

Acute Toxicity Test of Andrographolide Self-NanoEmulsifying Drug Delivery Systems (SNEDDS) on Wistar Female Rats

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ABSTRACT

Andrographolide is an active compound on Sambiloto (*Andrographis paniculata* Ness). Andrographolide has low solubility and bioavailability, therefore needs to be improved in the dosage form as Self-NanoEmulsifying Drug Delivery Systems (SNEDDS). Increased bioavailability through a dosage formulation may have an impact on the potential toxicity of a chemical compound. The aim of this study is to find out toxicity description of the andrographolide SNEDDS on female Wistar strains. The Wistar strain of 30 female rats was divided into 5 groups, including a vehicle control group (SNEDDS carrier), normal control (aquadeg), treatment I (SNEDDS 900 mg/kgBB), treatment II (SNEDDS 700 mg/kgBB), treatment III (SNEDDS 500 mg / kgBB). Oral administration of test compounds are administered several times within a period not exceeding 24 hours on day 1. Toxicity test was performed 14 days by observing toxic symptoms and at the end of the study, tested animal was sacrificed for histopathologic test of kidney and liver. Toxicity test result showed that andrographolide SNEDDS include non toxic category with LD₅₀ value is 728.93 mg/kgBB. Statistical analysis is aimed to show the severity differences of kidney and liver between treatment group by *Kruskal Wallis* ($p>0.05$) test. Statistical test showed that there is no significant differences between treatment groups. Histopathologic test showed that on 900 mg/kgBB groups there is necrosis of kidney cells and fatty degeneration in liver cells more than on 700 mg/kgBB and 500 mg/kgBB groups. It can be concluded that andrographolide SNEDDS toxicity is not caused by the compound test.

Keywords: Andrographolide, SNEDDS, toxicity