Development of Antrodia camphorata mycelium with submerge culture


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ABSTRACT

Antrodia camphorata (Zhan-Ku), is a new and exclusive fungus parasitic on the inner wall of the heart wood of endemic evergreen Cinnamomun kanehirai Hay. in Taiwan. It has been unutilized as traditional herb for the treatment of food and drug intoxications, diarrhea, abnormal pains, hypertension and liver cancer in Taiwan folk medicine. Solid culture of its fruit body is still difficult. So a submerged culture was developed on 50 Ton scale in a 90 rpm, 0.5vvm, 28°C condition. Whole broth turned into redness at 8th day after 1% inoculating was concentrated at 55°C and lyophilied. The product is proven as safe after evaluation in Ames test, in vitro and in vivo chromosomal damage in mammalian cell, 14-day, 28-day, 90-day feeding toxicity and teratogenicity studies. The induction of protective immunity of A. camphorata against Schistosoma mansoni in vivo animal model was effective in reducing infection ratio up to 60 % after 4-week feeding. The mRNA expression of 3 cytokines including TNF-α, IFN-γ, IL-2 increases very significantly but not on IL-4 and IL-10.

Key Words: Antrodia camphorata, bioactivity, safety, submerge culture.