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Synthesis docking studies and biological evaluation of some novel 1,2,4-triazolo[3,4-b][1,3,4]thiadiazole tagged thieno [2,3-d] pyrimidine derivatives

Settypalli Triloknadh

Sri Venkateswara University, India

Thienopyrimidines occupy a special position among fused pyrimidines compounds these derivatives are characterized by a very broad spectrum of biological activities, such as antimicrobial, antiviral, anticancer, anti-inflammatory, antihistaminic, antipyretics, anticonvulsant, and immunostimulant properties. Along with some other pyrimidine systems containing an annulated five membered hetero aromatic ring, thienopyrimidines are structural analogs of biogenic purines and can be considered as potential nucleic acid antimetabolites. Various thienopyrimidine analogues attracted additional attention due to the broad spectrum of biological properties, they exhibited with a variety of annulations and functional group manipulations possible, some thieno[2,3-d]pyrimidine derivatives have shown interesting biological activity including as Hsp90 ATPase inhibitory, Tk inhibitors, DHFR inhibitory, CDK4 inhibitory activities. Furthermore various 1,2,4-triazole and their fused heterocyclic derivatives are also shows important biological properties like antimigraine, antiviral and analgesic activities. In addition fused heterocycle of 1,2,4-triazole i.e., 1,2,4-triazolo[3,4-b][1,3,4]thiadiazole also shows wide spectrum of biological activities including anti-fungal, antibacterial, antiviral, anthelmintic, antitumor, analgesic and anti-inflammatory activities. In view of their biological significance and in continuation of our ongoing research work to find out bioactive thienopyrimidines, the present work is an effort towards the synthesis and biological evaluation of some new 1,2,4-triazolo[3,4-b][1,3,4]thiadiazole tagged thieno[2,3-d]pyrimidine derivatives. All the synthesized compounds are characterized by the spectral analysis. Docking and anti microbial activities of the synthesized are also studied.

Biography

Settypalli Triloknadh is currently doing PhD as UGC-SRF fellow under the supervision of Prof. C Venkata Rao in the Department of Chemistry, Sri Venkateswara University Tirupati, Andhra Pradesh, India. He has qualified national level Joint CSIR-UGC-JRF & NET exam under JRF category held in June-2011. He has attended several National & International conferences. He has been awarded the Prof. G L Talesara award-2014 for the Best Oral Presentation of his paper in Organic Chemistry Section in the 33rd Annual National Conference of Indian Council of Chemists held at Department of Applied Chemistry, Indian School of Mines, Dhanbad during 15th-17th December, 2014. He has three years of research experience in organic synthesis towards the synthesis of heterocyclic compounds.

settypallitriloknadh@gmail.com

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