

INTISARI

Telang (*Clitoria ternatea* L.) merupakan tanaman herbal yang banyak digunakan masyarakat untuk meringankan diabetes, hipertensi, dan kanker. Namun, penelitian terkait efek toksik bunga telang perlu dilakukan untuk mengetahui dosis aman penggunaannya. Penelitian ini bertujuan mengkaji toksisitas akut dan subkronik infusa bunga telang terhadap struktur histologis duodenum dan kolon tikus putih (*Rattus norvegicus*) jantan galur Wistar. Infusa bunga telang kering, diberikan secara oral kepada 40 ekor tikus yang dibagi ke dalam kelompok toksisitas akut (dosis 2500 dan 5000 mg/kg BB selama 14 hari) dan subkronik (dosis 250, 500, dan 1000 mg/kg BB selama 28 hari). Setelah perlakuan, hewan uji dinekropski, duodenum dan kolon dikoleksi untuk analisis histomorfometri, karakteristik mukus, dan histopatologis menggunakan pewarnaan hematoxilin-eosin dan *Periodic Acid Schiff-Alcian Blue*. Data histomorfometri dianalisis menggunakan uji *independent sample t-test* dan uji *one-way ANOVA* ($\alpha = 0,05$). Analisis karakteristik mukus dilakukan secara deskriptif komparatif. Kerusakan struktur histologis organ dianalisis dengan menggunakan metode skoring ordinal. Analisis lanjutan menggunakan *Mann Whitney Test* untuk perlakuan akut, sedangkan *Kruskal-Wallis Test* untuk perlakuan subkronik. Hasil penelitian menunjukkan bahwa infusa bunga telang tidak menyebabkan perubahan signifikan pada sebagian besar parameter histomorfometri duodenum dan kolon. Perbedaan signifikan hanya ditemukan pada jumlah dan luas sel goblet. Analisis karakteristik mukus menunjukkan mukus asam dan campuran. Secara histopatologis, infiltrasi leukosit ringan ditemukan pada duodenum dan kolon tanpa disertai kerusakan struktur lain. Hal ini mengindikasikan bahwa perlakuan infusa bunga telang pada dosis akut dan subkronik relatif aman terhadap struktur histologis duodenum dan kolon, namun penggunaan infusa bunga telang perlu memperhatikan dosis untuk meminimalkan potensi efek toksik.

Kata kunci: duodenum, infusa bunga telang, kolon, *Rattus norvegicus*, struktur histologis, uji toksisitas.

ABSTRACT

Butterfly pea (Clitoria ternatea L.) is a herbal plant widely used to alleviate diabetes, hypertension, and cancer. However, studies on its potential toxic effects are necessary to determine safe dosage levels. This study aimed to evaluate the acute and subchronic toxicity of butterfly pea flower infusion on the histological structure of the duodenum and colon of male albino rats (Rattus norvegicus) Wistar strain. This infusion was prepared from dried butterfly pea flowers and administered orally to 40 rats, which were divided into acute toxicity groups (2500 and 5000 mg/kg BW for 14 days) and subchronic toxicity groups (250, 500, and 1000 mg/kg BW for 28 days). After treatment, the animals were euthanized, and the duodenum and colon were collected for histomorphometric, mucus characteristics, and histopathological analysis using hematoxylin-eosin and Periodic Acid Schiff-Alcian Blue Staining. Histomorphometric data were analyzed using independent sample t-test and one-way ANOVA ($\alpha = 0,05$). Mucus characteristics were analyzed descriptively, while histological structural damage was assessed using ordinal scoring. Further analysis was performed using the Mann-Whitney test for acute treatment and the Kruskal-Wallis test for subchronic treatment. The results showed that butterfly pea flower infusion did not cause significant changes in most histomorphometric parameters of the duodenum and colon. Significant differences were observed only in the number and area of goblet cells. Mucus analysis indicated the presence of acidic and mixed mucus. Histopathologically, mild leukocyte infiltration was found in the duodenum and colon without other structural damage. These findings indicate that administration of butterfly pea flower infusion at the tested acute and subchronic doses was relatively safe for the histological structure of the duodenum and colon, however dosage should be carefully considered to minimize potential toxic effects.

Keywords: butterfly pea flower infusion, colon, duodenum, histological structure, Rattus norvegicus, toxicity test.