

Sintesis turunan 1,4-Dihidropiridin dan hibrida 1,4-Dihidropiridin Kalkon Bermotif 1,2,3-Triazol dengan variasi Prekursor Azida dan Aldehida Aromatik = Synthesis of 1,4-Dihydropyridine Derivatives and 1,4-Dihydropyridine Chalcone Hybrids with 1,2,3-Triazol Patterns with Azide and Aromatic Aldehyde Precursor variations

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Abstrak

Pada penelitian ini digunakan variasi prekursor senyawa azida aromatik untuk menyintesis turunan 1,4-dihidropiridin dan variasi prekursor senyawa aldehida aromatik untuk menyintesis 1,4-dihidropiridin triazol hibrida kalkon. Pada sintesis 1,4- dihidropiridin bermotif 1,2,3-triazol melalui reaksi propargilasi, kondensasi Hantzsch, dan sikloadisi azida-alkuna, sedangkan pada sintesis hibrida 1,4-dihidropiridin kalkon bermotif 1,2,3-triazol melalui reaksi kondensasi Claisen-Schmidt. Sintesis menggunakan variasi prekursor dengan tujuan membandingkan hasil yield produk dan keberhasilan sintesis dengan mengubah struktur senyawa induknya. Produk-produk pada penelitian ini diharapkan bisa menjadi referensi dalam menyintesis suatu senyawa kalkon baru dengan gugus dihidropiridin dan triazol sebagai cincin penghubung. Didapatkan massa dan yield produk : dihidropiridin-triazol etil 4-benzoat (0,258 g; yield 94,37%), dihidropiridin-triazol-4-asetil (0,539 g; yield 93,90%), dihidropiridin-triazol-kalkon(tiofena) (0,054 g; yield 32,33%), dihidropiridin-triazol-kalkon(trans-s inam aldehida) (0,096 g; yield 57,48%). Produk-produk senyawa tersebut dikarakterisasi dengan instrumen titik leleh, FTIR, LC-MS/MS, dan NMR. Dengan demikian maka variasi dari azido aromatik tidak terlalu berpengaruh terhadap yield produk dihidropiridin-triazol, sedangkan variasi aldehida aromatik berpengaruh terhadap yield produk dihidropiridin-triazol-kalkon.

.....In this study, a variety of aromatic azide compound precursors were used to synthesise 1,4-dihydropyridine derivatives and a variety of aromatic aldehyde compound precursors to synthesise 1,4-dihydropyridine triazole hybrid chalcones. In the synthesis of 1,4-dihydropyridine patterned 1,2,3-triazole through propargylation reaction, Hantzsch condensation, and azide-alkyne cycloaddition, while in the synthesis of 1,4- dihydropyridine chalcone hybrid patterned 1,2,3-triazole through Claisen-Schmidt condensation reaction. The synthesis used a variety of precursors with the aim of comparing product yields and the success of synthesis by changing the structure of the parent compound. The products in this study are expected to be a reference in synthesising a new chalcone compound with dihydropyridine and triazole groups as connecting rings. The mass and yield of the products: dihydropyridine-triazole ethyl 4-benzoate (0.258 g; yield 94.37%), dihydropyridine-triazole-4-acetyl (0.539 g; yield 93.90%), dihydropyridine-triazole-chalcone(thiophene) (0.054 g; yield 32.33%), dihydropyridine- triazole-chalcone(trans-cinnamaldehyde) (0.096 g; yield 57.48%). The products were characterised by melting point, FTIR, LC-MS/MS, and NMR instruments. Thus, the variation of aromatic azido does not affect the yield of dihydropyridine-triazole product, while the variation of aromatic aldehyde affects the yield of dihydropyridine-triazole- chalcone product.