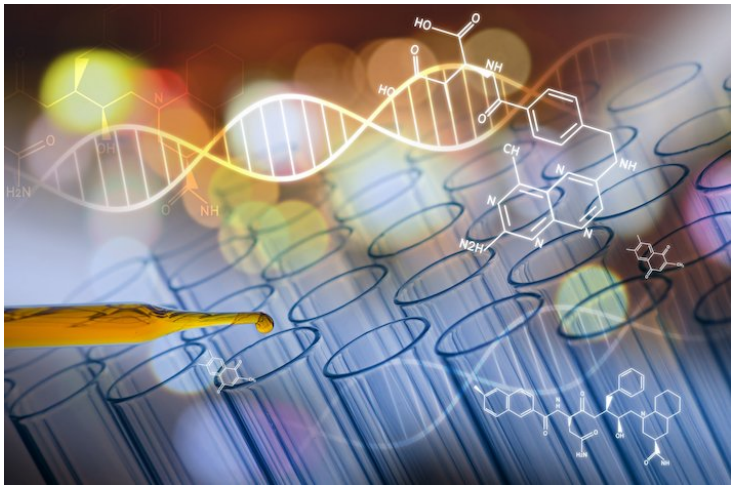
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IISER Bhopal, Nebraska University suggest repurposing Rapamycin to treat COVID-19

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Rapamycin inhibits protein synthesis and can also arrest virus replication



Indian Institute of Science Education and Research (IISER) Bhopal and University of Nebraska Medical Centre, Nebraska, (UNMC), US researchers have identified ‘Rapamycin’ as a drug that can be repurposed to treat COVID-19.

Research was conducted by Dr Amjad Husain, Principal Scientist, and Chief Executive Officer, Innovation and Incubation Center for Entrepreneurship (IICE), IISER Bhopal, and Dr Siddappa N Byrareddy, Associate Professor, Pharmacology, and Vice-Chair, Research at UNMC, US.

In a peer-reviewed paper published recently in the reputed International Elsevier journal, Chemico Biological Interactions, the researchers showed that the biochemical working of this drug molecule points to its promise in the treatment of COVID-19. Since the repurposed drug has gone through the clinical development process for the treatment of other diseases and has already been tested for toxicity, many steps in preclinical and early clinical development can be avoided and the the drug can be directly tested on COVID-19 subjects in phase-II trials.

Elaborating on the importance of this finding, Dr Husain, said, “Using repurposed drug such as Rapamycin that targets mTOR, a central molecule affecting multiple signalling pathways, may yield a significant clinical benefit for the treatment of COVID-19.”

Rapamycin inhibits protein synthesis and can also arrest virus replication, irrespective of the type of mutant. At a biochemical level, apart from inhibiting protein synthesis, Rapamycin has been known to inhibit pro-inflammatory cytokines.

In addition, Rapamycin is known to reduce obesity through various pathways and this can help in mitigating the severity of COVID-19 effects in obese people.

Furthermore, Rapamycin is known to induce autophagy, a cellular recycling process that helps in eliminating the damaged proteins and delaying ageing.

Recently another study got published in the prestigious journal The Lancet-Healthy Longevity that proposed the potential of Rapamycin analogues (rapalogs) to enhance resilience against SARS-CoV-2 infection and reduce the severity of COVID-19.