Annisa' Rahmatul Fitri, 2020. Pengaruh Ekstrak Etanol Daun Wungu (*Graptophyllum pictum* (L.) Griff) Terhadap Perubahan Kadar Kalsium Darah, Alkali Fosfatase dan Morfometri Tulang Femur Mencit (*Mus musculus*) Yang Diinduksi Deksametason. Skripsi ini dibawah bimbingan Dr. Listijani Suhargo, M.Si dan Dr. Dwi Winarni, M.Si. Program Studi S1-Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian ekstrak etanol daun wungu terhadap perubahan kadar kalsium darah (mg/dL), kadar alkali fosfatase (U/L) serta morfometri tulang femur mencit yang meliputi pengukuran berat (g), panjang (cm) dan diameter (cm) tulang femur mencit yang diinduksi deksametason. Pada penelitian ini digunakan mencit betina sebanyak 25 ekor dibagi menjadi 5 kelompok. K1 sebagai kelompok normal (tanpa induksi deksametason), K2 sebagai kelompok kontrol dengan induksi larutan deksametason dengan dosis 0,0013 mg/kgBB dan akuades, P1, P2, dan P3 sebagai kelompok perlakuan dengan induksi larutan deksametason dengan dosis 0,0013 mg/kgBB dan larutan ekstrak etanol daun wungu dengan dosis 10 mg/kgBB, 20 mg/kgBB, dan 30 mg/kgBB. Perlakuan dilakukan secara per-oral sebanyak 0,2 mL. Ekstrak etanol daun wungu pada perlakuan P1, P2, dan P3 menggunakan pelarut akuades. Pada akhir minggu ke-6, semua mencit dikorbankan untuk diambil darah dan tulang femur. Hasil penelitian menunjukkan bahwa pemberian larutan deksametason dapat mempengaruhi penurunan kadar kalsium darah, kadar alkali fosfatase dan morfometri tulang femur khusunya berat dan panjang tulang femur. Ekstrak etanol daun wungu berpengaruh menaikkan kadar kalsium darah, alkali fosfatase dan morfometri tulang femur khusunya berat dan panjang tulang femur pada mencit yang diinduksi deksametason. Dosis ekstrak daun wungu yang optimum dalam menaikkan kadar kalsium darah, kadar alkali fosfatase dan morfometri tulang femur khususnya berat dan panjang femur adalah 10 mg/kgBB.

Kata kunci: deksametason, osteoporosis, daun wungu, kadar alkali fosfatase, kadar kalsium darah, morfometri tulang

Annisa' Rahmatul Fitri, 2020. The Effect of Ethanol Extract of wungu (*Graptophyllum pictum* (L.) Griff) Leaves on Blood Calsium, Alkaline Phosphatase levels and Femur Bone Morphometry of Mice (*Mus musculus*) Changes Induced by Dexamethasone. This Thesis under the guidance of Dr. Listijani Suhargo, M.Si and Dr. Dwi Winarni, M.Si. Bachelor Biology Study Program, Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

This research was aimed to determine the effect of wungu leaves ethanol extract on the level of blood calcium (mg/dL), level of alkaline phosphatase (U/L), and femur bone morphometry including measurement of weight (g), length (cm) and diameter (cm) of the femur bone that had been induced by dexamethasone. In the study, 25 female mice were used to be divided into 5 groups. K1 as a normal group (without induced by dexamethasone), K2 as a control group induced by dexamethasone solution at a dose of 0,0013 mg/kgBB and aquadest, P1, P2, and P3 as treatment groups induced by dexamethasone solution at a dose of 0,0013 mg/kgBB and wungu leaves ethanol extract solution at a dose of 10 mg/kgBB, 20 mg/kgBB, and 30 mg/kgBB. Treatment was carried out orally as much as 0.2 mL. Wungu leaves ethanol extract in treatments P1, P2, and P3 were dissolved with aquadest. At the end of 6^{th} week, all mice were sacrificed for blood and femur removal. The result of this study shows that administration of dexamethasone solution could affect the decreasing in the level of blood calcium, level of alkaline phosphatase, and femur bone morphometry including of weight and length of the femur bone in mice induced by dexamethasone. Wungu leaves ethanol extract could affect the increasing level of blood calcium, level of alkaline phosphatase, and femur bone morphometry especially in weight and length of the femur bone in mice induced by dexamethasone. The optimum dose of wungu leaves ethanol extract to raise blood calcium level, alkaline phosphatase level and femoral bone morphometry in particular the weight, length and diameter metaphysis of the femur bone was 10 mg/kgBB.

Keywords: dexamethasone, osteoporosis, wungu leaves, calcium blood levels, allakline phosphatase levels, bone morphometry.