

Taiwanofungus camphorate activates peroxisome proliferator-activated receptors and induces hypotriglyceride in hypercholesterolemic rats

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摘要

Abstract

Taiwanofungus camphoratus (*T. camphoratus*), a fungus and a Taiwan-specific, well-known traditional Chinese medicine, has long been used to treat diarrhea, hypertension, itchy skin, and liver cancer. To gain a large amount of *T. camphoratus*, several culture techniques have been developed, including solid-state culture and liquid-state fermentation. Peroxisome proliferator-activated receptor gamma (PPAR γ) has been described as a hypoglycemic agent that increases insulin sensitivity in peripheral tissues and results in reduced blood glucose, insulin, and triglyceride levels in insulin-resistant animals and in type-2 (non-insulin-dependent) diabetic patients. In this study, we investigate the possibility that *T. camphoratus* might activate PPAR γ in vitro and hypolipidemic activity in vivo. The results show that an aqueous extract of the wild fruiting bodies of *T. camphoratus* was able to increase the PPAR γ activity in cells transfected with the PPAR γ expression plasmid and the AOX-TK reporter plasmid. Based on the cell experiment, we examined the hypolipidemic effect of wild fruiting bodies (WFT) and a solid-state culture (SST) of *T. camphoratus* on SD rats fed on a high-cholesterol (HC) diet. The results show that WFT significantly decreased the serum triglyceride level, but could not affect the cholesterol level. SST only slightly decreased the serum triglyceride level. In addition, both WFT and SST

significantly decreased the serum alanine transaminase (ALT) level and protected against the liver damage induced by the HC diet from the results of a histological examination. These results suggest that *T. camphoratus* might contain PPAR γ ligands and result in a hypotriglyceridemic effect, and that it also exhibits a liver protective activity