ABSTRAK

Hiperglikemia adalah kondisi kadar gula darah meningkat melebihi batas normal dan sering kali menjadi faktor risiko terjadinya penyakit diabetes melitus. Pemanfaatan tanaman sebagai alternatif pengobatan cukup banyak dilakukan oleh masyarakat saat ini. Tanaman tomat diketahui memiliki efek antihiperglikemia karena mengandung alkaloid, flavonoid, saponin, dan likopen. Tujuan penelitian ini untuk mengetahui dampak infusa daun tomat sayur yang memiliki efek antihiperglikemia pada mencit jantan yang diinduksi glukosa. Penelitian ini adalah penelitian eksperimental murni menggunakan rancangan acak lengkap pola searah. Metode penelitian menggunakan Uji Toleransi Gula Oral (UTGO). Sebanyak 30 ekor mencit dibagi menjadi 6 kelompok uji ditentukan secara acak. Kelompok I merupakan kontrol negatif diberi *aquadest* dosis 25 g/kgBB. Kelompok II merupakan kontrol positif diberi akarbosa dosis 40 mg/kgBB. Kelompok III merupakan kontrol gula diberi larutan glukosa dosis 2 g/kgBB. Kelompok IV, V, dan VI merupakan kelompok perlakuan diberi infusa daun tomat dengan 3 peringkat dosis, yaitu 833,3 mg/kgBB, 1.666,6 mg/kgBB, dan 3.333,2 mg/kgBB. Induksi glukosa diberikan secara peroral 30 menit setelah diberikan perlakuan infusa daun tomat pada kelompok IV, V, dan VI. Pengukuran kadar gula darah menggunakan glukometer dilakukan pada menit ke-0 sebelum mencit menerima perlakuan dan menit ke-15, 30, 60, 90, serta 120 setelah mencit diinduksi glukosa. Hasil data berupa nilai AUC kadar gula darah dianalisis menggunakan uji *Shapiro Wilk* secara statistik. Hasil skrining fitokimia menunjukkan infusa daun tomat sayur mengandung senyawa flavonoid, saponin, alkaloid, dan terpenoid. Hasil penelitian uji efek antihiperglikemia menunjukkan bahwa sediaan infusa daun tomat sayur memiliki efek antihiperglikemia pada mencit jantan yang terinduksi glukosa.

Kata Kunci: daun tomat, antihiperglikemia, infusa, glukosa, mencit

ABSTRACT

Hyperglycemia is a condition in which blood sugar levels rise above normal levels and is often a risk factor for diabetes mellitus. The utilization of plants as an alternative form of treatment is widely practiced by the community at present. Tomato plants are known to have antihyperglycemic effects due to their alkaloids, flavonoids, saponins, and lycopene. This research aims to determine the effect of infusing vegetable tomato leaves with antihyperglycemic effects in male mice induced with glucose. This study was a true experimental research using a completely randomized design with a one-way pattern. The research method used the Oral Sugar Tolerance Test (UTGO). A total of 30 mice were randomly divided into 6 test groups. Group I served as the negative control and received distilled water at a dose of 25 g/kg BW. Group II served as the positive control and received acarbose at a dose of 40 mg/kg BW. Group III was the sugar control and received a glucose solution at a dose of 2 g/kg BW. Groups IV, V, and VI were the treatment groups and received tomato leaf infusion at three dose levels: 833.3 mg/kg BW, 1,666.6 mg/kg BW, and 3,333.2 mg/kg BW. Glucose induction was administered orally 30 minutes after the tomato leaf infusion in Groups IV, V, and VI. Blood glucose levels were measured using a glucometer at minute 0, before treatment, and at minutes 15, 30, 60, 90, and 120 after glucose induction. The data are presented as blood glucose AUC values, analyzed statistically using the Shapiro–Wilk test. The results of the phytochemical screening showed that the infusion of vegetable tomato leaves contained flavonoids, saponins, alkaloids, and terpenoids. The results of the antihyperglycemic effect test showed that the infusion preparation of vegetable tomato leaves had antihyperglycemic effects in glucose-induced male mice.

Keywords: tomato leaves, antihyperglycemia, infusion, glucose, mice