SYNTHESES AND METHYLATIONS OF 2,3-DIOXOPYRROLIDINES WITH DIFFERENT AMINES

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APRIL 2009

This Final Year Project Report entitled "**Syntheses and Methylations of 2,3-Dioxopyrrolidines with different amines**" was submitted by Anis Raehana bt Abd Rasid, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Chemistry, in the Faculty of Applied Sciences, and was approved by

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Date: 6 MAY 2009

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ABSTRACT

SYNTHESIS AND ALKYLATION OF 2,3-DIOXOPYRROLIDINE WITH DIFFERENT AMINE

In this research, sodium diethyl oxalate that has been used as the starting material was reflux together with amine and 4-methoxy benzaldehyde for 30 minutes *via* one-pot reaction. Two different amines which is benzyl amine and methyl amine were used for the variation of the result. Then, the products forms via one-pot reaction were being alkylated by using methyl iodide as the alkylating agent. The 2,3-dioxopyrrolidine derivatives in ethanol was refluxed with the methyl iodide and potassium carbonate. The expected alkylation was preferred at C4 position on the pyrrolidine ring because the α-hydrogen is more acidic since it is surrounded by the carbonyl carbon and benzene group. But the result obtained through the characterization of ^{1}H NMR spectrum show that there is *O*-alkylation instead of *C*-alkylation. The methyl group is attached to the oxygen at C3 position on the pyrrolidine ring system. Chromatography analysis also has been proposed to identify the present of other impurities. On the TLC, several spots were observed represent the major product, some unreacted starting material and impurities product. The desired product has been separated from the others material and product through the column chromatography.