

Research Paper :

## Hypolipidemic effect of oyster mushroom nutraceuticals

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### ABSTRACT

*Pleurotus sajor-caju* which is commercially grown was selected for development of nutraceutical. The present study was a multivariate experimental research design in which four nutraceuticals were developed out of mycelium and fruiting powder of oyster mushroom and in order to feed about 30 male albino rats which were randomly divided into five groups for a period of 30 days. Blood serum samples of rats were analyzed for lipid profile to know the effect. The effect of doses on serum lipid levels *i.e.* total cholesterol, triglyceride, HDL cholesterol and LDL cholesterol of albino rats were observed. Findings showed that the total cholesterol, triglyceride and LDL-ch levels were found significantly ( $P < 0.01$ ) low in rats kept on doses of matured mycelium and immature two gram mycelium dose was found the most effective. The present study has identified the lipid lowering property of mushroom nutraceuticals. The study concludes that large doses of mycelium showed better lipid lowering effect than small doses.

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“Let food be your medicine and medicine be your food” said Hippocrate 2500 years ago. The philosophy of food as medicine is more relevant today than ever before. The Asian population has started recognizing the need of nutraceuticals because of the increasing degenerative diseases, healthcare costs and the lack of nutrition. In the last two decades, there has been an upsurge on the use of mushrooms as nutraceuticals. Mushrooms are the fungi that have been used as food since time immemorial.

Mushroom in general, *Pleurotus*, *Lentinus* and *Grifola* are popular because of their high fibre, proteins, micronutrient content and low calorific value which are almost ideal for cardiovascular diseases as first suggested by traditional Chinese medicine (Breene, 1990). Mushrooms contain several physiologically active substances including polysaccharides, heteroglucans, chitinous substances, peptidoglucans, heteroglucans, lectins, dietary fibre and organic substances, such as novel phenols.

Besides the aspects which make mushrooms ‘the ultimate health food’, because of presence of many useful medicinal attributes, active principles are like to be immunostimulating polysaccharides. Cochran (1978) have reviewed the literature on antibiotic activities (antiviral, antifungal and antibacterial) antitumor and hypolipidemic effects of mushrooms but most important and significant

medicinal effects having recently attracted the attention of researchers are the antitumor, hypocholesterolemic, hypolipidemic, antihypertensive and hypoglycemic effects.

Mushrooms are traditionally used in Chinese medicine and are commonly used for pharmaceutical purpose and health foods. A number of medicinal mushrooms have recently been reported to possess significant antioxidant activity (Jones and Janardhanan, 2000). Oyster mushroom (*Pleurotus* species) is extremely delicious as well as conferring various health giving properties and benefits. Traditionally it has been used to strengthen veins and relax tendon. In China oyster mushroom is indicated for joint and muscle relaxation. An aqueous extract from the popularly cultivated oyster mushroom (*Pleurotus sajor-caju*) has been shown to exhibit hypotensive effect (Tam *et al.*, 1986).

Attempts have been made to develop medicines from wild mushroom as are highly medicinal but none of the attempts has been made to design dietary supplements out of commercially grown oyster mushroom. Therefore present investigation was designed to determine the hypolipidemic effect of oyster mushroom nutraceutical doses on serum lipid level of albino rats.

### EXPERIMENTAL PROCEDURE

The study was conducted during the year 2006 in