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Journal of Industrial and Environmental Chemistry
Journal of Industrial and Environmental Chemistry
ISSN 2591-7331(E)
2020
Vol.04 No.6

Synthesis, Characterization And Biological Studies of Carbamoylbenzene-1,5-dicarboxylic Acid Analogues

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Abstract

New classes of dicarboxylic acid analogues were synthesized to explore their potentials as new lead drug candidates. The syntheses involve nucleophillic addition of different substituted benzylamine, aniline, alkylamine and 4-hydroxyl-L-proline with Carbamoylbenzoic acid. The compounds were fully characterized using spectroscopic techniques. The results of the antimicrobial activity as indicated by the zone of inhibition showed that Z10 is the most active against pseudomonas aureginosa (32 mm) and least active against candida stellatoidea (27 mm) and Vancomycin Resistant Enterococci (VRE) (27 mm). While Z7 shows the least zone of inhibition (22 mm) against Methicilin Resistant Staph-aureus (MRSA). The MIC results showed that Z10 inhibits the growth of tested microbes at 6.25 µg/mL, while Z9 and Z12 inhibits the growth of most microbes at 12.5 µg/mL, therefore showed the least MIC. The Minimum Bactericidal/Fungicidal Concentration (MBC/MFC) results revealed that Z10 has the lowest bactericidal/fungicidal effect, on the test microbes at a concentration of 12.5 µg/mL, with the exception of candida stellatoidea and Vancomycin Resistant Enterococci (VRE) with MIC of 25 µg/ml. While compounds Z9 and Z12 were bactericidal/fungicidal concentration of 25-50 µg/mL. The results shows that the target compounds (Z1-3, 4-12) possess potentials that can be explored in the search for antimicrobial agents.

Biography:

Abdulrazaq Tukur has completed his undergraduate studies from Ahmadu Bello University Zaria Nigeria, where he obtained his BSc. In Chemistry in the year 2011, and Masters in Organic Chemistry in 2016, and a PhD candidate in the same Institution from 2016 to date. He has publications both Internationally and locally, his area of expertise is Organic Chemistry, covering Organic synthesis and Natural Products.

21st International Conference on Environmental Chemistry and Engineering; August 19-20, 2020 Webinar

Abstract Citation:

Abdul Raza, Synthesis, Characterization And Biological Studiesof Carbamoylbenzene-1,5-dicarboxylic Acid Analogues, Environmental chemistry 2020, 21st International Conference on Environmental Chemistry and Engineering; August 19-20, 2020Webinar
https://environmentalchemistry.chemistryconferences.org/abstract/2020/synthesis-characterization-and-biological-studies-of-carbamoylbenzene-1-5-dicarboxylic-acid-analogues