

ABSTRACT

Background: Hepatotoxicity is a drug complication that is often found in prescriptions because of the role of the liver in metabolizing drugs. Paracetamol is an analgesic and antipyretic drug that is often used by the community and is a safe choice when taken according to the dose, if in excess it causes hepatotoxicity (liver damage). Liver damage can be prevented by giving antioxidant compounds. Rambutan's leaves contain secondary metabolites of alkaloids, tannins and saponins which are known to have antioxidant potential. The aim of the research is to determine the hepatoprotective effect along with the effective dose of the ethanol extract of rambutan's leaves.

Methods: This research used a completely randomized design method with 5 treatments and the treatment consisted of 5 mice. K- as negative control, K+ (positive control) was given temulawak dose of 260 mg/KgBW, P1 was given extract dose of 100 mg/KBB, P2 was given extract dose of 200 mg/KBB and P3 was given extract dose of 400 mg/KBB. Parameters observed included phytochemical screening, SGPT and SGOT concentrations, liver macroscopic, Hepatosomatic Index (HSI) and histopathology. The results of screening and macroscopic data were analyzed descriptively, while the SGPT, SGOT, HSI and scoring data were analyzed histologically using One Way ANOVA and continued with Duncan's test.

Results: The phytochemical screening test showed that the ethanol extract of rambutan leaves contained alkaloids, flavonoids, saponins, tannins and steroids. The results of macroscopic observations showed that the higher the dose of extract given, the color of the liver was getting closer to normal (brownish red) and the surface was smoother and less speckled. The results of statistical analysis showed that the ethanol extract of rambutan leaves was able to maintain the concentrations of SGPT, SGOT and Hepatosomatic Index in the normal range and could reduce the results of liver damage scores in mice. The effective dose obtained at 400mg/KgBW.

Conclusion: Ethanol extract of rambutan leaves (*Nephelium lappaceum* L.) has hepatoprotective activity, with an effective dose of 400 mg/KgBW.

Keywords: Rambutan's leaf, Hepatoprotector, SGPT, SGOT, Histopathology.

ABSTRAK

Latar Belakang: Hepatotoksik diartikan sebagai komplikasi obat yang tak jarang ditemukan dalam resep dikarenakan fungsi hati dalam memetabolisme obat. Parasetamol merupakan obat penurun demam dan pereda nyeri yang sering digunakan masyarakat serta menjadi pilihan yang aman bila dikonsumsi sesuai dosis, jika lebih dapat mengakibatkan hepatotoksik (kerusakan hati). Kerusakan hati dapat dicegah dengan pemberian senyawa yang bertindak sebagai antioksidan. Daun rambutan mengandung metabolit sekunder alkaloid, tannin dan saponin yang diketahui memiliki potensi antioksidan. Penelitian ini bertujuan untuk mengetahui efek hepatoprotektor beserta dosis efektif dari ekstrak etanol daun rambutan.

Metode: Penelitian ini menggunakan metode Rancangan Acak Lengkap dengan 5 perlakuan dan tiap perlakuan terdiri dari 5 ekor mencit. K- sebagai kontrol negatif, K+ (Kontrol Positif) diberikan curcuma dosis 260 mg/KgBB, P1 diberikan ekstrak dosis 100 mg/KBB, P2 diberikan ekstrak dosis 200 mg/KBB dan P3 diberikan ekstrak dosis 400 mg/KBB. Parameter yang diamati meliputi skoring fitokimia, konsentrasi SGPT dan SGOT, makroskopis hati, *Hepatosomatic Index* (HSI) dan histopatologi. Data hasil skrining dan makroskopis hati dianalisis secara deskriptif, sementara data SGPT, SGOT, HSI dan skoring histologi dianalisis menggunakan One Way ANOVA dan dilanjutkan dengan uji Duncan.

Hasil: Uji skrining fitokimia menunjukkan ekstrak etanol daun rambutan mengandung senyawa alkaloid, flavonoid, saponin, tannin dan steroid. Hasil pengamatan makroskopis menunjukkan semakin tinggi dosis ekstrak yang diberikan maka warna organ hati semakin mendekati normal (merah kecoklatan) dan permukaan semakin licin dan tidak berbintik. Hasil analisa statistik menunjukkan ekstrak etanol daun rambutan mampu mempertahankan konsentrasi SGPT, SGOT dan *Hepatosomatic Index* pada rentang normal dan dapat menurunkan hasil skor kerusakan hati mencit. Dosis efektif yang didapat pada 400mg/KgBB.

Kesimpulan: Ekstrak Etanol daun rambutan (*Nephelium lappaceum* L.) memiliki aktivitas hepatoprotektor, dengan dosis efektif 400 mg/KgBB.

Kata kunci: daun rambutan, hepatoprotektor, SGPT, SGOT, histopatologi