ABSTRACT

SYNTHESIS AND ACTIVITY TEST OF 4'-ACETAMIDOPHENYL-3,4-DICHLOROBENZOATE

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Paracetamol is analgesic drug that commonly use to treat pain. Paracetamol can cause hepatotoxic if it is used in long time therapy or in high dose. Hepatotoxic is caused by formation of paracetamol's metabolite: *N*-acetyl-*p*-benzoquinon imin (NAPQI) which bind with liver cell. The aim of this research is synthetize 4'-acetamidophenyl-3,4-dichlorobenzoate 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 synthetized. The result of the test was the compound had higher activity than paracetamol according to their rerank score. Then 4'-Acetamidophenyl-3,4-dichlorobenzoate was synthesized with Schotten-Baumann method by reacting paracetamol with 3,4-dichlorobenzoate. The acquired 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 55º ± 0,5ºC and it's observed at the pretreatment, 30, 60, 90, and 120 minute after oral administration. Paracetamol (100mg/kg body weight) and 4'-acetamidophenyl-3,4-dichlorobenzoate (100mg/kg body weight) showed their maximum MPE in 60 minute after oral administration and MPE of 4'-acetamidophenyl-3,4-dichlorobenzoate (42.44%) greater than paracetamol (38.37%).

Keyword : Synthesis, 4'-acetamidophenyl-3,4-dichlorobenzoate, analgesic activity