

TOKSISITAS AKUT DAN SUBKRONIK INFUSA BUNGA TELANG (*Clitoria ternatea* L.) TERHADAP PROFIL HEMATOLOGIS DAN STRUKTUR HISTOLOGIS HATI TIKUS PUTIH (*Rattus norvegicus* Berkenhout, 1769)

INTISARI

Penyakit degeneratif di Indonesia meningkat dari tahun ke tahun hingga mencapai prevalensi sebesar 20,8%. Salah satu upaya pencegahan penyakit tersebut secara tradisional menggunakan bahan alami yaitu bunga turi, bunga ketepeng cina, dan bunga telang. Bunga telang mengandung fitokimia yang bermanfaat yaitu fenol, flavonoid, antosianin, alkaloid, steroid, dan tanin. Penelitian ini bertujuan untuk mempelajari efek toksisitas akut dan subkronik infusa bunga telang terhadap profil hematologis dan struktur histologis hati tikus putih jantan. Perlakuan toksisitas akut dilakukan dengan memberikan infusa bunga telang dosis 2500 dan 5000 mg/kg BB terhadap tikus secara oral selama 14 hari. Perlakuan toksisitas subkronik dengan memberikan infusa bunga telang dosis 250, 500, dan 1000 mg/kg BB terhadap tikus secara oral selama 28 hari. Selama perlakuan diamati gejala toksik dan ditimbang berat badan. Pada akhir penelitian, tikus dieutanasi dan hati dikoleksi untuk dibuat preparat histologis dengan metode parafin dan pewarnaan hematoksilin-eosin. Parameter kuantitatif toksisitas akut dianalisis menggunakan *Paired Sample t-Test*. Parameter kuantitatif toksisitas subkronik dianalisis menggunakan *One-Way ANOVA* ($p \leq 0,05$). Parameter histologis hati toksisitas akut dan sub kronis masing-masing dianalisis menggunakan uji non parametrik *Mann-Whitney* dan uji *Kruskal-Wallis* ($p \leq 0,05$). Hasil penelitian menunjukkan tidak ada perbedaan nyata pada profil hematologis dan fungsi hati antara kelompok kontrol, perlakuan akut, dan subkronik. Perbedaan nyata ditemukan pada kerusakan degenerasi sel dan vakuolisasi antara kelompok kontrol, perlakuan akut, dan subkronik. Perlakuan akut dan subkronik infusa bunga telang tidak menyebabkan efek toksik pada profil hematologis dan fungsi hati, namun menyebabkan kerusakan degenerasi sel dan vakuolisasi sangat ringan pada hati tikus putih.

Kata kunci: toksisitas akut dan subkronik, bunga telang, profil hematologis, struktur dan fungsi hati

ACUTE AND SUBCHRONIC TOXICITY OF BUTTERFLY PEA FLOWER (*Clitoria ternatea* L.) INFUSION ON THE HEMATOLOGICAL PROFILE AND HISTOLOGICAL STRUCTURE OF THE LIVER OF ALBINO RATS (*Rattus norvegicus* Berkenhout, 1769)

ABSTRACT

Degenerative diseases in Indonesia are increasing from year to year, reaching a prevalence of 20.8%. One of the traditional prevention efforts for these diseases is using natural ingredients, namely turi flowers, Chinese ketepeng flowers, and butterfly pea flowers. Butterfly pea flowers contain beneficial phytochemicals, namely phenols, flavonoids, anthocyanins, alkaloids, steroids, and tannins. This study aims to study the effects of acute and subchronic toxicity of butterfly pea flower infusion on the hematological profile and histological structure of the liver of male white rats. Acute toxicity treatment was carried out by giving butterfly pea flower infusion at doses of 2500 and 5000 mg/kg BW to rats orally for 14 days. Subchronic toxicity treatment was by giving butterfly pea flower infusion at doses of 250, 500, and 1000 mg/kg BW to rats orally for 28 days. During the treatment, toxic symptoms were observed and body weight was measured. At the end of the study, the rats were euthanized and the livers were collected to make histological preparations using the paraffin method and hematoxylin-eosin staining. Quantitative parameters of acute toxicity were analyzed using *Paired Sample t-Test*. Quantitative parameters of subchronic toxicity were analyzed using *One-Way ANOVA* ($p \leq 0.05$). Histological parameters of acute and subchronic liver toxicity were analyzed using the non-parametric *Mann-Whitney* test and *Kruskall-Wallis* test ($p \leq 0.05$), respectively. The results showed no significant differences in hematological profiles and liver function between the control, acute, and subchronic treatment groups. Significant differences were found in cell degeneration damage and vacuolization between the control, acute, and subchronic treatment groups. Acute and subchronic treatments of butterfly pea flower infusion did not cause toxic effects on hematological profiles and liver function, but caused very mild cell degeneration damage and vacuolization on liver of albino rat.

Keywords: acute and subchronic toxicity, butterfly pea flower, hematological profile, liver structure and function