



# Tangshen formula alleviates hepatic steatosis by inducing autophagy through the AMPK/SIRT1 pathway

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## Abstract

**T**angshen formula (TSF), a formula of Chinese herbal medicine, improves lipid metabolism in humans and animals with diabetic kidney disease. However, the effect and mechanism of TSF on nonalcoholic fatty liver disease (NAFLD) remain unclear. The activation of autophagy appears to be a potential mechanism for improving NAFLD. In the present study, we examined the therapeutic effect of TSF on hepatic steatosis and sought to explore whether its effect is related to activating autophagy. Here, we showed that TSF treatment significantly attenuated hepatic steatosis in both high-fat diet (HFD) and methionine choline-deficient diet (MCDD)-fed mice. Meanwhile, TSF reduced lipid accumulation in palmitate (PA)-stimulated HepG2 cells and primary mouse hepatocytes. Furthermore, TSF increased Sirtuin 1 (SIRT1) expression and promoted autophagy activation in vivo. TSF also improved PA-induced suppression of both SIRT1 expression and SIRT1-dependent autophagy, thereby alleviating intracellular lipid accumulation in vitro. In addition, TSF increased SIRT1 expression and induced autophagy in an adenosine monophosphate-activated protein kinase (AMPK)-dependent manner. Moreover, SIRT1 knockdown abolished the autophagy-inducing and lipid-lowering effects of TSF. In conclusion, TSF improved lipid accumulation and hepatic steatosis by inducing the AMPK/SIRT1 pathway-mediated autophagy.



## Biography:

Ping Li is the chairman of Beijing Key Lab for Immune-Mediated Inflammatory Diseases, Institute of Clinical Medical Science, China-Japan Friendship Hospital. She has engaged in the clinical and basic research of integrated traditional Chinese and western medicine treating kidney disease for 36 years and successively presided over and undertook more than 20 national and provincial level scientific research projects. She has won the second prize of national science and technology progress award and 11 prizes above provincial and ministerial level as the first accomplisher. She has obtained 5 national invention

patents. She has published more than 200 papers in journals and academic conferences at home and abroad, of which more than 80 papers are included in SCI. She wrote 11 academic works and edited 5 academic works

## Speaker Publications:

1. Role of transient receptor potential canonical channel 6 (TRPC6) in diabetic kidney disease by regulating podocyte actin cytoskeleton rearrangement
2. Tangshen formula alleviates hepatic steatosis by inducing autophagy through the AMPK/SIRT1 pathway



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