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Synthesis of novel disubstituted oxadiazole derivatives and antimicrobial activity

Serkan Levent and **Ulviye Acar**
Anadolu University, Turkey

In the last few decades, infectious diseases remain a major health problem worldwide and continue to challenge both medical and pharmaceutical communities. Even though there are several drugs are available in the market to cure infectious diseases, these drugs are being used enormously without precautions, owing to which microbial pathogens have developed resistivity and meanwhile a number of new resistant pathogens are emerging. Hence, there is a constant need to develop antimicrobial drugs. The 1,3,4-oxadiazole derivatives have been found to exhibit antimicrobial. Benzimidazole compounds have also important role on the treatment of bacterial infections. Benzimidazole is structurally similar to purine, and its derivatives could compete with purines. In the view of such information, we design a new series of 2-((5-(4-(5(6)chloro-benzo[d]imidazol-2-yl)phenyl)-1,3,4-oxadiazol-2-yl) thio)-derivatives. Structures of the compounds were confirmed by IR, ^{1}H-NMR, ^{13}C-NMR and MS spectroscopic data and Elemental analyses results. Antimicrobial activities of the compounds against resistant human pathogenic microorganisms were evaluated according to the CLSI methods. Final products were tested for their *in vitro* growth inhibitory activity against human pathogenic Escherichia coli (ATCC 35218), *Escherichia coli (ATCC 25922), Staphylococcus aureus (ATCC 25923), Pseudomona aeuroginosa (ATCC 27853), and yeast as Candida albicans (ATCC 90028), Candida glabrata (ATCC 90030), Candida krusei (ATCC 6258), and Candida parapsilosis (ATCC 22019).* Chloramphenicol and Amphotericin B were used as control drugs. The compound 4i containing 3,4-dihydroxyphenyl moiety in its structure exhibitied the highest activity against *Candida krusei ATCC 6258, Candida glabrata ATCC 90030, Candida parapsilosis ATCC 22019.*

Biography

Serkan Levent is a Research Assistant in Anadolu University Faculty of Pharmacy, Department of Pharmaceutical Chemistry. He has completed his Master's degree in 2014 at Gazi University Faculty of Pharmacy, Department of Pharmaceutical Chemistry.

serkanlevent@anadolu.edu.tr

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