Black pepper may hold the key for Corona fighting drug

New Delhi, Oct 15 (India Science Wire): A team of Indian scientists has identified black pepper, the everyday kitchen spice, as a possible candidate for developing a drug against the Coronavirus.

A computational study conducted by the researchers from the Department of Physics at the Indian Institute of Technology (Indian School of Mines), Dhanbad has found that Piperine found in black pepper, can bind and inhibit the SARS-Cov-2 virus that causes the disease.

Explaining their work, the leader of the team, Prof. Umakanta Tripathy, said that Coronavirus, like any other virus, uses the proteins on its surface to enter into the cells of the human body. He and his team looked for natural compounds that could bind to these proteins and stop the virus from entering human cells. They used computer-based cutting edge techniques such as molecular docking and molecular dynamics simulation to hunt for potential inhibitors.

They selected 30 molecules present in common kitchen spices and explored their role as a therapeutic agent. Out of these, Piperine, an alkaloid present in pepper and responsible for its pungency, emerged as a strong forbidder of the virus proteins.

Speaking to India Science Wire, Prof. Tripathy said, “Our results look very promising. The study is no doubt, purely computational and requires testing in laboratories for further confirmation. However, it is still an important lead.”

The molecule is now being tested experimentally in a laboratory in collaboration with Dr. Ashok Kumar Patra, Director, Biologics Development, IMGENEX India Pvt. Ltd., an Odisha based Biotech Company. Computer-based studies are often considered as the first step before these get tested in laboratories and undergo subsequent trials if found efficient. If the experiments prove successful, it will be a game-changer particularly since pepper is a natural product, and there may not be side effects that are normally associated with chemical-based drugs.

The study team included Prof. Tripathy's Ph.D. students - Mr. Janmejaya Rout and Mr. Bikash Chandra Swain. They published a report on their work in the Journal of Biomolecular Structure and Dynamics titled "*In silico* investigation of spice molecules as a potent inhibitor of SARS-CoV-2".

The Covid-19 pandemic has already claimed 1 lakh lives in India and over a million worldwide. There are concerted efforts by scientists worldwide to develop therapeutic drugs to cure those who are infected by the SARS-CoV-2 virus. Several vaccine candidates are also under trial in different parts of the world, including in India. (India Science Wire)

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Team of researchers at IIT Dhanbad