

## Comparison on the therapeutic action of coptis and bear bile on experimental liver fibrosis

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Bear bile is a Chinese Medicine that was used to treat liver diseases for thousands of years. However, the use of bear bile in Chinese Medicine clinical practice has received a lot of challenges since bears are currently endangered. It is an ethical problem that obtaining bile juice from the animals. Coptis is a Chinese Medicine that has been used to treat heat-related diseases in clinical practice and our clinical observation has found that Coptis is effective in curing liver diseases. The aim of study is to investigate if the therapeutic effect of Coptis is comparable with bear bile on the experimental hepatic fibrosis models. CCl<sub>4</sub>, bile duct ligation (BDL) and alcohol-induced liver fibrosis models were used in this study and the therapeutic effects of Coptis and bear bile were evaluated. The chemical composition of Coptis and bear bile was analyzed by high performance liquid chromatography (HPLC). It was observed that the major active components of Coptis was berberine and berberine-like alkaloids and the major compounds in bear bile was Tauroursodeoxycholic acid (TUDCA). Significant induction on the Hyp content, the biomarker of liver fibrosis in tissue, was observed ( $p < 0.05$ ). Drug intervention could reduce the Hyp content in modeled rats ( $p < 0.05$ ). The effect of Coptis is comparable with Bear bile ( $p > 0.05$ ). However, it was observed that BB (TUDCA) might exhibit better effect in inhibiting Hyp content than Coptis did in hepatic fibrosis though no statistical significance could be found ( $p > 0.05$ ). Both Coptis and Bear bile exhibited potent therapeutic effect regarding the combined scores based on the examination of hepatocyte death, inflammatory cell infiltration and fibrosis. It was observed that both Coptis and Bear bile could completely combat the liver fibrosis induced by alcohol, while Bear bile exhibited better effect on chemical toxin CCl<sub>4</sub>-induced hepatic damage and fibrosis and Coptis showed potent action on BDL-induced fibrosis. In conclusion, the anti-fibrotic action of Coptis was comparable to bear bile on the all three experimental animal models. Coptis had the potential to replace bear bile for the treatment of liver diseases.

### Biography

Ning Wang is currently Post-doctoral research fellow in the School of Chinese Medicine, The University of Hong Kong, HKSAR, China. He obtained his Bachelor degree in Biotechnology and Master degree in Pharmaceutical Science in Sun Yat-Sen University in China from China and completed his Ph.D. studies in Pharmacology of Chinese Medicine in School of Chinese Medicine, The University of Hong Kong. He focused on the research of Pharmaceutical Science and Pharmacology for more than 7 years and his major research interest is on the cellular and molecular pharmacology of Chinese Medicine and natural products in treating liver diseases. He has published more than 20 papers in international peer-reviewed journals.