

# Pengaruh pemberian secara oral ekstrak akar pasak bumi (*Eurycoma longifolia* Jack) terhadap densitas parasitemia dan kadar hemoglobin pada mencit (*Mus musculus*) terinfeksi *Plasmodium berghei* = The effect of pasak bumi root *Eurycoma longifolia* Jack extract given orally on parasitemia density and hemoglobin level of mice *Mus musculus* infected by *Plasmodium berghei*

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## Abstrak

[Resistensi yang terjadi pada beberapa obat antimalaria, seperti klorokuin, mendasari gencarnya dilakukan penelitian yang bertujuan untuk menemukan terapi antimalaria alternatif, salah satunya dengan memanfaatkan potensi herbal dari alam Indonesia. Ekstrak tanaman yang terbukti pada penelitian in-vivo memiliki efek antimalaria adalah akar pasak bumi (*Eurycoma longifolia* Jack). Penelitian ini merupakan penelitian eksperimental in-vivo yang menguji ekstrak akar pasak bumi dengan dosis 60 mg/kgbb, 75 mg/kgbb, dan 90 mg/kgbb terhadap mencit (*Mus musculus*) yang terinfeksi *Plasmodium berghei*. Peningkatan densitas parasitemia pada hari ke-4 terapi dosis 60 mg/kgbb lebih tinggi dari kontrol negatif, sedangkan terapi dosis 75 mg/kgbb dan 90 mg/kgbb lebih rendah dari kontrol negatif namun perbedaannya tidak signifikan secara statistik. Ditinjau dari persentase inhibisi parasitemia, terapi dosis 60 mg/kgbb memiliki persentase inhibisi parasitemia negatif, sedangkan terapi dosis 75 mg/kgbb dan 90 mg/kgbb memiliki persentase inhibisi parasitemia < 50%. Ditinjau dari kadar hemoglobin, ketiga dosis perlakuan memiliki kadar hemoglobin yang fluktuatif dan cenderung menurun hingga pada kondisi anemia. Hal ini menunjukkan bahwa ekstrak akar pasak bumi dosis 60 mg/kgbb tidak memiliki efek antimalaria, sedangkan dosis 75 mg/kgbb dan 90 mg/kgbb memiliki efek antimalaria namun kurang adekuat. Terapi dosis 90 mg/kgbb menunjukkan peningkatan densitas parasitemia hari ke-4 yang paling rendah dan persentase inhibisi parasitemia paling baik. Dengan demikian disimpulkan bahwa terapi ekstrak akar pasak bumi kurang tepat digunakan sebagai terapi tunggal malaria; Resistance on malaria medication, for example klorokuin, underlie the study that aim to find alternative malaria treatment by using herbal potentiation from the nature of Indonesia. Herbal extract that had been proven in vivo experimental study that has antimalarial effect is Pasak bumi root (*Eurycoma longifolia* Jack). This study is in vivo experimental study that giving Pasak bumi root extract by dose 60 mg/kgbw, 75 mg/kgbw, and 90 mg/kgbw to mice (*Mus musculus*) infected by *Plasmodium berghei*. The increase of parasitemia density in the 4th day of treatment by dose 60 mg/kgbw is higher than negative control, while treatment by dose 75 mg/kgbw and 90 mg/kgbw are lower than negative control, but the difference is not significant in statistic analysis. Reviewed from parasitemia inhibition percentage, treatment by dose 60 mg/kgbw has negative parasitemia inhibition percentage, while treatment by dose 75 mg/kgbw and 90 mg/kgbw have parasitemia inhibition percentage <50%. Reviewed from hemoglobin level, those treatment by three doses have fluctuative hemoglobin level and tend to be decreasing till reaching anemia. It shows that pasak bumi root extract by dose 60 mg/kgbw does not have antimalarial effect, while 75 mg/kgbw and 90 mg/kgbw have inadequate antimalarial effect. Treatment by dose 90 mg/kgbw shows the lowest increase of 4th day parasitemia density and the best parasitemia inhibition percentage. Thus, it could be concluded that pasak bumi root extract is not good enough to be

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