Aktivitas antimalaria ekstrak sambiloto (andrographis panniculata berm. F) pada mencit yang diinfeksi plasmodium berghei in vivo : analisis mda dan aktivitas katalase pada hati = Antioxidant activity of (andrographis panniculata burm. F) nees extracts through malondialdehyde and catalase levels in plasmodium berghei infected mice

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Abstrak

ABSTRAK
Pendahuluan: Sambiloto atau Andrographis panniculata merupakan sebuah tanaman herbal yang memiliki khasiat sebagai antimalaria dengan cara meningkatkan kerja antioksidan dalam tubuh. Hati merupakan salah satu tempat terjadinya fase perkembangan Plasmodium pada penyakit malaria. Penelitian ini bertujuan untuk menganalisis aktivitas antimalaria dari Ekstrak Etanol Sambiloto (EES) pada mencit yang diiinfeksi Plasmodium berghei secara in vivo melalu pengukuran kadar MDA dan aktivitas spesifik katalase jaringan hati.
Metode: Desain penelitian yang digunakan adalah eksperimental in vivo menggunakan hewan coba mencit Balb/c. Metode penelitian dilakukan dengan mengelompokkan mencit ke dalam empat kelompok yaitu kelompok kontrol yang tidak diberi perlakuan, kelompok I yang diinduksi Plasmodium berghei tetapi tidak diterapi, kelompok II yang diinduksi Plasmodium berghei dan diberi EES 2 mg/kgBB serta kelompok III yang diinduksi Plasmodium berghei dan diberi klorokuin 10 mg/kgBB selama 3 hari. Analisis kadar MDA dilakukan dengan metode Wills dan aktivitas spesifik katalase dengan metode Mates et al.
Hasil: Hasil penelitian menunjukkan terjadi penurunan kadar MDA yang tidak signifikan pada mencit yang diinfeksi dengan Plasmodium berghei dan diberi ekstrak etanol sambiloto (EES) 2 mg/kgBB dibandingkan dengan kontrol negatif (66.49 ± 22,92 vs 69.40 ± 11,69 nmol/g jaringan hati). Namun pada kelompok yang diberi perlakuan klorokuin juga terlihat penurunan kadar MDA yang tidak signifikan dibandingkan dengan kontrol negatif (67.49 ± 7,04 vs 69.40 ± 11,69 nmol/g jaringan hati). Sedangkan aktivitas spesifik katalase kelompok yang diberi EES menunjukkan peningkatan yang tidak berbeda bermakna dibandingkan dengan kelompok kontrol (2,73 ± 0,59 vs 3,73 ± 1.56 Unit/mg jaringan hati). Begitupula dengan klorokuin yang menunjukkan peningkatan aktivitas spesifik katalase yang tidak berbeda bermakna dibandingkan dengan kelompok kontrol (2,97 ± 1,53 vs 3,73 ± 1.56).
Kesimpulan: Pada kelompok dengan pemberian EES 2 mg/kgBB terjadi penurunan kadar MDA serta peningkatan aktivitas spesifik katalase jaringan hati mencit dibandingkan dengan kelompok negatif, tetapi secara statistik tidak

bermakna demikian pula dengan kelompok yang diberi klorokuin.
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ABSTRACT
Introduction: Andrographis panniculata or Sambiloto is a herbal plant that has antimalarial efficacy by increasing antioxidant in body. Liver is one of the places for Plasmodium to develop themselves in malaria. This research aims to analyze the activity of antimalarial from Sambiloto Ethanol Extract (SEE) in mice which infected by Plasmodium berghei in vivo through the measurement of MDA level and the specific activity of catalase in liver tissue.
Method: We used experimental in vivo as the reserach design, using balb/c. The research design is done by grouping the mices into four groups which of the untreated group, group I-induced by Plasmodium berghei but not treated, group II-induced Plasmodium berghei and treated with SEE 2 mg/kg Body weight, group III-induced Plasmodium berghei and treated with chloroquine with 10 mg/kg Body weight in three days. The MDA level analyze is done by the Wills method and the specific activity of catalase with Mates et al method.
Result: The research result showed the decrease of MDA level which not significant in mice that is infected by Plasmodium berghei and treated by SEE 2 mg/ kg BW compared to negative control (66.49 ± 22,92 vs 69.40 ± 11,69 nmol/g liver tissue). However, group that is infected by Plasmodium berghei and treated by chloroquine also showed the decrease of MDA level which not significant compared the negative control (67.49 ± 7,04 vs 69.40 ± 11,69 nmol/g liver tissue). Instead, group which treated by SEE showed the increase in specific activity of catalase compared with control (2,73 ± 0,59 vs 3,73 ± 1.56 Unit/mg liver tissue). Similarly with chloroquine group which showed an increase in specific activity of catalase were not significantly different compared with the control group (2.97 ± 1.53 vs 3.73 ± 1.56 Unit/mg liver tissue).
Conclusion: Group that treated with SEE 2 mg/kg Body weight showed decrease of MDA level and also the increase of catalase specific activity in mice liver tissue compared negative control, but statistically not significant as well as the group given chloroquine;Introduction: Andrographis panniculata or Sambiloto is a herbal plant that has antimalarial efficacy by increasing antioxidant in body. Liver is one of the places for Plasmodium to develop themselves in malaria. This research aims to analyze the activity of antimalarial from Sambiloto Ethanol Extract (SEE) in mice which infected by Plasmodium berghei in vivo through the measurement of MDA level and the specific activity of catalase in liver tissue.
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