



Canadian
Cancer
Society



Brian Wilhelm, Ph.D.

Pediatric cancer research grant recipient



Brian Wilhelm, Ph.D. is Principal Investigator at the Research Institute for Immunology and Cancer (IRIC) High-Throughput Genomics Research Unit and is part of the scientific direction of the Genomics Core Facility. Brian Wilhelm is also Associate Professor at the Faculty of Medicine at Université de Montréal.

Brian Wilhelm obtained his Ph.D. in Medical Genetics from UBC in the Terry Fox Laboratory in Vancouver, in 2003. He then carried out his postdoctoral training at the Wellcome Trust Sanger Institute (Cambridge, U.K.) in the lab of Dr. Jurg Bahler, and then in the lab of Dr. Guy Sauvageau at IRIC.

In 2010, Brian Wilhelm launched his own lab, the Institute's High-Throughput Genomics Research Unit, and began as a Professor in the Department of Medicine of the Université de Montréal.

He is the recipient of a \$2,301,0365 research grant as part of a partnership between The Canadian Cancer Society (CCS), CQDM, the Cole Foundation and Oncopole, pole cancer du FRQS.

RESEARCH PROJECT ON PEDIATRIC CANCERS IN QUEBEC:

Developing new, targeted treatments for acute myeloid leukemia (AML) and acute megakaryoblastic leukemia (AMKL) as well as nanotechnology to detect these cancers and monitor treatment.

Despite a net improvement in the treatment of several pediatric cancers, high-risk subtypes, such as acute myeloid leukemia (AML) and acute megakaryoblastic leukemia (AMKL) continue to have the worst prognoses with only a 40% to 60% five-year survival rate. So, there is a critical need for new targeted therapies, which will probably have to combine several drugs used in immunotherapy to eradicate tumor cells. Finally, new diagnostic technologies that are faster, cheaper and more sensitive are needed to better monitor patients' response to treatment.

For this, Brian Wilhelm's research team, in partnership with MediMabs, is working to characterize several small antileukemic molecules to identify their targets and mechanism of action, validate their *in vivo* activity and create personalized antibodies. These will be used against leukemia biomarkers to directly target leukemic cells and develop a nanoscale electronic biosensor for leukemia screening.

In the long term, this grant will enable the development of a full-fledged biosensor prototype with a broad range of biomedical applications. This will give our business partners new products and services to offer.

This research project on the use of nanotechnology to detect acute myeloid leukemia (AML) and acute megakaryoblastic leukemia (AMKL) would not have been possible without my invaluable collaborators whom I would like to thank wholeheartedly: main partner, MediMabs; and my associates Delphine Bouilly (Université de Montréal); Frédéric Barabé (CHU de Québec - Université Laval); Mark Peterson (Cyclenium Pharma); Martin Wong (MediMabs); Sonia Cellot (CHU Sainte-Justine); Fondation Charles-Bruneau; IRIC; IRICoR and Pfizer Canada.

— **Dr Brian Wilhelm** (Institute for Research in Immunology and Cancer of the Université de Montréal)