

**SYNTHESES OF 2,3-DIOXOPYRROLIDINES WITH ANISALDEHYDE  
USING DIFFERENT AMINES**

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## **ABSTRACT**

### **SYNTHESES OF 2,3-DIOXOPYRROLIDINES USING ANISALDEHYDE WITH DIFFERENT AMINES**

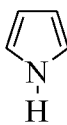
2,3-Dioxopyrrolidines were synthesized using anisaldehyde with different amines in a suspension of sodium diethyl oxalacetate (1 equiv), amine (1 equiv) and anisaldehyde (1 equiv) in ethanol. Three different amines were used and they were methylamine, benzylamine and isopropylamine. Many possibilities of syntheses products of 2,3-Dioxopyrrolidines were investigated. 2,3-Dioxopyrrolidines obtained were in moderate yields but of high purity. A significant advantage of these products was that most of them can be crystallized out of the reaction mixture. The synthesized compounds can lead towards the syntheses of biologically active natural products. The compounds were also reduced using zinc powder in the presence of acid. Reduction of synthesized 2,3-Dioxopyrrolidines gave the corresponding secondary alcohols.

## CHAPTER 1

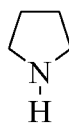
### INTRODUCTION

#### 1.1 Pyrrolechemical compound

*Pyrrolechemical compound* refers to a class of organic compounds of the heterocyclic series characterized by a five-membered diunsaturated ring structure composed of four carbon atoms and one nitrogen atom. The simplest member of the pyrrole family is pyrrole itself, a compound with the molecular formula of  $C_4H_5N$ . Pyrrole compounds are also found among the alkaloids, a large class of alkaline organic nitrogen compounds produced by plants [1]. Pyrrole and its derivatives are widely used as an intermediate in synthesis of pharmaceuticals, medicines, agrochemicals, dyes, photographic chemicals, perfumes and other organic compounds [2].



Pyrrole



Pyrrolidine

Figure 1.1 Pyrrole and Pyrrolidine ring systems