

ABSTRACT

SYNTHESIS OF 4'-ACETAMIDOPHENYL-4-NITROBENZOATE AND ITS ANALGESIC ACTIVITY TEST IN MICE (*Mus musculus*)

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The aim of this research is synthesize 4'-acetamidophenyl-4-nitrobenzoate as paracetamol derivate and examine its analgesic activity in mice. Its analgesic activity was predicted using in silico test and compared to paracetamol before it was synthesized. The result of the test was the compound had higher activity than paracetamol according to their rerank score. Then 4'-Acetamidophenyl-4-nitrobenzoate was synthesized with *Shcotten-Baumann* method by reacting paracetamol with 4-nitrobenzoyl chloride. The resulted compound was recrystallized by using ethanol and its purity was tested by thin layer chromatography and melting point test. Its structure was confirmed with UV spectrophotometer, infrared spectrophotometer, and H-NMR spectrometer. Its analgesic activity was tested with hot plate method at $55^{\circ} \pm 0,5^{\circ}\text{C}$ and it's observed at before, 30, 60, 90, and 120 minute after oral administration. Paracetamol (100mg/kg body weight) showed its maximum MPE in 90 minute (19,1%) and 4'-acetamidophenyl-4-nitrobenzoate in 90 minute (25,2%). Nevertheless, it does not satisfy any significances (counted $t(0,535) < \text{table-}t(1,734)$).

Keyword : synthesis, 4'-acetamidophenyl-4-nitrobenzoate, analgesic activity