

The Effects of Angkak Administration in Sprague-Dawley White Rats on Alanine Amino Transferase (ALAT) and Aspartic Amino Transferase (ASAT) Enzyme, Blood Urea, and Liver and Kidney Histopathology Test

Hasim Danuri

Abstract

Acute toxicity of angkak had been tested on 2 months aged male Sprague-Dawley white rats. Twenty five rats were divided into 5 groups; control, 2.5 g/kg body weight (bw), 5 g/kg bw, 10 g/kg bw and 15 g/kg bw, and each group was administered by angkak in water orally. The toxic effect of angkak to liver and kidney were tested by biochemical analysis for the activity of enzyme alanin amino transferase (ALAT/ EC 2.6.1.2), enzyme aspartate amino transferase (ASAT/ EC 2.6.1.1) and the level of urea in blood at one day before (H-1) and after (H+1) the treatment, as well as 6 days after the treatment (H+6). The mortality rate and clinical symptoms were observed after 24 hours until 6 days after treatment. The rats were necropsied to observe the lesion of liver and kidney both macroscopically and microscopically. The result shows that all rats still survived since 24 hours to 6 days after the test. During the treatment with ad libitum rat chow contained 18% protein, the body weight of the rats were insignificantly increased ($P>0.05$). There were no changed of the appetite, eyes condition, fur, and behaviour of the rats. However, the feces of the rats which were treated with angkak are reddish. The activity of ALAT, ASAT enzyme as well as the urea level in blood were significantly increased as shown on H+1 compared to H-1 within all treatment groups, after that there were no significant changes in those parameter on H+6 compared to H+1. The histopathological result due to angkak on kidney shows less lesions and these lesions were reversible.

Key words: *Angkak, Monascus sp., Acute Toxicity, Liver and Kidney*