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Synthesis and pharmacological evaluation of new pyridine analogues as biologically active scaffolds

Navin B Patel

Veer Narmad South Gujarat University, India

Medicinal Chemistry is most developing branch in this recent era, which deals with synthesis of pharmaceuticals. Significant pharmacological profile observed for heterocycles possess wide application as future of pharmaceutical compounds. Research in medicinal chemistry is a continuous process, due to resistance created in pathogens. Recently, we have observed biological importance of heterocyclic compounds related to pyridine, pyrimidine, quinazolinones, etc., In view of this experience and the literature survey, still there are modifications going on for heterocycles. Pyridines comprise a relatively large growing and most interesting group of antibacterial drug, which have made a major impact on the field of antimicrobial chemotherapy, particularly in the past few years. Pyridine and derivatives possess significant biological importance. We have synthesized pyridine analogues coupled with benzothiazole, piperazine, 4-thiazolidinone, 2-azetidinone, pyrimidine, 1,3,4-oxadiazole, 1,2,4-triazole, phenyl urea, phenyl thiourea. Variety of reactions involved like Ullmann condensation of anilines, 2-amino benzothiazole, piperazine, aryl urea and aryl thiourea with 2-chloro pyridine-3-carboxylic acid. Cyclization of Pyridyl Schiff base performed to synthesize 4-thiazolidinone and 2-azetidinone. Triazole synthesized from pyridyl 1,3,4-oxadiazole and pyridyl pyrimidines from cyclization of chalcones with urea, thiourea and guanidine nitrate. Study of antimicrobial activity have been performed against gram positive, gram negative and fungal microbes as well as Mycobacterium tuberculosis, which developed vast idea for structure activity relationships of library of pyridine analogues. All the compounds were evaluated for antimicrobial activity.

Biography

Navin Patel is a Professor and Head, Department of Chemistry, Veer Narmad South Gujarat University, Surat, Gujarat (India). He is a Vice president of Indian Council of Chemists. He has 35 years of teaching and research experience, working with quinolones, quinazolinones, triazoles, oxadiazoles, thiazoles, pyridine and Pyrimidine, etc related heterocycle by random synthesis and microwave synthesis, molecular docking and stimulation studies moreover testing their biological activities. He has guided 35 PhD'S. and 18 M.Phils. In Synthetic Medicinal Chemistry published more than 150 research papers in national and international journals, reviewers of many reputed journals. He has presented and given talks and also chaired in many conferences.

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