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Annika Dalheim, left, and Tamson Moore, work with virus cultures at Stritch School of Medicine at Loyola University Chicago.

Loyola hopes to improve on recent breakthrough in battle against cancer

BY LISA SCHENCKER | Chicago Tribune

Deep within the labyrinth of Loyola University Medical Center, scientists are working to improve upon one of the biggest recent breakthroughs in cancer treatment, hoping to become the first hospital system in the Chicago area to engineer CAR-T cells to treat leukemia and lymphoma.

It's a tack that Maywood-based Loyola hopes will make the treatment safer, more effective and cheaper.

In CAR-T cell therapy, a patient's own immune cells, called T-cells, are collected from his or her blood, genetically engineered in a lab to fight cancer, and then put back into the patient's body. A number of Chicago-area hospitals already offer CAR-T, generally sending patients' cells to pharmaceutical company labs for genetic engineering. But Loyola Medicine and Loyola University Chicago intend to engineer patients' CAR-T cells in-house.

"We shouldn't be sitting on our heels waiting for someone else to come up with a better mousetrap when we have the knowledge and ability to do it ourselves," said Dr. Patrick Stiff, Loyola division

director of hematology-oncology.

The therapy is intended for patients for whom traditional treatments haven't worked. The U.S. Food and Drug Administration approved the first CAR-T treatment, offered by a pharmaceutical company, last year.

A donation of \$250,000 from the Northfield-based Leukemia Research Foundation is helping to get the project off the ground. Loyola hopes for FDA approval to start conducting clinical trials using cells it engineers itself early next year.

"What they're doing is a very innovative project that hasn't been done in Chicago," said Kevin Radelet, executive director of the foundation.

The Loyola effort takes aim at two of the biggest issues with current CAR-T therapies – the safety and the price.

CAR-T therapy, in general, has been shown to help certain patients. In a study published last year in the *New England Journal of Medicine*, 42 percent of patients with certain types of large B cell lymphoma who had failed standard treatments were in complete remission 15 months after finishing CAR-T therapy.

But the treatment is not without risk. Many who undergo it suffer serious side effects such as high fevers and memory loss, and some can have seizures. Patients typically recover from the side effects, but they often have to stay in the hospital or attend rehab because of them, Stiff said.

Loyola hopes to engineer purer CAR-T cells in hopes of decreasing those side effects, Stiff said.

That, in turn, could also potentially lower the price of the treatment. Now, the process of creating CAR-T cells for a patient can cost more than \$400,000. Add the costs of a hospital stay and the price tag can climb to more than \$1 million, though many private insurers cover the treatment.

If patients can avoid the side effects, the cost could decrease dramatically. Stiff envisions a day when CAR-T cell therapy might even become an outpatient procedure. "By reducing the toxicity and potentially increasing the efficacy, our hope is we'll be able to come up with a product that will allow more patients to be treated," Stiff said.

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Trump says China interfering in U.S. midterms

BY DAVID NAKAMURA
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The Washington Post

UNITED NATIONS — President Donald Trump on Wednesday accused China of interfering in the U.S. midterm elections this fall in retaliation for the ongoing trade war between Washington and Beijing.

"Regrettably, we found that China has been attempting to interfere in our upcoming 2018 election, coming up in November, against my administration," Trump said during remarks at a U.N. Security Council meeting on nonproliferation.

"They do not want me or us to win because I am the first president to ever challenge China on trade, and we are winning on trade — we are winning on every level," the president said. "We don't want to them to meddle or interfere in our upcoming election."

Trump presented no evidence for his claims, and his top national security advisers told reporters in August they had not found specific examples of interference ahead of the midterms from countries other than Russia, though they warned it remained a possibility. In his remarks at the Security Council meeting, Trump made no mention of Russian interference.

The Chinese state media purchased a four-page advertising supplement in the *Des Moines Register* in Iowa this week touting China as "an example for the world" and even noting President Xi Jinping had studied in the state when he was a college exchange student. Trump tweeted about the ad on Wednesday, after his speech.

But China, Russia and other countries have been purchasing such advertisements for many years in many newspapers, including *The Washington Post*.

"China has all along followed the principle of non-interference in other country's domestic affairs," Chinese Foreign Minister Wang Yi said at the U.N. meetings, which Xi is not attending. "We did not and will not interfere in any country's domestic affairs. We refuse to accept any unwarranted accusations against China."

Trump's remarks appear consistent with a White House strategy, devised in the immediate aftermath of his Helsinki summit with Russia President Vladimir Putin, to spread blame for election interference beyond Russia to include other countries such as China. At the July summit, Trump appeared to give more credence to Putin's denials of 2016 election interference than to U.S. spy agencies' assessment to the contrary.