7th Pharmaceutical Chemistry Conference

May 24-25, 2022 | Webinar

Volume: 12

Molecular docking, synthesis, characterization,toxicity studies and in-vitro anti-bacterial activity of some novel n-substituted benzimidazole derivatives techniques

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Benzimidazole is a fused heterocyclic compound containing phenyl ring fused with imidazole nucleus. Due to wide variety of bacterial resistance and toxicity, it is inevitable to design new molecules having better anti-bacterial activity with low toxicity. Hence, novel N-Substituted benzimidazole derivatives were designed and synthesized. The Designed five compounds were subjected to molecular docking studies by using Argus lab 4.0 software. The docked molecules were synthesized by Mannich base reaction and the structure was elucidated by spectral and analytical studies like UV, IR and NMR spectroscopy. In-silico toxicity studies and in-vitro antibacterial activity was carried out. The docked molecules (C1 C2 C3 C4 and C5) are having moderate to better activity (-7.0306 to-10.5517). The synthesized compound C1 which exhibit the zone of inhibition in the highest concentration, i.e., 100 µg/ml was found to be >31 mm against two strains of bacteria.

Biography

I am done B.pharmacy under the Tamil Nadu Dr MGR medical university now I am currently pursuing post graduate in pharmaceutical analysis.

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