



Hypolipidemic effect of safflower yellow and primary mechanism analysis

L.D. Bao¹, Y. Wang¹, X.H. Ren¹, R.L. Ma¹, H.J. Lv² and B. Agula³

¹Department of Pharmacy,
Affiliated Hospital of Inner Mongolia Medical University, Hohhot, China

²Department of Scientific Research,
Affiliated Hospital of Inner Mongolia Medical University, Hohhot, China

³College of Traditional Mongolia Medicine,
Inner Mongolia Medical University, Hohhot, China

Corresponding authors: H.J. Lv / B. Agula
E-mail: lvhaijundsr@163.com / agula_b@163.com

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ABSTRACT. We examined the hypolipidemic effect of safflower yellow (SY) on hyperlipidemic mice and its influence on the biological synthesis of cholesterol in cells. Over 4 weeks, the levels of total cholesterol, triglyceride, low-density lipoprotein cholesterol, and high-density lipoprotein cholesterol in serum were detected using a kit; mouse liver samples were acquired for paraffin sections, and mouse liver cells were observed under light microscope. Chinese hamster ovary cells were cultured *in vitro*, and an amphotericin B-cell model was adopted to observe the inhibitory effect of SY on the biological synthesis of intracellular cholesterol. An enzyme-linked immunosorbent assay was used to detect the survival rate of Chinese hamster ovary cells. The middle and high doses of SY significantly reduced the levels of total cholesterol, triglycerides, and low-density lipoprotein cholesterol in the serum of hyperlipidemic mice and low-density lipoprotein cholesterol/high-density lipoprotein cholesterol ratio ($P < 0.05$), and the fatty liver of hyperlipidemic mice was significantly alleviated. SY had a protective

effect on Chinese hamster ovary cells following amphotericin B injury ($P < 0.01$). SY exerts significant hypolipidemic effects and prevents fatty liver in a mechanism associated with inhibition of the biosynthesis of intracellular cholesterol.

Key words: Cholesterol biosynthesis inhibition; Hypolipidemic effect; Fatty liver; Safflower yellow