

A GOLD-MUSHROOM COMBO TO EASE DRUG DELIVERY

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Lab-grown *Cordyceps militaris*. Photo: Special Arrangement

Medicines may soon have traces of ultramicroscopic gold powered by a super mushroom for greater efficacy.

Cordy gold nanoparticles (Cor-AuNPs), the outcome of a collaborative experiment by scientists from four Indian institutions, has earned an international patent from Germany. These nanoparticles, derived from the synthesis of the extracts of *Cordyceps militaris* and gold salts, could make drug delivery in the human body faster and surer.

Cordyceps militaris is a high value parasitic fungus, lab-grown at the Department of Biotechnology's Technology Incubation Centre (TIC) in Bodoland University, one of the collaborators of the patented research work. Gold salts are ionic chemical compounds of gold generally used in medicine.

"Penetration in the cells is more when the drug particles are smaller. *Cordyceps militaris*, called super mushroom because of its tremendous medicinal properties, adds bioactive components to the synthesis of gold nanoparticles for better penetration," Sandip Das, head of the incubation centre, told *The Hindu*.

He was a contributor to developing Cor-AuNPs along with Vashkar Biswa and Raju Ali from the Bodoland University. The other collaborators were Shailendra Gurav, Nilambar Gurav and Girish Gawas of Goa University's Department of Pharmacology; Pradeep Gandhale from the National Institute of High Security Animal Diseases in Bhopal, Madhya Pradesh; and Singamoorthy Amalraj and Muniappan Ayyanar of AVVM Sri Pushpam College in Thanjavur, Tamil Nadu.

Dr. Das and Mr. Biswa have been working extensively on the genetic diversity and medicinal properties of the wild *Cordyceps* mushroom found in the eastern Himalayan belt. Over eight years, they standardised the cultivation of this mushroom with antimicrobial, antidiabetic and antioxidant properties.

"The collaborative study has validated its [the super mushroom's] medicinal and nutraceutical properties... Biosynthesised nanogold particles indicate a new application of nanoparticles in the development of therapeutic drugs which can be delivered as ointments, tablets, capsules, and in other forms," the team behind Cor-AuNPs said.

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