6a-j), the pyrazoline derivatives exhibited potent antimicrobial activity. All synthesized compound possessed good to moderate antimicrobial activity comparable to standard drug ciprofloxacin. The order for the % control growth inhibition of Staphylococcus aureus was found to be 6h> 6j> 6f> 6i> 6e> 6g> 6d> 6a. All the compounds inhibited 50% of the microbial growth at the conc. <10 µg/ml. The compound 6f and 6g inhibited the total microbial growth at the conc. <10 and 65.9 µg/ml respectively.



Biography

Davinder Singh has expertise Pharmaceutical Chemistry and 30 years old. He has synthesized numerous derivatives and evaluated for antibacterial as well as anticancer activity. At present, he is working as a Assistant Professor at RIMT University in School of Pharmaceutical Sciences department. He operated all type of instruments in Chemistry lab and has a great knowledge about Mass and HNMR spectrophotometer.