

ORAL PRESENTATIONS

SYNTHESIS AND INHIBITORY POTENTIAL OF UGI PRODUCTS TOWARDS BUTYRYLCHOLINESTERASE

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Multicomponent reactions, such as Ugi four-component reaction, are efficient and powerful synthetic strategies for the generation of structurally complex organic molecules, peptidomimetics, with high atom economy and synthetic efficiency. By combining an amine, an aldehyde (or ketone), a carboxylic acid, and an isocyanide in a one-pot transformation, this multicomponent reaction enables the efficient exploration of chemical space and the preparation of compound libraries of biologically active molecules. The obtained peptide-like scaffolds often mimic natural products or bioactive peptides, thereby enhancing their probability of interacting with biological targets such as enzymes, receptors, or nucleic acids [1]. Some Ugi products have been investigated for their cholinesterase inhibitory activity, which is particularly important in the treatment of neurodegenerative diseases like Alzheimer's or Parkinson's disease [2,3].

In this work, we have synthesized a series of structurally related peptide-like compounds through the Ugi reaction by using different *N*-*tert*-butoxycarbonyl (Boc) protected amino acids or benzoic acid with formaldehyde / acetone, benzylamine / isobutylamine and *tert*-butyl / benzyl isocyanide. All compounds were synthesized by classical organic synthesis methods and by microwave-assisted organic synthesis. The structure of all prepared compounds was determined by spectroscopic (1D and 2D ^1H and ^{13}C nuclear magnetic resonance spectroscopy) and spectrometric (high-resolution mass spectrometry) methods. The inhibitory potential of all prepared compounds towards the enzyme butyrylcholinesterase (BChE, E.C. 3.1.1.8.) isolated from horse serum was determined by the Ellman method [4].

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