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IIT-K unveils new insights into working mechanism of cholesterol lowering drugs

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For the development of new drugs to lower cholesterol with fewer side effects



An important study by researchers at the Indian Institute of Technology (IIT) Kanpur's Department of Biological Sciences and Bioengineering has led to new insights into understanding how cholesterol-lowering drugs like Niacin work at a molecular level.

Utilising the cutting-edge cryogenic-electron microscopy (cryo-EM) technology, the team, led by Prof. Arun K. Shukla, was able to visualise the key target receptor molecule activated by Niacin and other related drugs. The research, which has the potential to lead to the development of new drugs to lower cholesterol with fewer side effects, has been published in the international journal, Nature Communications.

Prof. Arun K. Shukla of the Department of Biological Sciences and Bioengineering, IIT Kanpur said, "Niacin is a commonly prescribed drug to lower bad cholesterol and triglycerides while increasing good cholesterol. However, in many patients, the drug causes side effects such as skin redness and itching, referred to as flushing response. This leads to patients stopping their treatment with adverse effect on their cholesterol levels."

Prof. Shukla added, "The visualization of the receptor molecule GPR109A's interaction with Niacin at the molecular level lays the groundwork for creating new drugs that maintain efficacy while minimising undesirable reactions. The study results will also help in developing related drugs for cholesterol and drugs for other conditions such as multiple sclerosis."