University of Lethbridge

NEWS RELEASE

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Canada Foundation for Innovation funding will help U of L researchers pursue a drug treatment for COVID-19

Two U of L researchers have received a $200,000 grant from the Exceptional Opportunities Fund of the Canada Foundation for Innovation (CFI) for infrastructure to aid them in their search to find a drug to treat the SARS-CoV-2 virus that's responsible for the COVID pandemic.

The funding is part of nearly $28 million in research infrastructure support announced by Minister of Innovation, Science and Economic Development Navdeep Baines. The funding will support 79 projects across the country and covers the urgent need for equipment for ongoing research related to COVID-19.

"Canadian researchers and scientists are helping to protect our health and safety and are key to finding our way out of the COVID-19 pandemic," said Baines. "With this funding through the Exceptional Opportunities Fund, the Government of Canada is ensuring these talented Canadians have the equipment and tools to support them in their very important work."

The CFI funding bolsters two grants received earlier this year by Drs. Trushar Patel and Borries Demeler (Department of Chemistry & Biochemistry). In July, they received a Natural Sciences and Engineering Research Council of Canada (NSERC) Research Tools and Instruments (RTI) grant of $150,000. A short time later they received a MITACS Accelerate grant, in partnership with Applied Pharmaceutical Innovation (API), for $210,000 to develop a drug treatment for the SARS-CoV-2 virus.

"Despite extreme efforts by health agencies and governments worldwide, effective treatments or vaccines will still take months or years to develop, and there is always the potential that some will fail," says Demeler. "Therefore, it is important that multiple and unique strategies are pursued in parallel. While there has been a major focus on the development of new vaccines, the development of novel therapeutics represents a critical need as well."

Specifically, they are looking to inhibit the ability of the SARS-CoV-2 virus to replicate by targeting the interactions between viral proteins and the human host cell machinery responsible for replicating the virus. Their goal is to create a drug treatment capable of preventing these interactions.

Patel and Demeler plan to establish a suite of equipment that will allow them to conduct structural biophysical studies. The Biomolecular Characterization Suite or BCS is comprised of four pieces of equipment that work together to provide information about biomolecules' size, shape, concentration and how they bind together. With the funding from CFI, the suite is now complete.

"The CFI grant gives us the funding to build that suite and buy a computer cluster to study the structures of human proteins in complex with coronavirus proteins," says Patel. "I'm pretty excited because this infrastructure not only provides us with the capability to work with the coronavirus system, but, in fact, my lab can now prepare viral nucleic acid and host protein complexes based on zika, encephalitis, hepatitis B and C, and hanta viruses. We are not using this to study one virus system, but we can expand it to many other protein nucleic acid studies that are at the heart of viral infections."

U of L Students will also benefit as they receive additional opportunities for further training in biophysics and biochemistry and gain skills they'll need in their future careers.

"The combination of that characterization suite with the computational capability will provide interdisciplinary training to students with both wet lab techniques and the computational modelling packages," says Demeler.

"The success of this important grant application by Dr. Patel and Dr. Demeler reflects their stellar potential as a team, as well as the significance of their research as it relates to solving the problems of the COVID-19 pandemic," says Dr. Robert Wood, vice-president (research.) "Their scientific contributions will serve the greater good of our society."

This news release can be found online at Exceptional Opportunities Fund.

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