

INTISARI

Tujuan penelitian ini adalah untuk mengetahui pengaruh akut jus wortel terhadap histopatologi hati, aktivitas Alanin Aminotransferase (ALT), dan melihat korelasi antara hasil pengamatan histopatologi organ hati dengan aktivitas ALT.

Penelitian ini termasuk penelitian eksperimental murni dengan rancangan acak lengkap pola searah. Tiga puluh ekor tikus jantan *Wistar*, berat 100-200 gram, umur 60-90 hari dibagi dalam 5 kelompok. Kelompok I sebagai kontrol negative. Kelompok ini diberi air minum 25 ml/kgBB. Kelompok II-V sebagai diberi jus wortel dengan dosis berturut-turut 1,094 g/kgBB, 2,188 g/kgBB, 4,375 g/kgBB dan 8,750 g/kgBB. Konsentrasi jus wortel adalah 35%. Penelitian ini mengamati perubahan berat badan, gejala klinis, jumlah tikus yang mati, histopatologi hati, dan aktivitas ALT. Aktivitas ALT pra perlakuan dan rasio organ hati dianalisis menggunakan *Shapiro-Wilk* kemudian dilanjutkan dengan *One Way ANOVA* atau *Kruskall Wallis*. Aktivitas ALT pra dan pasca perlakuan dibandingkan dengan uji *paired t-test*. Aktivitas ALT hari ke-1 dan ke-14 pasca perlakuan dibandingkan dengan *unpaired t-test*. Perubahan berat badan dianalisis menggunakan *Two Way ANOVA*.

Hasil penelitian menunjukkan bahwa jus wortel tidak menyebabkan kematian subjek uji (LD_{50} semu $>8,750$ g/kgBB). Pemberian jus wortel tidak menimbulkan gejala toksik. Pengamatan histopatologi hati menunjukkan bahwa jus wortel menyebabkan perubahan struktural sel hati seperti radang akut polimorfonuklear (PMN) dan nekrosis. Jus wortel tidak menyebabkan perubahan aktivitas ALT. Aktivitas ALT tidak berkorelasi dengan kerusakan sel hati dalam penelitian ini.

Kata kunci : Wortel, *Daucus carota* L., LD_{50} , histopatologi hati, aktivitas ALT

ABSTRACT

The purpose of this research is to know the acute effect of carrot juice on liver histopathology, Alanine Aminotransferase (ALT) activity, and the correlation between liver histopathology and ALT activity.

The research was a true experimental with random one way research. Thirty male rats of Wistar strain, weighty 100-200 grams and age 60-90 days were divided randomly in five group of dosage. The first group was a negative control group. This group was treated with drinking water 25 ml/kgBW. Then II-V group were treated with carrot juice in each dosage 1,094 g/kgBW, 2,188 g/kgBW, 4,375 g/kgBW and 8,750 g/kgBW. Concentration of carrot juice was 35%. The research observed the change of body weight, clinical symptoms, the amount of dead rat, liver histopathology and ALT activity. The ALT activity before treatment and liver's ratio were analyzed with *Shapiro-Wilk* and then continued with *One Way ANOVA* or *Kruskall Wallis*. ALT activity before and after treatment were compared with *paired t-test*. ALT activity at the 1st day and the 14th day after treatment were compared with *unpaired t-test*. The change of body weight was analyzed with *Two Way ANOVA*.

The result showed that carrot juice did not cause death in experimental subject (pseudo LD₅₀ >8,750 g/kgBW). Carrot juice treatment did not make any toxic symptoms. The observation of liver's histopathology showed that carrot juice caused structural changes at liver cell, such as PMN acute inflammation and necrosis. Carrot juice did not cause change of ALT activity. The ALT activity did not have any correlation with liver cell damage in this research.

Keywords: Carrot, *Daucus carota* L., LD₅₀, liver histopathology, ALT activity