

# Analisis Metabolit pada Plasma Darah terhadap Perubahan Tekanan Darah Tikus Model Pascamenopause yang Diberikan Ekstrak Akar Kelembak (*Rheum Officinale* Baill.) = Metabolites Analysis on Blood Plasma Towards Blood Pressure Changes in Postmenopausal Rat Models Treated with Rhubarb (*Rheum Officinale* Baill.) Root Extract

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## Abstrak

Akar Kelembak (*Rheum officinale* Baill.) yang mengandung senyawa stillben seperti Rhaponticin telah diketahui dapat menurunkan kadar kolesterol plasma. Penelitian ini bertujuan menganalisis pengaruh akar kelembak pada konsentrasi metabolit plasmadarah tikus model pascamenopause dan menganalisis pengaruh ekstrak etanol 70% akar kelembak terhadap penurunan faktor risiko kardiovaskular. Tiga puluh ekor tikus betina diovariectomi dan 6 ekor dilakukan pembedahan tanpa ovariektomi. Hewan dibagi 6 kelompok yaitu kelompok kontrol negatif (CMC 0,5%), kelompok kontrol positif (Tamoksifen sitrat dosis 0,4 mg/200 g BB), 3 kelompok perlakuan ekstrak etanol 70% akar kelembak dengan dosis berturut-turut 7mg/200gBB tikus; 35 mg/200gBB tikus; dan 175mg/200gBB tikus dan kelompok sham (CMC 0,5%). Perlakuan dimulai pada hari ke 21 pascaovariectomi selama 28 hari. Tekanan darah diukur 4 kali pada minggu kedua dan ketiga pascaovariectomi, dan minggu kedua dan keempat setelah pemberian perlakuan sampel dan pengambilan sampel darah pada akhir perlakuan. Hasil pengujian menunjukkan bahwa ekstrak etanol 70% akar kelembak dosis 35mg/200gBB tikus menurunkan tekanan darah tikus yang diovariectomi (tekanan darah sistole  $p=0.000$  dan diastol  $p=0.016$ ), dan menyebabkan perubahan konsentrasi/ kadar asam amino (serin, histidin, treonin dan lisin) pada pemeriksaan HPLC (tidak berbeda bermakna secara statistik) serta senyawa metilprolin dan prolin pada pemeriksaan GCMS.

.....The roots of rhubarb (*Rheum officinale* Baill.) containing compounds such as Rhaponticin stillben has been known to reduce levels of plasma cholesterol. This study aimed to analyze the effect of rhubarb roots in rat blood plasma metabolite concentrations postmenopausal models and analyze the effect of the 70% ethanol extract of the roots of rhubarb to the reduction of cardiovascular risk factors. Thirty ovariectomized female rats and 6 tail surgery without ovariectomy. Animal divided into 6 groups: negative control (CMC 0,5%), positive control group (Tamoxifen citrate dose 0,4mg/ 200g BW), 3 treatments group 70% ethanol extract of the roots of rhubarb with successive doses 7mg/200gW rats; 35mg/200gW rats; and 175mg/200gW rats and sham group (CMC 0,5%). Treatment starts on day 21 pascaovariectomy for 28 days. Blood pressure was measured four times in the second and third weeks pascaovariectomy, and the second and fourth weeks after administration of the sample treatment and blood sampling at the end of the treatment. The test result showed that 70% ethanol extract of the roots of rhubarb dose 35mg/ 200g W rat lower blood pressure ovariectomized rats (systolic blood pressure and diastolic  $p=0.000$   $p=0.016$ ), and led to changes concentrations/ levels of the amino acid (serine, histidine, threonin and lysine) in HPLC examination (no statistically significant difference) and compounds metilproline and proline at GCMS examination.