UNIVERSITI TEKNOLOGI MARA

SYNTHESIS OF PEPTIDES BASED ON γ-BUTYROLACTONE SCAFFOLDS

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ABSTRACT

As part of a research endeavor in investigating the synthetic utility of enantiopure azido trimethylsiloxy cyclohexene silyl ether as potential intermediates for bioactive compounds, two novel trimethylsiloxy cyclohexene peptides were synthesized. *N*Boc-isoleucine-cyclohexene **111 a** and *N*Boc-leucine-cyclohexene **111 b** were synthesized *via* reduction amination of azide, Boc protection of amine termini, deprotection of Boc group and coupling reaction with natural amino acids (*N*Boc-isoleucine and *N*Boc-leucine) using peptide coupling protocol. Compound **111 b** was then used as the intermediate for the synthesis of incorporation γ-butyrolactone-peptide *via* oxidative cleavage of cyclohexene double bond to afford compound **112**. This compound, in turn, was used as an intermediate to afford a novel γ-butyrolactone amino ester **113**. These compounds can be act as versatile intermediates for further research endeavor and results extracted from this study might be used to design remarkable synthetic methodology and enhances scientific knowledge.

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