

ABSTRAK

Variasi Katalis NaOH Pada Sintesis 4'-Amino-3,4 -Dimetoksikalkon dari 4'-Aminoasetofenon dan 3,4-Dimetoksibenzaldehid Melalui Kondensasi Claisen-Schmidt

Eisa Swastika¹, Rehana², Muhamad Salman Fareza²

Latar Belakang: Senyawa 4'-Amino-3,4 -Dimetoksikalkon telah di sintesis melalui reaksi kondensasi Claisen-Schmidt dengan katalis NaOH. Penelitian ini bertujuan untuk mengetahui jumlah katalis NaOH dalam mempengaruhi presentase rendemen serta jumlah NaOH yang memberikan rendemen terbesar.

Metodologi: Pembentukan nukleofilik dengan mereaksikan 10 mmol 4'-aminoasetofenon dan NaOH selama 2 jam, kemudian kondensasi antara nukleofilik enolat dengan 10 mmol 3,4-dimetoksibenzaldehid selama 1 jam. Variasi jumlah NaOH yang digunakan yaitu 7, 8, 10, dan 12 mmol. Hasil sintesis diuji kemurniannya dengan KLT serta dikarakterisasi dengan Spektrofotometri UV-vis, Spektroskopi IR, dan Spektroskopi NMR.

Hasil penelitian: Peningkatan % rendemen terjadi seiring peningkatan jumlah NaOH dari 7 mmol (80,78 % rendemen) menjadi 8 mmol (91,14 % rendemen). Penambahan NaOH melebihi konsentrasi optimum menurunkan % rendemen, pada konsentrasi NaOH 10 mmol (90,40% rendemen) dan 12 mmol (81,99 % rendemen). Senyawa hasil sintesis murni secara KLT serta hasil karakterisasi Spektrofotometri UV; Spektroskopi IR; dan NMR senyawa tersebut merupakan 4'-Amino-3,4 -dimetoksikalkon.

Kesimpulan: Jumlah katalis NaOH pada sintesis senyawa 4'-amino-3,4-dimetoksikalkon mempengaruhi presentase rendemen, dengan rendemen terbesar 91,14 % pada konsentrasi NaOH 8 mmol.

Kata kunci: 4'-Amino-3,4 -dimetoksikalkon, NaOH, karakterisasi

ABSTRACT

Variation of NaOH Catalyst in the Synthesis of 4'-Amino-3,4-Dimethoxychalcone from 4'-Aminoacetophenone and 3,4-Dimethoxybenzaldehyde Through Claisen-Schmidt Condensation

Eisa Swastika¹, Rehana², Muhamad Salman Fareza²

Background: 4'-Amino-3,4-dimethoxychalcone was synthesized by Claisen-Schmidt condensation with NaOH catalyst. This study aims to determine the amount of NaOH catalyst influencing the yield and NaOH amount, which gives the most excellent yield.

Methodology: The formation of nucleophilic by reacting ten mmol 4'-aminoacetophenone with NaOH for 2 hours. Then condensation between nucleophilic enolates with ten mmol 3,4-dimethoxybenzaldehyde for 1 hour. The variations in the amount of NaOH used were 7, 8, 10, and 12 mmol. TLC's purity of the synthesis results was tested and characterized by U.V-vis spectrophotometry, spectroscopy I.R., and spectroscopy NMR.

Results: The yield has increased as NaOH increased from 7 to 8 mmol (80.78% to 91.14% yield). The addition of NaOH exceeding optimum concentration reduced the yield at a NaOH concentration of 10 mmol (90.40% yield) and 12 mmol (81.99% yield). Pure synthesized compounds by TLC and the results of characterization of U.V-vis Spectrophotometry; spectroscopy I.R.; and spectroscopy NMR of the compound is 4'-Amino-3,4-dimethoxychalcone.

Conclusion: The concentration of NaOH catalyst affected the yield percentage in the Synthesis of 4'-amino-3,4-dimethoxychalcone, with the largest yield of 91.14% at a concentration of 8 mmol NaOH.

Keywords: 4'-Amino-3,4-dimethoxychalcone, NaOH, characterization