

Kala-Azar Cure Found in Chayote Vegetable

Visceral leishmaniasis, also known as kala-azar, black fever or Dumdum fever, is the most severe form of leishmaniasis, caused by protozoan parasites of the genus *Leishmania*. According to the World Health Organization (WHO), it is the second-largest parasitic killer in the world after malaria. In this disease, the parasites migrate to the internal organs like the liver, spleen, bone marrow resulting in the death of the patient if treatment is not provided in due time. Although a few medicines are available for the treatment of the disease but their high cost, related severe side-effects and developing drug resistance lately restrict their usage.

In a study published in the journal, *Scientific Reports* (2018, 8: 8814), researchers at the IIT, Guwahati, have prepared nanosilver particles (1 nm - 100 nm in size) by employing a natural approach. This is not the first time that nanosilver formulations have been tried against kala-azar. However, a natural and easy way of producing them was not available until now. In this study, researchers chose Chayote (*Sechium edule*), a vegetable which is widely grown in Assam and other regions of the country. It was chosen as a phyto-resource because it is readily available, is inexpensive, and is unexplored yet.

The scientists extracted the juice of the vegetable and mixed it with an equal quantity of silver nitrate solution to prepare the formulation. Within eighteen hours, almost all silver nitrate got reduced to silver particles. The latter was found to be nearly 1.5 times more effective than the drugs presently in use. The scientists also tested their efficacy on human cell line and found them to be safe. Thus, this report clearly indicates that these silver nanoparticles are safe as well as specific for parasites causing kala-azar. The method described herein can be used in pharmaceutical industries, in future, for the scaled-up synthesis of

CSIR-IMTECH and Zydus Cadila Sign Agreement to Fight Drug-Resistant Infections

For the treatment of drug-resistant infections, CSIR-Institute of Microbial Technology (IMTECH) has inked a collaborative research agreement with pharmaceutical major Zydus Cadila. Scientists from both organizations will be working together on genomics and microbiology to identify a new drug as a potential anti-tuberculosis compound. The agreement is a move in the direction towards supporting the WHO's 'The End TB Strategy'.

The partnership will hopefully deliver new therapies for the country, as CSIR-IMTECH is renowned for its vast scientific experience in

microbial related research; whereas Zydus Cadila is an international pharmaceutical expert in drug discovery and development. The project will aim at developing new drug combinations against drug-resistant pathogens that cause severe diseases in India as well as all over the world.



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