UNIVERSITI TEKNOLOGI MARA

SYNTHESIS OF DECYL MANNOSIDE

MUHAMAD BAIHAKHI BIN SHAMSUDIN

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ABSTRACT

A new mixtures of mannose and decanol was synthesis. This synthesis main objective was to produce synthetic glycosides as one of the alternative for natural mannoside which consist of single alkyl chain with mannose head group. Three major procedures involved in the synthesis of decyl mannoside which are peracetylation, glycosylation and followed by deacetylation procedure. NMR analysis was used to determine the structure of the product and to analyze the product purity. The product which is decyl mannoside has purity of 67% due to some error might occur during synthesis procedure. Overall, the experiment was succesfull since the product was produced.

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CHAPTER 1

INTRODUCTION

1.1 RESEARCH BACKGROUND

Glycolipids are amphililic compounds that demonstrating the properties of liquid crystal because of the tendency of de-mixing tendency of the polar part of the molecule as well as the non-polar part (Hashim, Hashim, Rodzi, Hussen, & Heidelberg, 2006). Alkyl Poly-Glycosides (APGs) which is known its characteristics such as biodegradable, non-ionic surfactants, have given several importance in industrial research. There is difference in structure form among these technical glycolipids which is they only comprise of one alkyl chain also natural compounds which is they typically contain a double alkyl tail. These differences contributes to exhibit different phase behavior, thus it will restrict the use of APGs in the field of membrane related research. Only a smectic mesophase in pure condition can formed due to the single chain glycolipids. For natural, double chain glycolipids, though, columnar phases have been reported (Von Minden et al., 2000). Major issue towards research in biological studies due to the differences in phase structures. In this research, with concern regarding the natural mannoside which simple structure that comprise of single alkyl chain with mannose head group, production of synthetic glycoside will be done as alternative for the natural mannoside

1.2 PROBLEM STATEMENT

Production of synthetic glycoside is alternative of natural mannoside which simple structure consist of single alkyl chain with mannose head group

1.3 OBJECTIVES

1. To synthesis decyl mannoside for production of synthetic glycoside