SYNTHESIS AND DECARBOXYLATION OF β,β-DIKETOESTER TOWARDS THE SYNTHESIS OF DYSIDAMIDE C

ALIYIN BINTI ABDUL GHANI

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ABSTRACT

SYNTHESIS AND DECARBOXYLATION OF ß,ß-DIKETOESTER TOWARDS THE SYNTHESIS OF DYSIDAMIDE C

In this research, glycine methyl ester which was used as a starting material was reacted with methyl malonate potassium salt with the presence of dicyclohexylcarbodiimide (DCCI) *via* condensation reaction. The product was tested on a TLC plate where several spots were observed indicating major products, some unreacted materials and impurities, therefore the synthesized compound was purified via recrystallization technique. The product was cyclized by reacting it with sodium methoxide, produce by reaction between sodium metal and anhydrous methanol generated *in situ*, which acts as a base and abstracts the acidic proton bonded to the carbon in between the carbonyl groups forming an enolate ion *via* Dieckmann cyclization. The cyclized product undergo decarboxylation reaction by reacting it with acetonitrile and the methyl ester group at C3 position on the pyrrolidinone ring was cleaved, thus removal of carbon dioxide. All the synthesized compounds were characterized by using spectroscopic techniques such as ^{1}H NMR, ^{13}C NMR and FTIR.

CHAPTER 1

INTRODUCTION

1.1 Definition of organic synthesis

Organic synthesis is a chemical synthesis which revolves around the formation of organic compound from simple precursors which undergo several steps until the final product is obtained. The chemical compounds made in each step are called intermediates which reacted with appropriate reagents in suitable methods to form the desired product with good yield and high purity. However, the synthesis is not as easy as in order to convert the starting material to the desired product. There will be numerous steps involving adding, changing or removing functional groups and steps that build up carbon atom framework to be done in order to obtain the desired final product.