

Yani Martha A, 2019, **Pengaruh *Curcumin* sebagai Antioksidan terhadap Histopatologi Hepar Mencit (*Mus musculus*) yang telah dipapar Timbal (Pb)**, Skripsi ini di bawah bimbingan Sugiharto, S.Si, M.Si. dan Prof. Win Darmanto, M.Si., Ph.D. Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian *curcumin* terhadap histopatologi hepar mencit yang telah dipapar timbal (Pb). Hewan coba yang digunakan sebanyak 25 ekor dengan galur BALB/c. Hewan coba dibagi menjadi 5 kelompok perlakuan yaitu P1 (Kontrol), P2 (timbal 75 mg/kg berat badan), P3 (timbal 150 mg/kg berat badan), P4 (timbal 75 mg/kg berat badan dan *curcumin* 20 ppm), P5 (timbal 150 mg/kg berat badan dan *curcumin* 20 ppm) yang masing-masing terdiri 5 ekor mencit dalam setiap kelompok. Pemberian timbal (Pb) *curcumin* juga dilakukan secara peroral, masing-masing perlakuan diberikan selama 30 hari. Selain itu, mencit juga ditimbang dengan timbangan analitik sejak awal perlakuan hingga akhir. Hepar yang telah diambil melalui pembedahan, dibuat menjadi preparat histologi. Pengamatan mikroskopis dilakukan pada hepatosit normal, regenerasi, bengkak, dan nekrosis. Selain itu dibuat indeks hepatosomatik menggunakan berat badan dan berat hepar. Data yang didapat dari pengamatan hepatosit secara mikroskopis, berat badan setiap minggu, berat badan organ, dan indeks hepatosomatik diolah menggunakan SPSS 12. Hasil analisa didapatkan untuk hepatosit normal pada P1 $0,71 \pm 0,052$; P2 $0,37 \pm 0,029$; P3 $0,41 \pm 0,042$; P4 $0,36 \pm 0,014$; dan P5 $0,52 \pm 0,060$. Hasil analisa hepatosit regenerasi pada P1 $0,12 \pm 0,018$; P2 $0,15 \pm 0,053$; P3 $0,15 \pm 0,009$; P4 $0,11 \pm 0,016$; dan P5 $0,14 \pm 0,029$. Hasil analisa hepatosit bengkak pada P1 $0,07 \pm 0,018$; P2 $0,17 \pm 0,011$; P3 $0,16 \pm 0,070$; P4 $0,21 \pm 0,015$; P5 $0,12 \pm 0,015$. Hasil analisis hepatosit nekrosis pada P1 $0,09 \pm 0,044$; P2 $0,3 \pm 0,049$; P3 $0,27 \pm 0,074$; P4 $0,30 \pm 0,013$; P5 $0,20 \pm 0,027$. Melalui hasil terlihat bahwa pemberian *curcumin* mampu meningkatkan jumlah hepatosit normal juga menurunkan hepatosit yang selnya mengalami nekrosis dan pembengkakan setelah dipapar timbal, namun tidak berpengaruh pada hepatosit dengan sel regenerasi. Kemudian pada indeks hepatosomatik, *curcumin* tidak mampu menurunkan indeks hepatosomatik pada mencit yang dipapar timbal dan diobati dengan *curcumin*.

Kata Kunci: Timbal (Pb), *Curcumin*, Hepar, Hepatosit, Indeks hepatosomatik.

Yani Martha A, **The Effect of Curcumin as an Antioxidant to The Liver Histopathology of Mice Exposed to Lead (Pb)**, this thesis was under guidance by Sugiharto, S.Si., M.Si. and Prof. Win Darmanto, M.Si., Ph.D. Departement of Biology, Faculty Of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

This study was aim to determine the effect of curcumin on liver histopathology of mice exposed to lead (Pb). The experimental animals used were 25 with BALB / c strains. The experimental animals were divided into 5 treatment groups, namely P1 (Control), P2 (lead 75 mg / kg body weight), P3 (lead 150 mg / kg body weight), P4 (lead 75 mg / kg body weight and curcumin 20 ppm), P5 (lead 150 mg / kg body weight and curcumin 20 ppm) which each consists of 5 mice in each group. Giving lead (Pb) curcumin is also carried out orally, each treatment is given for 30 days. In addition, mice were also weighed with analytical scales from the beginning of the treatment to the end. The liver that has been taken surgically is made into histological preparations. Microscopic observations are carried out on normal hepatocytes, regeneration, swelling and necrosis. In addition, a hepatosomatic index was used using body weight and liver weight. Data obtained from microscopic hepatocyte observation, weekly weight, organ weight, and hepatosomatic index were processed using SPSS 12. The analysis results were obtained for normal hepatocytes at P1 $0,71\pm0,052$; P2 $0,37\pm0,029$; P3 $0,41\pm0,042$; P4 $0,36\pm0,014$; dan P5 $0,52\pm0,060$. The analysis of hepatocyte regeneration at P1 was $0,12\pm0,018$; P2 $0,15\pm0,053$; P3 $0,15\pm0,009$; P4 $0,11\pm0,016$; dan P5 $0,14\pm0,029$. The analysis of swollen hepatocytes at P1 $0,07\pm0,018$; P2 $0,17\pm0,011$; P3 $0,16\pm0,070$; P4 $0,21\pm0,015$; P5 $0,12\pm0,015$. The results of hepatocyte necrosis analysis at P1 $0,09\pm0,044$; P2 $0,3\pm0,049$; P3 $0,27\pm0,074$; P4 $0,30\pm0,013$; P5 $0,20\pm0,027$. Through the results it can be seen that the administration of curcumin can increase the number of normal hepatocytes, also decrease necrosis and swelling hepatocytes after exposure to lead, but have no effect on hepatocytes with cell regeneration. Then in the hepatosomatic index, curcumin was not able to decrease the hepatosomatic index in mice exposed to lead and treated with curcumin.

Keywords: Lead (Pb), Curcumin, Liver, Hepatocytes, Index hepatosomatic.