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Comparison of Two Different Methods for Peptide Synthesis

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Abstract : Carnosine, an endogenous peptide consisting of β-alanine and L-histidine has a variety of functions to mention: antioxidant, antiglycation, and reducing the toxicity of metal ions. It has therefore been proposed to act as a therapeutic agent for many pathological states, although its therapeutic index is limited by quick enzymatic cleavage. To overcome this limitation, there's an urge to create new derivatives which might become less potent to hydrolysis, while preserving the therapeutic effect. The poster summarizes the efficiency of two peptide synthesis methods, which were: (1) the mixed anhydride with isobutyl chloroformate and N-methylmorpholine (NMM) and (2) carbodiimide - mediated coupling method via appropriate reagent condensing, here – CDI. The methods were used to obtain dipeptides which were the derivatives of carnosine. Obtained dipeptides were made in the form of methyl esters and their structures will be confirmed 1H NMR, 13C NMR, MS and elemental analysis techniques. Later on, they will be analyzed for their antioxidant properties, in comparison to carnosine.

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