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Synthesis, antimicrobial and antifungal activities of novel peptide derivatives based on dibenzofuran-2-sulfonyl-chloride and N1, N3-bis (1-hydrazinyl-1- oxopropan-2-yl) isophthalamide

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In our previous studies of peptide candidates, good antimicrobial properties [1-3] and anticancer activities [4, 5], Thus, this study aims to conjugate amino acid and peptide derivatives with dibenzofuran-2-sulfonyl-chloride (scheme I) and N1, N3-bis (1-hydrazinyl-1- oxopropan-2-yl) isophthalamide (scheme II). Variable synthetic coupling methods, in solution, as well as experimental reaction conditions, were experimented. The candidates were, chromatographically purified and spectroscopically characterized. All the newly synthesized amino acid and dipeptide compounds were fully characterized by means of their spectral data. The *in vitro* antimicrobial evaluation of the obtained compounds was tested against different types of pathogenic microorganisms: Gram-positive, Gram-negative bacteria and fungi, some of compounds were found to possess significant antimicrobial properties. It may be concluded that the suggested molecular structural features for these novel peptide candidates based on Dibenzofuran-2-Sulfonyl-chloride (scheme I) and N1, N3-bis (1-hydrazinyl-1- oxopropan-2-yl) isophthalamide (scheme II), seemed significant for prospectively investigable novel antimicrobial candidates.

Biography

Gaber O. Moustafa has completed his Ph.D. (Organic Chemistry) May 2014, from chemistry Dept, faculty of science, Banha University, Egypt and he has the best Doctoral Thesis 2014 in the field of chemical sciences and their applications award by the National Research Centre and postdoctoral studies from Rennes University (France). He has published 4 papers in the last year only (2017), now he worked as the researcher in peptide chemistry dept., National Research Centre, Cairo, Egypt.

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