

Press Release

Shiv Nadar University Develops a Molecule with Potential to Cure COVID-19

- *The molecule has the potential to be developed into a drug that can cure Acute Respiratory Distress Syndrome (ARDS) in COVID-19 patients*
- *Breakthrough study conducted by Professor Subhabrata Sen, Shiv Nadar University (India) in collaboration with Professor Ralf Jockers, an expert molecular biologist from Institut Cochin (INSERM, CNRS, Université de Paris, France)*
- *Animal trials to begin soon as a prelude to human trials*

Noida, 28 April 2020 - Shiv Nadar University, India's leading multidisciplinary and research-based university, today announced a potential breakthrough solution in the global battle against COVID-19. A team of researchers led by Dr Subhabrata Sen from the Department of Chemistry, Shiv Nadar University, India along with his collaborator Professor Ralf Jockers, Institut Cochin (*INSERM, CNRS, Université de Paris, France*), has discovered a set of New Chemical Entities (NCEs) with the ability to cure Acute Respiratory Distress Syndrome (ARDS) or Acute Lung Injury (ALI) induced by COVID-19 (SARS-CoV-2) or other Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS), which are also caused by coronaviruses.

The two-fold strategy devised by the research team involved (a) application of the NCEs to inhibit attachment, entry and infection of the new SARS-CoV-2 through a known target on the virus; and (b) co-administration of a known drug (that modulates a set of hormonal receptors in human) and these NCEs to attenuate ARDS caused by SARS-CoV-2. The researchers believe their therapy would not only prevent COVID-19 from affecting a person's lungs, but will also address lung injuries already inflicted by the virus, in cases the ventilators are either not proving effective or are not available altogether, bringing much relief to COVID-19 patients suffering from ARDS.

Commenting on his research, **Dr Subhabrata Sen, Professor, Department of Chemistry at Shiv Nadar University** said, *"We hope our therapeutic approach will unravel solutions against maladies associated with acute respiratory distress syndrome. Our aim is to conclude the preclinical studies by the end of this year, post which the new compound will potentially be ready for the next stage of development along with human trials."*

Announcing this development, **Dr Rupamanjari Ghosh, Vice-Chancellor, Shiv Nadar University** said, *“COVID-19 has caused catastrophic effects globally – affecting lives and livelihoods. At the Shiv Nadar University, it is our constant endeavour to work towards addressing issues of local and global importance by investing in relevant research. This particular research holds out the promise for a drug that can combat COVID-19, SARS and MERS – this is highly commendable! In this hour of a global crisis, our global team of researchers with unique core competencies has come together in solidarity -- my heartiest congratulations to the group led by Prof. Sen.”*

Professor Ralf Jockers, molecular biologist from Institut Cochin (INSERM, CNRS, Université de Paris, France) said, *“I am excited about the project that we are currently running together with Prof. Sen on novel treatments for Covid-19 and I am hopeful that we can make a significant contribution to solve the challenges of this pandemic.”*

The researchers have filed a provisional patent in India to protect the new chemical entities. The novel molecule in discovery is being moved to the next stage of checking where its efficacy will be tested on animals.

How does the treatment work?

The discovery has come out of months of research conceptualizing small molecule modulators of a set of hormonal receptors in humans and how they are connected with potential receptors in the lungs that act as entry of SARS-CoV-2, SARS and MERS in the human host. Additionally, the researchers looked into the pathophysiological condition of lungs during respiratory failure. This included extensive investigations of lung specimens from patients who were retrospectively found to have COVID-19. Using these data, the researchers designed the project that helps in attenuating acute respiratory distress.

Notes to the Editor:

About Shiv Nadar University, National Capital Region (NCR)

Shiv Nadar University (www.snu.edu.in), a Shiv Nadar Foundation initiative, is a student-centric, multidisciplinary and research-focused University offering a wide range of academic programs at the undergraduate, postgraduate and doctoral level. Shiv Nadar University's multidisciplinary curriculum provides students a strong foundation in disciplines in the humanities and social sciences, natural sciences, technology and engineering studies, communications and management, while enabling them to gain mastery of a subject of their choosing. Taught by world-class faculty, undergraduate education at the University is designed to develop students with the breadth of vision, knowledge, skills and attitudes required to succeed in the careers of the 21st century. Located on a 265-acre campus in India's National Capital Region, Shiv Nadar University is a private philanthropic institution established in 2011 through an act of the State of Uttar Pradesh. Shiv Nadar University has recently been selected as one of the eight private “Institutions of Eminence” by the Government. The University was also awarded the prestigious Atal Incubation Center grant by the NITI Aayog, Government of India, in the very first round in 2017.

For more details, please contact: Sadaf Khan- Sadaf-k@hcl.com / 9620696668