# Interactions of Lipid Metabolism and Intestinal Physiology with Tremella fuciformis Berk Edible Mushroom in Rats Fed a High-Cholesterol Diet with or without Nebacitin

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**Abstract**

Male adult Wistar rats were randomly divided into six groups in a 2 × 3 factorial design and fed diets containing different levels of Tremella fuciformis Berk (TFB) dietary fiber (0, 5, or 10%) and 1 g of cholesterol/100 g of diet with or without 0.7% Nebacitin for 4 weeks. TFB contained 6.2% soluble dietary fiber and 57.3% insoluble dietary fiber. The results showed that the serum LDL-cholesterol, hepatic total cholesterol, and triglyceride levels were significantly decreased ($P < 0.05$) in the rats fed diets with TFB content with or without Nebacitin. However, the serum total cholesterol, VLDL-cholesterol, and triglyceride levels were significantly decreased ($P < 0.05$) by Nebacitin. In feces, the presence of TFB (T5, T10, AT5, and AT10) in the diet significantly increased the total neutral steroids and bile acid excretions and undigested fiber concentrations as compared to T0 or AT0. In the small intestine, the Nebacitin diets increased the weights of both cecum and colon−rectum contents and lowered short-chain fatty acid (SCFA) concentrations of serum and cecal contents more than no Nebacitin diets did. It was suggested that the hypocholesterolemic effect of TFB dietary fiber may be mediated by the increase in fecal neutral steroids and total bile acids excretion and the increase in SCFA productions. The TFB edible mushroom dietary supplement altered the intestinal physiology of the rats.