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IIT-G, Hester Biosciences to develop COVID-19 vaccine

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The vaccine will be based on recombinant avian paramyxovirus-based vector platform

Indian Institute of Technology Guwahati (IIT-G) is collaborating with Hester Biosciences Limited, a pharmaceutical company based in Ahmedabad, Gujarat, to work on the vaccine development against COVID-19.

The agreement between the two parties was signed on 15th April 2020.

The vaccine will be based on recombinant avian paramyxovirus-based vector platform. The recombinant avian paramyxovirus-1 will be used to express the immunogenic protein of SARS-CoV-2. The recombinant avian paramyxovirus-1 expressing the SARS-CoV-2 protein could be used as a vaccine candidate for further study.

The avian paramyxovirus-1 has been explored as a vaccine vector for various animals and human pathogens. The avian paramyxovirus-1 has been used to express the immunogenic protein of human pathogens such as HIV, avian influenza virus, human parainfluenza virus, SARS-CoV. Similarly, it has also been explored as a vaccine vector for animal pathogens such as infectious bursal disease virus, infectious laryngotracheitis virus, bovine herpes virus, Nipah virus etc.

The team at IIT Guwahati is headed by Dr. Sachin Kumar, Associate Professor, Department of Biosciences and Bioengineering. The team has generated the recombinant avian paramyxovirus-1 based vaccine flatform for Classical Swine Fever and Japanese encephalitis. The role of the Institute is to produce the recombinant vaccine candidate.

Speaking about the vaccine for COVID-19, Dr. Sachin Kumar said, “It is too early to comment on the efficacy and immunogenicity of the vaccine; however, we will be able to reveal more details about this vaccine after the results of animal studies are obtained.”

Speaking about the collaboration and role of Hester Biosciences Limited, Rajiv Gandhi, CEO and MD, Hester Biosciences Limited, said, “In the current pandemic situation of COVID-19, the world is looking at developing preventive and curative measures to safeguard mankind. IITG & Hester have collaborated to develop and manufacture a recombinant vaccine against COVID-19 disease as a preventive measure. Hester’s involvement would be from master seed development up to release of the commercial vaccine”.

He further added, “Hester has 23 years of experience in vaccine manufacturing on the veterinary side. It manufactures vaccines by using fermentation, tissue culture, continuous cell line and chick embryo origin methods. Hester is also currently working towards developing next generation recombinant poultry vaccines. Being in veterinary vaccine manufacturing, as well as working towards developing recombinant vaccines, Hester has a fairly good understanding and the capability to get into human vaccines, specifically into a vaccine against the COVID-19 disease.”

IIT Guwahati and Hester Biosciences Limited expect the vaccine to be ready by the end of this year to start animal studies. The work is currently in its early stage of development.

Prof. T. G. Sitharam, Director, IIT Guwahati, is hopeful that the outcome of this important collaboration will be a win-win situation for the country and will lead to breakthrough results in prevention of COVID-19 as well as provide leads for vaccine developments against other diseases as well in immediate future.