

ABSTRAK

VARIASI JUMLAH KATALIS BASA NaOH DALAM SINTESIS SENYAWA 4'-AMINO-4-METILKALKON DARI 4- AMINOASETOFENON DAN 4-METILBENZALDEHID DENGAN REAKSI KONDENSASI CLAISEN-SCHMIDT

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Latar Belakang: Senyawa 4'-amino-4-metilkalkon dapat disintesis dari 4-aminoasetofenon dan 4-metilbenzaldehyd melalui reaksi kondensasi Claisen-Schmidt dengan katalis NaOH. Penggunaan katalis basa NaOH dalam sintesis kalkon dapat mempengaruhi rendemen hasil sintesis. Penelitian ini bertujuan untuk mengetahui jumlah katalis basa NaOH yang digunakan untuk menghasilkan rendemen terbesar pada senyawa 4'-amino-4-metilkalkon melalui reaksi kondensasi *Claisen-Schmidt* dengan memvariasikan jumlah katalis NaOH.

Metodologi: Penelitian ini merupakan penelitian eksperimental yang meliputi, sintesis 4'-amino-4-metilkalkon dari 4-aminoasetofenon (10 mmol) dan 4-metilbenzaldehyd (10 mmol) dengan jumlah NaOH dalam berbagai variasi 6, 8, 10 dan 12 mmol pada suhu kamar selama 3 jam. Hasil sintesis diuji kemurniannya dengan Kromatografi Lapis Tipis (KLT) kemudian dikarakterisasi spektrofotometri UV-Vis, spektra Inframerah (IR) dan spektroskopi NMR.

Hasil Penelitian: Hasil yang didapat menunjukkan peningkatan jumlah NaOH pada 6, 8, 10, 12 mmol, meningkatkan persentase rendemen sebesar 56,16%; 60,49%; 62,93%; 67,32%. Hasil analisis KLT menunjukkan bahwa hasil sintesis murni kemudian karakterisasi menggunakan UV-Vis, Inframerah, dan NMR menunjukkan senyawa hasil sintesis merupakan 4'-amino-4-metilkalkon.

Kesimpulan: Jumlah NaOH yang menghasilkan rendemen terbesar pada sintesis senyawa 4'-amino-4-metilkalkon sebesar 12 mmol dengan rendemen 67,32%

Kata Kunci: 4'-amino-4-metilkalkon, sintesis, jumlah NaOH, reaksi kondensasi *Claisen-schmidt*

ABSTRACT

Variation of Total NaOH Basic Catalysis with The Synthesis of 4'-Amino-4-Methylchalcone from 4-Aminoacetophenone and 4-Methylbenzaldehyd with Claisen-Schmidt Condensation Reaction

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Background: 4'-amino-4-methylchalcone can be synthesized from 4-aminoacetophenone and 4-methylbenzaldehyde by means of a Claisen-Schmidt condensation reaction with NaOH catalyst. The use of NaOH as alkaline catalyst in the synthesis of chalcone can affect the yield of the synthesis results. This study aims to determine the amount of NaOH catalyst used to produce the largest yield of 4'-amino-4-methylchalcone compound through the condensation reaction Claisen-Schmidt by varying the amount of NaOH catalyst.

Methodology: This study is an experimental study which includes synthesis of 4'-amino-4-methylchalcone from 4-aminoacetophenone (10 mmol) and 4-methylbenzaldehyde (10 mmol) with the amount of NaOH in variations of 6, 8, 10 and 12 mmol in room temperature for 3 hours. The purity of the synthesis results was tested by Thin Layer Chromatography (TLC) and then characterized by UV-Vis, Infrared (IR) spectrophotometry and NMR spectroscopy.

Results: The results showed an increase in the amount of NaOH at 6, 8, 10, 12 mmol, increasing the percentage of yield by 56.16%; 60.49%; 62.93%; 67.32%. The results of TLC analysis showed that the results of pure synthesis and characterization using UV-Vis, Infrared, and NMR showed that the synthesized compound was 4'-amino-4-methylchalcone.

Conclusion: The amount of NaOH which resulted in the largest yield in the synthesis of the compound 4'-amino-4-methylchalcone of 12 mmol to yield 67.32%

Keywords: 4'-amino-4-methylchalcone, synthesis, the amount of NaOH, Claisen schmidt Condensation Reaction