



## Study on the dynamic alterations of serum HA in rats with carbon Tetrachloride-induced liver fibrosis

Lan Ma, Li-Sheng Zhao, Chun-Hua Li, Qi Lu, Ren-Kuan Li, Shuang-Seng Deng

Lan Ma, Li-Sheng Zhao, Chun-Hua Li, Qi Lu, Ren-Kuan Li, Shuang-Seng Deng, Monoclonal Antibody Biotechnology Center of Yunnan University, Kunming 650091, Yunnan Province, China

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Correspondence to: Dr. Lan Ma, Monoclonal Antibody Biotechnology Center of Yunnan University, Kunming 650091, Yunnan Province, China. [lisheng@public.km.yn.cn](mailto:lisheng@public.km.yn.cn)  
Websites: <http://www.wd.org.cn>  
Telephone: +86-871-5033160  
Fax: +86-871-5033626

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### Abstract

**AIM:** To study the clinical significance of alterations of serum hyaluronic acid in rats with carbon tetrachloride induced liver fibrosis.

**METHODS:** Rat liver fibrosis model was induced by carbon tetrachloride (CCl<sub>4</sub>). The rats were divided into five groups: group 1 (control): 0 wk with no CCl<sub>4</sub>-inducing; group 2, 3, 4 and 5: 3, 6, 9 and 12 wk after CCl<sub>4</sub>-induction respectively. Serum HA level was

analysed among various live r fibrosis groups and control, and then compared the HA findings with the hepatic histopathology.

**RESULTS:** During rat liver fibrosis, serum HA levels of the liver fibrosis groups (group 2: 7.98 ng/mL; group 3: 20.10 ng/mL; group 4: 229.73 ng/mL; group 5: 324.74 ng/mL) were significantly higher than that of control group (group 1: 0.21 ng/mL) ( $P < 0.01$ ), in which group 4 and group 5 are much higher 1094 times (229.73 ng/mL/0.21 ng/mL) and 1546 times (324.74 ng/mL/0.21 ng/mL) than group 1 respectively. When compared with each other, the serum HA levels are 38 times (7.98 ng/mL/0.21 ng/mL;  $P < 0.01$ , group 2 vs group 1); 2.5 times (20.10 ng/mL/7.98 ng/mL;  $P < 0.01$ , group 3 vs group 2); 11.4 times (229.73 ng/mL/20.10 ng/mL;  $P < 0.01$ , group 4 vs group 3); 1.4 times (324.74 ng/mL/229.73 ng/mL;  $P < 0.01$ , group 5 vs group 4) respectively.

**CONCLUSION:** The results demonstrated that the dynamic alterations of serum HA play an important role in the early clinical diagnosis and staging of liver cirrhosis.

**Key words:** Hyaluronic acid/blood; Liver fibrosis; Rats; Sandwich immunoassay; Carbon tetrachloride; Immunohistochemistry

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