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Synthesis, Characterization and Biological Evaluation of 4-(4-Bromo-1-Hydroxy Naphthalen-2-Yl)-6-(4-Methoxy Phenyl)-5,6-Dihydropyrimidine-2(1h)-One

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Abstract: 1-(4- Bromo -1-hydroxynaphthalen-2-yl)-ethan-1-one was prepared by refluxing 4bromonaphthalen-1-ol with glacial acetic acid in presence of fused $ZnCl_2$. By condensing 1-(4- bromo -1-hydroxynaphthalen-2- yl)-ethan-1-ones with 4- methoxy benzaldehyde, to prepared by 1-(4- bromo -1hydroxynaphthalen-2-yl)-3-(4-methoxy phenyl)-prop-2-en-1-one were synthesized.1-(4- bromo -1hydroxynaphthalen-2-yl)-3-(4-methoxy phenyl)-prop-2-en-1-one, urea and concentrated HCl in DMF were added and refluxed. Cool and pour in crushed ice. Treat it with cold NH_4OH solution to obtain titled compounds. The compounds thus synthesized have been characterized by physical and spectral data. All of these titled synthesized compounds have been screened for antimicrobial study and are found to possess excellent antimicrobial activities.

Keywords: Antimicrobial activities, cold NH₄OH solution, concentrated HCl in DMF.

REFERENCES

- [1]. Sandhya Patil, Leena Sarkar, A Review: Alternative Methods of Preparing 1, 4- Dihydropyridine Derivatives by Hantzsch Reaction. Journal of Scientific Research, 65(2), 2021: 87-91.
- [2]. Loide O. Sallum, Jean F. Custodio, Allane C. Rodrigues, Jean F. Ribeiro, Beatriz P. Bezerra, Zeitschrift f
 ür Kristallographie - Crystalline Materials, 234 (10), 2019:657-669.
- [3]. Pritesh R. Jain, Ashok A. Patil. Synthesis of biologically and pharmacologically active dihydropyrimidones/thiones: a review. World J. Pharm. Res, 7(11), 2018:410-427.
- [4]. Rui Kong, Shuai B. Han, Jing Y. Wei, Xiao C. Peng, Zhen B. Xie, Shan S. Gong, Qi Sun.Highly Efficient Synthesis of Substituted 3,4-Dihydropyrimidin-2-(1*H*)-ones (DHPMs) Catalyzed by Hf (OTf)₄: Mechanistic Insights into Reaction Pathways under Metal Lewis Acid Catalysis and Solvent-Free Conditions. Molecules, 24 (364), 2019: 1-14.
- **[5].** ShipraBaluja, RaviGajera, Sumitra Chanda.Antibacterial studies of dihydropyrimidinones and pyrimidinethiones. J Bacteriol&Mycol Open Acess, 5(6), 2017:414-418.
- [6]. Mohamed O. M'hamed, Abdulrahman G. Alshammari, Lemine O.M, Green High-Yielding One-Pot Approach to Biginelli Reaction under Catalyst-Free and Solvent-Free Ball Milling Conditions, Appl. Sci. 6(12), 2016:431.
- [7]. Kasza, Ágnes, Hunya, Ákos, Frank, et al. Dihydropyridine derivatives modulate heat shock responses and have a neuroprotective effect in a transgenic mouse model of Alzheimer's disease. Journal of Alzheimer's Disease, 53 (2),2016: 557-571.
- [8]. Vinod M. Sherekar, Subodh E. Bhandarkar.Synthesis and Biological Studies of 4-(4-chloro-1hydroxynaphthalen-2-YL)-6- aryl-5,6-dihydropyrimidin-2(1H)-one.Am. J.PharmTech Res, 6(5),2016: 560-564.
- [9]. Vinod M. Sherekar; Subodh E. Bhandarkar. Synthesis, characterization and biological evaluation of 4-(4-bromo-1-hydroxynaphthalen-2-yl)-6- aryl-5,6-dihydropyrimidin-2(1h)-one.World J. Pharm. Res, 2(6),2016: 275-279.

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- [10]. Basavaraj Padmashali, Ballekere N. Chidananda, BanuprakashGovindappa, Siddesh M. Basavaraj, Sandeep Chandrashekharappa, Katharigatta N. Venugopala.Synthesis and characterization of novel 1,6dihydropyrimidine derivatives for their pharmacological properties.J. Appl. Pharm. Science, 9(5), 2019: 133-140.
- [11]. Michele De Luca; GiuseppinaLoele; GaetanoRagno.1,4-Dihydropyridine Antihypertensive Drugs: Recent Advances in Photostabilization Strategies. Pharmaceutical, 11(2), 2019:85.
- [12]. Muhammad J. Ahmad, Syed F. Hassan, Riffat U. Nisa, Khurshid Ayub, Muhammad S. Nadeem, Samina Nazir, Farzana L. Ansari, Naveeda A. Qureshi, Umer Rashid. Synthesisin vitro potential and computational studies on 2-amino-1, 4-dihydropyrimidines as multitarget antibacterial ligands.Med Chem Res, 25 (9), 2016:1877-1894.
- [13]. Marta Pineiro, Bruno F. Nascimento, Antonio R. Gonsalves, Sandra C. Nunes, Alberto A. Pais. On the Microwave-Assisted Synthesis and Oxidation of Biginelli Compounds: Comparative Study of Dihydropyrimidinones and ThionesOxidaton.Curr.Microw. Chem,1(2), 2014:119-134.
- [14]. Ramandeep Kaur, Sandeep Chaudhary, Kapil Kumar, Manish K Gupta, Ravindra K Rawal. Recent synthetic and medicinal perspectives of dihydropyrimidinones: A review. Eur J Med Chem, 132, 2017: 108-134.
- [15]. Vishvanath D. Patil, Prathamesh V.Gidh, Amruta M. Salve.SiO2.TTC: Efficient Catalyst for Synthesis of 3,4-Dihydropyrimidine-2(2H)-one/ Thiones. Der ChemicaSinica, 8 (2), 2017: 247-253.
- [16]. Katharigatta N.Venugopala, Reshme Govender, Mohammed A.Khedr, Rashmi Venugopala, Bandar E.Aldhubiab, Sree Harsha, Bharti Odhav. Design, synthesis, and computational studies on dihydropyrimidine scaffolds as potential lipoxygenase inhibitors and cancer chemopreventive agents, Drug Design, Development and Therapy, 9, 2015: 911-921.