

## Macrophage activation enhances liver fibrosis induced by carbon tetrachloride

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Liver fibrosis occurs in many types of liver diseases, and then it will develop liver cancer following cirrhosis. Liver macrophage activation is reported to cause the development and exacerbation of liver fibrosis, but the mechanism is unclear. Moreover, there are no suitable models to investigate the mechanisms. In this study, we investigated if macrophage activation by Bacillus Calmette - Guérin (BCG) enhances liver fibrosis induced by carbon tetrachloride (CCl<sub>4</sub>) on mice. We injected BCG or saline (control group) and then administered CCl<sub>4</sub> twice a week for 12 weeks. Compared to the control group, the area of liver fibrosis was significantly larger in the BCG group. In addition, many activated macrophages were found by immunohistochemical staining in the BCG group, but rarely found in the control group. These results suggest that hepatic macrophage activation may enhance liver fibrosis. Using this model, we will elucidate what mechanisms of development and exacerbation of liver fibrosis by macrophage activation.