

Active Metabolite of Curcumin - Tetrahydrocurcumin – Anti-Diabetic and Antioxidant Effects

In a study involving streptozotocin-nicotinamide-induced diabetic rats, administration of tetrahydrocurcumin - one of the active metabolites of curcumin - was found to significantly reduce levels of blood glucose, increase levels of plasma insulin, and protect against lipid peroxidation. For a period of 45 days, rats were administered tetrahydrocurcumin at a dose of 80 mg/kg body weight. Results showed significant reductions in blood glucose, significant increases in plasma insulin, and significant reductions in lipid peroxidation-induced membrane damage (as assessed via the significant increases found in the activities of superoxide dismutase, catalase, glutathione peroxidase, glutathione-S-transferase, reduced glutathione, and vitamin C and vitamin E in the liver and kidney, and the significant decreases in TBARS and hydroperoxides formation in the liver and kidney). The authors state that, "The antidiabetic and antioxidant effects of THC are more potent than those of curcumin at the same dose." The results of this study in rats suggest that THC holds promise as a potential therapy for the treatment of patients with type 2 diabetes. Additional research is needed.

Reference: "Effect of tetrahydrocurcumin on plasma antioxidants in streptozotocin-nicotinamide experimental diabetes," Murugan P, Pari L, Life Sciences, 2006; 79(18): 1720-1728.