

Pengaruh pemberian kombinasi ekstrak sambiloto (*andrographis paniculata nees*) dan spirulina (*arthrosphira platensis gomont*) pada gambaran hematologi dan apoptosis sel limpa mencit terinfeksi *plasmodium berghei* anka = Effect of combination of sambiloto *andrographis paniculata nees* and spirulina *arthrosphira platensis gomont* extract in hematology and apoptosis of spleen cell in *plasmodium berghei* anka infected mice

Tri Wahyuni Lestari, author

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Abstrak

[Pada penelitian ini, telah diuji pengaruh pemberian kombinasi ekstrak sambiloto (*Andrographis paniculata* Nees) dan spirulina (*Arthrosphira platensis* Gomont) terhadap persen parasitemia, persen survival, jumlah eritrosit dan kadar hemoglobin serta persen apoptosis sel limpa pada mencit yang diinfeksi *P. berghei*. Penelitian ini dilakukan dengan rancangan acak lengkap menggunakan 75 ekor mencit strain Swiss Webster. Kelompok uji terdiri dari kelompok AP, AP+ES, AP+PS, CMC dan DHP. Seluruh mencit diinfeksi *Plasmodium berghei* pada hari ke 0. Ekstrak bahan uji diberikan 3 hari sebelum diinfeksi (H-3) dan setiap hari selama 28 hari setelah infeksi. Data parasitemia diambil pada hari ke-3,7,10,15,21 dan 28. Sedangkan data jumlah eritrosit dan kadar Hb diambil pada hari ke 3, 10 dan 21. Pengolahan data dilakukan dengan uji Anova satu arah yang dilanjutkan dengan uji post hoc. Hasil penelitian menunjukkan bahwa kombinasi powder spirulina dan ekstrak sambiloto (AP+PS) memberikan hasil yang berbeda bermakna dalam menekan persen parasitemia ( $p=0,02$ ), meningkatkan jumlah eritrosit ( $p=0,03$ ) dan kadar hemoglobin ( $p=0,01$ ) pada puncak infeksi, dibanding kelompok yang diberi sambiloto saja (AP). Pemberian ekstrak sambiloto dan atau tanpa spirulina dapat menurunkan persen apoptosis sel limpa secara bermakna (AP  $p=0,001$ ; AP+ES  $p=0,000$ ; AP+PS  $p=0,000$ ) dibanding dengan kelompok CMC pada puncak infeksi.;Effect of a combination of extracts of sambiloto (*Andrographis paniculata* Nees) and spirulina (*Arthrosphira platensis* Gomont) had been investigated decrease the number of parasitemia, increase erythrocytes count, level of hemoglobin and apoptosis of spleen cell in *P. berghei* infected mice. This study was conducted by employing a complete random design using 75 Swiss Webster mice. The test group consisted of groups of AP, AP + ES, AP + PS, DHP and CMC. All mice were infected with *P. berghei* on day 0. Material test given 3 days prior to infection (D-3) and for 28 consecutives days orally after infection. Data of parasitemia, taken on D3, 10,15, 21 and 28 while erythrocytes count, and level of hemoglobin taken on D3,10 and 21. Data processed by one way Anova test followed by post hoc test. Results showed that the combination of extract of sambiloto and spirulina powder (AP + PS) was significant in suppressing the number of parasitemia ( $p = 0.02$ ), increase of erythrocytes ( $p = 0.03$ ) and level of hemoglobin ( $p = 0.01$ ) in the peak of infection, compared with the group given only sambiloto (AP). Combination of sambiloto extract and or without spirulina had been significant in decrease apoptosis of spleen cell, (AP  $p= 0,001$ ; AP+ES  $p= 0,000$ ; AP+PS  $p= 0,000$ ) compared with group of CMC, Effect of a combination of extracts of sambiloto (*Andrographis paniculata* Nees) and spirulina (*Arthrosphira platensis* Gomont) had been investigated decrease the

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