

ABSTRACT

Synthesis of *O*-(2-Chlorobenzoyl)acetaminophen and Its Analgesic Activity Test in Mice (*Mus Musculus*) using Hot Plate Method

Risma Zahra Privea

The purposed of this research is to synthesis *O*-(2-chlorobenzoyl)acetaminophen and to determine its activity analgesic activity in mice (*Mus musculus*). Firstly compound was tested by *in silico* assay with Molegro Virtual Docker program. Then, the compound is synthesized by reacting paracetamol with 2-chlorobenzoyl chloride using *Schotten-Baumann* acylation reaction principle. Yield percentage of this product was 72% and the purity was analyzed by melting point test and thin layer chromatography. The structure of the compound was confirmed by UV-Vis spectrophotometer, infrared spectrophotometer and nuclear magnetic resonance spectrometer. At last, its analgesic activity was assayed by *hot plate* method at $55\text{ }^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ before and 30, 60, 90, 120 minutes after oral administration in mice with dose 100 mg/kg body weight. CMC-Na as control, and paracetamol as reference. The *O*-(2-chlorobenzoyl)acetaminophen has 37,04% maximum possible effect which shows that it has higher analgesic activity than paracetamol (33,2%).

Keyword: *in silico*, *hot plate*, *O*-(2-chlorobenzoyl)acetaminophen, synthesis, analgesic activity test