Infectious diseases never stop evolving. With strong scientific stewardship, however, we can evolve our vaccines and treatments even faster. That’s an important development happening right now in Canada.

Medicago is a Canadian-based biopharmaceutical company developing novel vaccines to address a broad range of infectious diseases, including influenza, which causes up to 3,500 deaths in Canada annually according to the Public Health Agency of Canada. Most traditional flu vaccines, both seasonal and pandemic, are cultivated in chicken eggs with a cycle of production of approximately six months, but Medicago’s new plant-based technology is increasing both the speed of development and production. “We have a unique manufacturing technology and innovative products, as well,” says Medicago’s Executive Vice President of Scientific and Medical Affairs, Nathalie Landry. “This is totally new. It’s a technology that is very rapid – we can produce vaccines just 19 days after a viral threat has been identified.”

This dramatic improvement in production time could supply large volumes of vaccines before a pandemic is declared or if an unexpected seasonal flu strain takes hold. “We can initiate and deliver production of a new vaccine that corresponds to that strain very quickly,” says Landry. “And it’s not only applicable to viral diseases like influenza. We are looking at using this technology to produce vaccines against bacterial infections and even cancer.”

Innovative science, tangible results

This science can provide a real benefit in the lives of Canadians, while directly addressing the concerns of those who feel that the current flu shot is not as effective as it could be. “The flu vaccine is our best line of defense right now, but there is a lot of room for improvement,” she says. “We have completed 13 clinical trials with influenza vaccines, both pandemic and seasonal. We are in phase three studies and are about to submit our dossier to Health Canada for approval.”

Improved vaccine technology would be welcome no matter where in the world it was developed, but there’s something especially hopeful about seeing this sort of innovation and disruption happen here at home.

“You won’t find a plant-based technology as advanced anywhere else in the world,” says Landry. “It’s important to have success stories like this so that people know we can use scientists educated in Canada to develop innovative products in Canada.”

D.F. McCourt

SPONSORED BY medicago

New and Better Vaccines: Developed in Canada

When Dr. Suni Boraston, Medical Director of Vancouver Coastal Health’s travel clinic, sees patients who are heading to Asia, she always mentions Japanese encephalitis (JE). “It’s not on the radar for the majority of Canadian travellers,” she says — but it should be.

JE is a rare, but potentially fatal disease transmitted by infected mosquitoes. Travellers may acquire it when visiting parts of South East Asia from June to October or staying in countries like Thailand and Indonesia, throughout the year. “If you’re going to those two countries for a month or more, there’s a risk of contracting Japanese encephalitis,” Dr. Boraston says.

Though the chances of getting the disease are very low, JE is not to be taken lightly as there is no cure for this viral illness.

Safeguard your health

Symptoms associated with JE include high fever, chills, neck pain, confusion, and mobility issues, however, some people may become infected without the symptoms. “Protection is important,” says Dr. Boraston. “Take steps to ensure you don’t get bitten by mosquitoes. Think long sleeves and pants and wearing good quality repellants with DEET or with picaridin.” Mosquitoes carrying JE are most active at night, so sleep in accommodations that offer screens on windows and netting around beds.

There is also a vaccine available that’s formulated to help prevent JE that is given via injection, requiring two doses 7 to 28 days apart.

Before you travel, consult a health care professional or travel clinic four to six weeks before departure to learn how to safeguard your health away from home.

Michele Sponagle