ABSTRAK

Alzheimer merupakan penyakit yang menyebabkan degenerasi sel pada otak dan seringkali menyebabkan terjadinya demensia. Saat ini, pengobatan penderita Alzheimer berupa Takrin, Donepezil, Galantamin, dan Rivastigmin bekerja dengan menghambat asetilkolinesterase untuk mengurangi gejala alzheimer. Namun, obat-obat tersebut memiliki efek samping seperti mual, muntah, diare, dispepsia, anoreksia, dan nyeri otot, oleh karena itu diperlukan suatu obat Alzheimer baru yang lebih rendah efek sampingnya. Pada penelitian ini telah dilakukan penambatan molekuler 10 senyawa turunan fenoksi aril asetamida terhadap enzim asetilkolinesterase. Hasil penambatan menunjukkan senyawa *N*-(naftalena-1-il)-2-fenoksiasetamida tertambat paling kuat pada enzim asetilkolinesterase dengan nilai ΔG_{bind} -8,98 kkal/mol. Proses sintesis senyawa tersebut dilakukan dengan mereaksikan 2-fenoksiasetil klorida dan naftilamin menggunakan katalis piridin melalui mekanisme reaksi substitusi nukleofilik asil. Senyawa hasil sintesis berupa serbuk berwarna ungu keabu-abuan dengan rendemen 43,09%, serta sudah murni berdasarkan KLT dan jarak lebur 132,1-133,1˚C. Struktur senyawa dipastikan sesuai berdasarkan hasil elusidasi. Hasil elusidasi struktur dengan spektrofotometri inframerah, spektrometri massa, spektroskopi ^{1}H dan ^{13}C-resonansi magnetik inti menunjukkan bahwa senyawa hasil sintesis adalah *N*-(naftalena-1-il)-2-fenoksiasetamida.

Kata kunci: alzheimer, *N*-(naftalena-1-il)-2-fenoksiasetamida, penambatan molekuler, inhibitor asetilkolinesterase, substitusi nukleofilik asil

ABSTRACT

Alzheimer's is a disease that causes cell degeneration in the brain and often causes dementia. Nowaday, the treatment of Alzheimer's patient uses Tacrine, Donepezil, Galantamine, and Rivastigmine which work by inhibiting acetylcholinesterase to reduce Alzheimer's symptoms. However, these drugs have adverse side effects such as nausea, vomiting, diarrhea, dyspepsia, anorexia, and muscle pain, therefore the need of a new Alzheimer's drug that have these less side effects is urgent. In this present study, molecular docking of 10 phenoxy aryl acetamide derivatives. The result shows that N-(naphthalene-1-yl)-2-phenoxyacetamide is most strongly docked to the acethylcholinesterase enzyme with the ΔG_{bind} -8,98 kcal/mol. This compound was synthesized by reacting 2-phenoxyacetyl chloride and arylamine derivatives with pyridine as the catalyst undergoes the nucleophilic acyl substitution reaction mechanism. The synthesized product compounds with the yield 43,09% was observed in greyish purple powder, already purely based on TLC and having melting range at 132,1 to 133,1˚C. The structure was confirmed based on the elucidation results. The elucidation results based on infrared spectrophotometry, mass spectrometry, ^{1}H and ^{13}C-nuclear magnetic resonance spectroscopy shows that the synthesized product compounds is N-(naphthalene-1-yl)-2-phenoxyacetamide.

Keywords: *alzheimer, N-(naphthalene-1-yl)-2-phenoxyacetamide, molecular docking, acethylcholinesterase inhibitor, nucleophilic acyl substitution*