

ABSTRAK

Kartikaningtyas, Ayu Novita. 2017. **Pengaruh Pemberian Kurkumin terhadap Kadar *Matrix Metalloproteinase-2* (MMP-2) Serum pada Tikus Model Fibrosis Hati Akibat Induksi Karbon Tetraklorida (CCl₄)**. Tugas Akhir, Program Studi Kedokteran Fakultas Kedokteran, Universitas Brawijaya. Pembimbing: (1) dr. Supriono, Sp.PD-KGEH. (2) dr. Titik Cinthia Dewi, M.Biomed.

Fibrosis hati merupakan akumulasi berlebih protein matriks ekstraseluler. Mediator fibrosis hati adalah *Hepatic Stellate Cell* (HSC). Aktivasi HSC mengambil peran dalam proses inflamasi melalui interaksi dengan beragam jenis sel imun yang dapat mensintesis protein matriks dan menghasilkan beberapa *matrix metalloproteinase* (MMP) yang dapat menurunkan matriks ekstraseluler. *Matrix Metalloproteinase 2* (MMP-2) terlibat dalam pembentukan dan perbaikan fibrosis hati. Penelitian ini bertujuan untuk mengetahui pengaruh kurkumin terhadap kadar *matrix metalloproteinase 2* (MMP-2) serum pada tikus model fibrosis hati akibat induksi karbon tetraklorida (CCl₄). Penelitian ini menggunakan studi eksperimental secara *in vivo* terhadap tikus *Rattus norvegicus* galur Wistar berusia 2-3 bulan. Total sampel sebanyak 32 ekor tikus yang dibagi menjadi 8 kelompok, yaitu kontrol negatif diberikan NaCl 9%, kontrol positif diinduksi dengan CCl₄, kelompok perlakuan 2 (KP-2), KP-5, KP-9 diinduksi CCl₄ dan diberikan kurkumin selama 2, 5, dan 9 minggu, Kelompok Kontrol 2 (KK-2), KK-5, KK-9 diinduksi CCl₄ dan diberikan CMC 1% selama 2, 5, 9 minggu. Pada uji *One-way Anova* menunjukkan bahwa pengaruh pemberian kurkumin memiliki perbedaan signifikan ($p < 0,05$) terhadap kadar *matriks metalloproteinase 2* (MMP-2) serum ($p = 0,001$) dan pada uji *Post Hoc*, terdapat perbedaan signifikan antara kontrol positif dengan KP-2, KP-5 dan KP-9. Kesimpulan dari penelitian ini adalah pemberian kurkumin memiliki pengaruh terhadap kadar *matriks metalloproteinase-2* (MMP-2) pada tikus model fibrosis hati.

Kata Kunci : Fibrosis hati, *Matrix metalloproteinase 2*, Karbon Tetraklorida.

ABSTRACT

Kartikaningtyas, Ayu Novita. 2017. **Effect of Curcumin on Matrix Metalloproteinase-2 (MMP-2) Serum Level in Rat Liver Fibrosis Model Induced by Carbon Tetrachlorida (CCl₄)**. Final Assignment, Medical Program, Faculty of Medicine, Universitas Brawijaya. Supervisors : (1) dr. Supriono, Sp.PD-KGEH. (2) dr. Titik Cinthia Dewi, M.Biomed.

Liver fibrosis is the excessive accumulation of extracellular matrix proteins. Liver fibrosis mediator is Hepatic Stellate Cell (HSC). HSC activation play a role in inflammatory processes throught interaction with various types of immune cell that can synthesize proteins and produce some Matrix Metalloproteinase (MMP) which can degrade extracellular matrix. Matrix Metalloproteinase 2 (MMP-2) involve formation and repair of liver fibrosis. The purpose of this study was to determine effects of curcumin on matrix metalloproteinase-2 (MMP-2) serum level in rat liver fibrosis model induced by carbon tetrachlorida (CCl₄). This research used experimental studies in vivo with *Ratus neovergicus* Wistar rats aged 2-3 months. Total sample of 32 rats are divided into 8 groups: namely the negative control given NaCl 9%, the positive controlled induced with CCl₄, treatment group 2 (KP-2), KP-5, KP-9 induced CCl₄ and given curcumin for 2, 5, and 9 weeks, the control group 2 (KK-2), KK-5, KK-9 induced CCl₄ and given CMC 1% for 2, 5, 9 weeks. One-way ANOVA test showed that the effect of curcumin had a significant difference ($p < 0.05$) of matrix metalloproteinase 2 (MMP-2) serum levels ($p = 0.001$) and Post Hoc test, there is a significant difference between the positive control with KP-2, KP-5 and KP-9 . The conclusion of this research was the curcumin has an influence on the levels of matrix metalloproteinase-2 (MMP-2) in the rat model of liver fibrosis.

Keywords: Liver fibrosis, Matrix Metalloproteinase 2, Carbon Tetrachloride.