

UNIVERSITI TEKNOLOGI MARA

**SYNTHESIS OF 4-ACETOXY-11,13-
DIBENZYLOXYSTILBENE**

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ABSTRACT

The main objective of this project is to synthesize a stilbene analogue, 4-acetoxy-11,13-dibenzyloxystilbene at large scale in order to supply for bioactivity and reactivity investigations by other researchers. Three established reactions have been used in order to accomplish the project. First, the protection of *p*-iodophenol using acetic anhydride to yield *p*-iodophenylacetate followed by the protection of 3,5-dihydroxybenzaldehyde with benzyl bromide that produced 3,5-dibenzyloxybenzaldehyde. Subsequently, the 3,5-dibenzyloxybenzaldehyde is utilized as a starting material of the Wittig reaction. Product of the Wittig reaction and *p*-iodophenylacetate are then used to synthesize the stilbene analogue. The synthesized compounds are then, purified by chromatographic techniques and sent for ¹H-NMR characterization. Concisely, even though the compound of desired has failed to be obtained, an almost structurally identical compound has been successfully synthesized in small amount.

CHAPTER 1

INTRODUCTION

Stilbene or *trans*-1,2-diphenylethylene **1** belongs to a class of compounds known as phenolics. It is well known, that stilbene-based compounds can be obtained either from plants (natural sources) or synthetically.

4-Acetoxy-11,13-dibenzoyloxystilbene **2** is a substituted stilbene, which cannot be obtained from plants. Thus, it only can be obtained synthetically. The synthesis of this compound has been previously performed at milligram scale. Thus, the goal of this project is to synthesize **2** in larger quantities (gram scale) in order to supply for bioactivity and reactivity studies by other researchers.

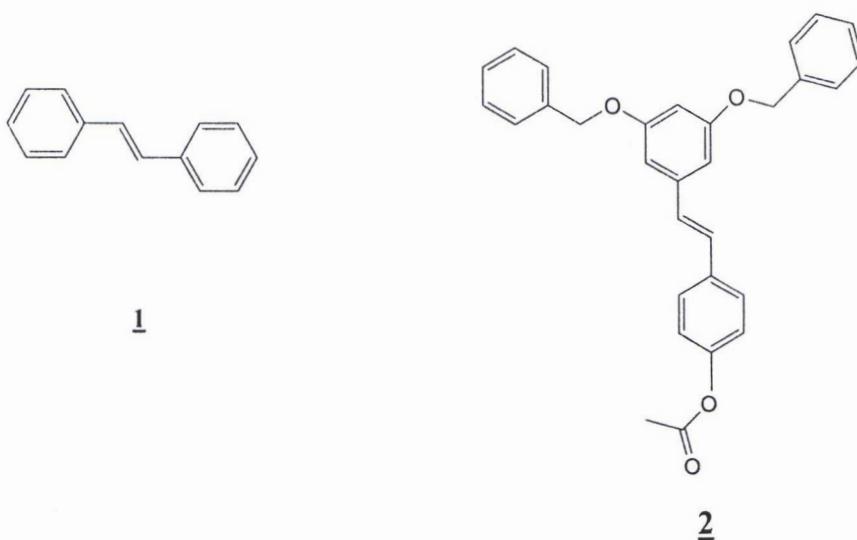


Figure 1.1: The structures of basic stilbene skeleton and its analogue