

UNIVERSITI TEKNOLOGI MARA

**SYNTHESIS OF 4-ALLYLOXY-11,13-
DIMETHOXYSTILBENE**

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ABSTRACT

The synthesis of 4-allyloxy-11,13-dimethoxystilbene has been made using a series of reactions. Protected iodophenol reaction was the first step using allyl bromide as a protecting agent. After that, through Wittig reaction the protected styrene was successfully synthesized. Both compound finally were coupled in the presence of palladium chloride as a catalyst and triphenylphospine as a ligand via Heck reaction to give about 28.84% yield. TLC, UV spectrophotometer and NMR spectrometer were used in the determination of every product for every step. However, the desired compound, which is expected to be formed, was not successfully synthesized due to unknown reason.

CHAPTER 1

INTRODUCTION

Introduction

In the last few years great interest has arisen concerning resveratrol (*trans*-3,4',5-trihydroxystilbene) **1** because of its biological properties: heart protecting activity, platelet antiaggregating capability, antioxidant *etc.*

1 and its analogues are examples of stilbene, 1,2-diphenylethene. They are present only in small amounts of certain plants and its quantity depends on the stress situation of the plant, as it occurs for all the other phytoalexins. For these reasons they cannot be obtained in large quantities by extractive procedures. Given the minute amounts of **1** and its analogues presents in plants, it comes as no surprise that other sources of supply than nature are needed in order to satisfy the increasing demand for stilbene derivatives.

Stilbene has so many properties but still being under investigation and trial before proved for clinical used. Therefore this study is conducted in order to obtain stilbene derivatives in large quantities (in gram) for future bioactivity and reactivity studies. The data obtained is useful to synthesize more stilbene derivatives and can be used as a source of references.