J. Mycopathol. Res. 44(2) : 321-322 (2006)

Evaluation of pharmacognostic profile of *Auricularia auricula*

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Compounds derived from certain medicinal mushrooms are used extensively in the Orient to increase disease resistance and to normalize body functions. Here attempts have been made to evaluate the pharmacognostic profile of a wild edible mushroom, *Auricularia auricula*. These studies include physical constant values, extractive values, fluorescence characteristics and behavioural characteristics with different chemical reagents of powdered fruit body. Results of the study suggest that the characters are specific for individual mushroom which helps in their identification from their adulterants and substitutes.

Key words : ***Auricularia auricula*, pharmacognosy**

INTRODUCTION

The medicinal use of mushroom possess a very long tradition in Asian countries, where as their use in the western hemisphere has been increasing slightly only since the last decades (Lindequist *et al.*, 2005). *Auricularia auricula-judae, A. auricula* and *A. polytricha* have been used as therapeutics for many centuries in China, particularly to cure hemorrhoids and strengthen the body, perhaps by stimulating the immune system. It has been also sometimes used to treat hemoptysis, angina, diarrhea and gastrointes-tinal upset. Earlier reports have shown that the polysaccharides of *Auricularia* sp have stimulatory effects on the immune system of human. In some cases it causes the production of interferon and interleukins that then stops the proliferation of cancer cells. They have also been found to have antitumour, cardiovascular and hypocholestero-lemic, antiviral, antibacterial and antiparasitic effects (Wasser and Weis, 1999). *A. auricula* has also been shown to have strong antioxidant and nitric oxide synthase activation properties (Acharya *et al,* 2004). Here attempts have been made to evaluate the pharmacognostic profile of powdered fruit body of *A. auricula*.

MATERIALS AND METHODS

Collection and identification of the specimen

The specimen was collected from the forest of Darjeeling Himalaya during the month of August. Identification of the fungus was done by following authentic literature of Ramsbottom (1965) and Bessey (1978).

Pharmacognostic study

Dried powder of the sample was taken to determine the extractive values by using successively non-polar to polar solvents starting from petroleum ether, benzene, chloroform, acetone and methanol in Soxhlet extraction apparatus. The dried extracts were obtained after evaporation of solvent under reduced pressure.

The dried extracted materials were subjected to the preliminary phytochemical tests for the presence of active constituents such as alkaloids, polyphenols, sterols, carbohydrate and flavanoids (Kokate, 1994).

The reactions of the powdered materials with the

different chemical regents like picric acid, nitric acid, hydrochloric acid, sulphuric acid, acetic acid, ferric chloride, sodium hydroxide, iodine were determined (Kokate, 1994) and the fluorescence characteristics of the dried powder were also observed under UV light at 254 nm.

RESULTS AND DISCUSSION

The extractive values obtained after successive solvent extraction where the petroleum ether showed the maximum values (1.8%) and chloroform with the minimum (0.52%) (Table 1). The primary phytochemical test was done to evaluate the presence of active constituents. The results depicted the presence of flavonoids in all solvent extracts (Table 2). Reactions of powdered sample on treatment with the different chemical reagents (Table 3) showed different types of colour and also revealed specific fluorescent characteristics when subjected under ultraviolet light (Table 4).

Table 1 : Extractive Values in the following solvent extracts and colour

Solvents	Colour of extractives	% of extractive values
Pet.ether	Light cream	1.80
Benzene	Colourless	0.58
Chloroform	Yellow	0.52
Acetone	Faint cream	0.58
Methanol	Creamy	0.68
Ethanol	Yellowish	0.82

Table 2 : Preliminary phytochemical test for different extracts

Extract\constituent	Alkaloid	Poly-phenols	Sterols	Carbo-hydrate	Flavo-noids
Petroleum ether extract	-	-	-	-	+
Benzene extract	-	-	+	-	+
Chloroform extract	+	-	+	-	+
Acetone extract	-	+	+	+	+
Methonal extract	+	+	-	+	+
Ethanol extract	+	+	-	+	+

Table 3 : Behaviour of powdered sample on treatment with different chemical reagents

Chemical	Colour observation
Power as such	Grayish brown
with Picric acid	Brownish yellow
with HNO_3	Brownish
with HCl	Brownish black
with H_2SO_4	Brownish grey
with CH_3COOH	Grayish brown
with $FeCl_3$	Blackish
with NaOH	Grayish
With I_2	Brownish black

Table 4 : Observation of fluorescence characters of powdered material under UV light.

Treatment	Fluorescence
Powder as such	Grey
Powder mounted in nitrocellulose paper	Greenish
Powder treated with NaOH	Greenish
with NaOH in water, dried and mounted with nitrocellulose	Yellowish green
with NaOH with methanol	Greenish
with HCl	Florescence green
with HNO_3 dil. with equal vol. of water	Florescence green
with HCl, dried and mounted with nitrocellulose	Greenish
with H_2SO_4 dil. With equal vol. of H_2O	Florescence green

Now a days modern medicinal science was looking for the development of new drugs against the killer diseases from the lower groups of plants and fungi including mushrooms. Unlike higher plants, from the dry powdered materials of mushrooms it was very difficult to identify the purity of the material by microscopic study because it consisted of deformed mycelium. So the above mentioned qualitative and quantitative pharmacognostic parameters may play the crucial role for identification of the purity of a dry powdered mushroom sample.

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(Accepted for publication 7 August 2006)