

UAlberta Partnership with Alberta Cancer Foundation could be a ‘game-changer’ for cancer patients

Edmonton—A multimillion dollar research partnership announced today at the University of Alberta is giving a “dream team” of researchers the opportunity to potentially transform cancer treatment and better patient outcomes.

The interdisciplinary team, led by Khaled Barakat, research assistant professor in the Faculty of Pharmacy and Pharmaceutical Sciences, includes world-renowned leaders in oncology, virology, immunology, chemistry, dentistry and pharmaceutical sciences, and intends to use small molecules aimed at specific targeted binding sites to jumpstart the body’s T cells to fight off cancer.

These small molecules are being developed and tested through computer modelling, which allows the team to “simulate the T cell surface proteins and understand how they interact in humans.”

“Our team is developing small molecules to replace the antibodies. These small molecules will be designed specifically and rationally to target specific binding sites on T cells and reactivate them and allow them to see and clear tumours,” says Barakat. “These small molecules will have a shorter stay in the blood, allowing the immune system to not be over activated while reducing side effects. In addition, the small molecules will be cheaper to make, reducing costs for patients and health-care systems.”

The use of these small molecules is not specific to any type of cancer. “The concept has been proven by antibodies in many cancer types including advanced melanoma, one of the hardest cancers to treat. Think of our small molecules as a ‘magic drug’ that simply can be used against many types of cancer,” says Barakat.

Barakat and his team’s research would not be possible without the investment partnership of the Alberta Cancer Foundation and the Li Ka Shing Applied Virology Institute.

The Alberta Cancer Foundation is investing \$2.4 million dollars in this research program. “Our partnership with the University of Alberta and Li Ka Shing Institute will allow researchers to look at novel ways of treating cancer, where they target the immune system rather than the tumour itself,” says Myka Osinchuk, CEO of the Alberta Cancer Foundation. “Immunotherapy has been described as a breakthrough for this disease so we are pleased to make this investment on behalf of our donors and are excited about its potential on Albertans facing cancer.”

Based on this partnership, the Li Ka Shing Institute of Applied Virology is also contributing \$3 million dollars to further this research. “The Immune Checkpoint program was initiated within the University of Alberta’s Li Ka Shing Applied Virology Institute (LKSAVI) in 2014 with Dr. Khaled Barakat as the principal investigator,” says Michael Houghton, professor and director of LKSAVI. “Dr. Lorne Tyrrell and myself are very pleased that the Alberta Cancer Foundation has also seen the great potential of this program and has decided to become a co-investor with the LKSAVI to deliver these much needed medicines to the many cancer and chronic viral illness sufferers in Alberta, Canada and globally.”

The team plans to have a “lead structure”, an almost-ready drug that only needs small tweaking and optimization, in place by the end of the second year of the project. At that point, they will be seeking a pharmaceutical partner to develop this lead structure into a drug for human trials by 2020.

For more information on the research team, please see the attached backgrounder.

-30-

For more information, contact:
Phoebe Dey,
Director, Communications
Alberta Cancer Foundation
(780)643-4510, Phoebe.Dey@albertacancer.ca