

Algae tasked with producing COVID-19 test kits

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Researchers at Western and Suncor are teaming up to use algae as a way to produce serological test kits for COVID-19 – a new process that overcomes shortfalls of existing processes while saving money.

Schulich School of Medicine & Dentistry PhD candidates Daniel Giguere and Sam Slattery are developing [algae](#) as a production factory to make necessary proteins to identify COVID-19 antibodies in someone previously infected with the disease.

"We are using a microalgae that shows a lot of promise for not only producing the protein needed, but producing it with the correct modifications to mimic how it's made in humans" Giguere said of the Mitacs-backed project.

Slattery added, "We are leveraging our in-house expertise and technology to rapidly produce the proteins and validate their effectiveness as a testing reagent."

One of the limiting factors in developing large-scale serological testing is the ability to make significant quantities of the viral proteins on a cost-effective basis.

Current tests rely on proteins made in reagents such as insect or mammalian cells which are expensive and difficult to scale. Algae are cheap to grow and can easily be engineered to produce the viral proteins.

"The synthetic biology group at Western has been developing genetic tools for algae that are proving their utility," explained Dave Edgell, who serves as co-principal investigator with fellow Biochemistry researchers Bogumil Karas and Greg Gloor.

Martin Flatley, Suncor senior staff engineer based in Sarnia, said the funding has enabled the team to significantly speed up the production process, with test kits expected on the market in a couple of months.

"We already had the equipment, expertise and access to the Western bio-safety lab. We thought, 'How can we use what we developed together to

fight COVID-19?" Flatley said. "It's a great feeling knowing that we're doing this for the benefit of all Canadians."

Mitacs is a nonprofit national research organization that, in partnerships with Canadian academia, private industry and government, operates research and training programs in fields related to industrial and social innovation.

The Western-Suncor funding is part of an announcement that Mitacs is partnering with Natural Sciences and Engineering Research Council of Canada (NSERC) to expedite the approval process and leverage funding for COVID-19-related research projects.

Provided by University of Western Ontario

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