# Pengaruh Kombucha Secang Pada Kualitas Tulang Tibia Serta Status Antioksidan Endogen Plasma Darah Tikus Model Ovariektomi (OVX) = Effect of Secang Kombucha on Tibia Bone Quality and Endogenous Antioxidant Status of Blood Serum in Ovariectomized Modeled Rat (OVX)

Grescelcia Coreta Suherman, author



---

Abstrak

Osteoporosis merupakan salah satu penyakit degeneratif pada tulang yang ditandai dengan menurunnya massa tulang yang disebabkan ketidakmampuan tubuh untuk mengatur mineral dalam tulang yang disertai dengan penurunan kekuatan tulang yang kemudian dapat menyebabkan pengeroposan tulang. Pada penelitian sebelumnya, ekstrak Caesalpinia sappan L. atau dikenal di Indonesia sebagai kayu Secang, terbukti dapat mencegah osteoporosis, sementara kombucha dipercaya dapat meningkatkan kadar antioksidan. Pada penelitian ini, dilakukan eksperimen secara in vivo pada kombucha secang. Penelitian ini menggunakan tikus putih betina Sprague-Dawley yang dibagi menjadi 8 kelompok, yaitu kontrol sham dan kontrol negatif (CMC-Na 0,5% 2 ml/200 grBB), kontrol positif (Tamoksifen 0,4 mg/200gr BB), ekstrak Secang (20 mg/200grBB), kombucha (1 mL/200grBB), serta 3 kelompok variasi dosis kombucha Secang dengan D1 (1 mL/200 gr BB), D2 (3 mL/200 grBB/), dan D3 (3 mL/200 grBB/3 kali sehari), dengan pemberian secara oral. Semua tikus dilakukan ovariektomi, kecuali kelompok sham dilakukan pembedahan tanpa pengambilan ovarium. Tikus dipelihara 4 minggu pasca operasi, lalu diberi perlakuan selama 28 hari. Parameter yang diukur adalah kadar kalsium tulang tibia, kadar Malondialdehyde (MDA), kadar Superoxide Dismutase (SOD), dan jumlah sel osteoklas. Berdasarkan penelitian, kombucha Secang dosis 3 (3 mL/200grBB/3 kali sehari) dapat meningkatkan kadar kalsium tulang tibia, serta memiliki kecenderungan menurunkan kadar MDA dan memiliki kecenderungan meningkatkan SOD. Kombucha Secang dosis 2 (3 mL/200grBB sehari) dapat mengurangi jumlah sel osteoklas.

.....Osteoporosis is a degenerative disease of the bones which is characterized by decreased bone mass caused by the body's inability to regulate minerals in the bones accompanied by a decrease in bone strength which can then lead to bone loss. In previous research, Caesalpinia sappan L. extract or known in Indonesia as Secang wood, has been shown to prevent osteoporosis, while kombucha is believed to increase antioxidant levels. In this study, in vivo experiments were carried out on sappan wood kombucha. This study used Sprague-Dawley female white rats which were divided into 8 groups, namely sham control and negative control (CMC-Na 0.5% 2 ml/200 g BW), positive control (Tamoxifen 0.4 mg/200 g BW), extract Secang (20 mg/200grBW), kombucha (1 mL/200grBW), and 3 groups of varying doses of Secang kombucha with D1 (1 mL/200 grBW), D2 (3 mL/200 grBW/), and D3 (3 mL/ 200 grBB/3 times a day), by oral administration. All rats underwent ovariectomy, except for the sham group, which underwent surgery without removing the ovaries. All rats were maintained 4 weeks postoperatively, then treated for 28 days. Parameters measured were tibia bone calcium levels, malondialdehyde (MDA) levels, Superoxide Dismutase (SOD) levels, and osteoclast cell counts. Based on research, 3 doses of Secang wood Kombucha (3 mL/200grBB/3 times a day) can increase tibia bone calcium levels, and has a tendency to decrease MDA levels and has a tendency to increase SOD. Secang wood Kombucha dose of 2 (3 mL/200grBB a day) can

reduce the number of osteoclast cells.