

Antihypertensive effect of brucea javanica (L.) Merr. fruit extract = Efek antihipertensi ekstrak buah brucea javanica (L.) Merr.

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Abstrak

Secara etnofarmakologi, *B. javanica* (L.) Merr. dikenal sebagai salah satu tanaman obat yang berhasiat menurunkan tekanan darah pada penderita hipertensi. Pada penelitian ini dilakukan pengujian efek antihipertensi ekstrak buah *B. javanica* menggunakan tikus yang mengalami hipertensi akibat pemberian adrenalin. Tikus hipertensi dibagi menjadi 4 kelompok, diberikan fraksi air *B. javanica*, fraksi heksana *B. javanica*, bisoprolol, serta kontrol yang tidak diberikan apapun kecuali adrenalin. Tekanan darah sistolik diukur menggunakan prosedur tail-cuff. Setelah mengalami hipertensi, tikus yang diberikan fraksi air, fraksi heksana dan bisoprolol menunjukkan penurunan tekanan darah berturut-turut sebesar 72.75 mmHg (-34%), 58.5 mmHg (-28%) and 23.25 mmHg (-12%), sementara ada peningkatan sebesar 15.00 mmHg (+9%) pada kelompok kontrol. Fraksi air diketahui mengandung flavonoid dan alkaloid, sementara fraksi heksana mengandung alkaloid. Berdasarkan hasil penelitian ini, kami menduga bahwa flavonoid dan alkaloid yang terkandung dalam buah *B. javanica* berkerja secara sinergis menurunkan tekanan darah, kemungkinan melalui jalur terkait reseptor α_1 -adrenergik.

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Abstract

Ethnopharmacologically, the fruit of *Brucea javanica* (L.) Merr. is acknowledged in the Indonesian community to lower blood pressure. This study assessed the antihypertensive effect of *B. javanica* fruit extract using adrenaline-induced hypertensive Sprague Dawley rats. Hypertensive rats were divided into 4 groups: group A was given *B. javanica* water fraction and adrenaline, group B was given *B. javanica* hexane fraction and adrenaline, group C was given bisoprolol and adrenaline and group D was given adrenaline solely. Systolic blood pressure was regularly measured using the tail-cuff method. Treatment of adrenaline-induced hypertensive rats independently given *B. javanica* water fraction, the hexane fraction, and the bisoprolol group proved to significantly reduce blood pressure by 72.75 mmHg (-34%), 58.5 mmHg (-28%) and 23.25 mmHg (-12%) respectively, while there was an increase of 15.00 mmHg (+9%) SBP in the negative control group given solely adrenaline. The water fraction contains flavonoid and alkaloid. The hexane fraction of this fruit contains alkaloid. Our study suggest that the flavanoid and alkaloid content in *B. javanica* fruit work synergistically to alleviate hypertension, possibly through α_1 -adrenergic receptor-related mechanism.