

Richard Marcotte, Ph.D.

Pediatric cancer research grant recipient



Richard Marcotte, Ph. D., is an adjunct professor at the University of Montreal's Faculty of medicine and a Senior Research Officer at the National Research Council of Canada (NRC) since 2015.

He has a long-standing research interest in developing and using unbiased high-throughput screening approaches to uncover the molecular mechanisms regulating cancer initiation and progression as well as the immunobiology of cancer.

He completed his Ph.D. in the Department of Experimental Medicine at McGill University in 2003.

He is a grant recipient of \$1,660,017 as part of a partnership between the Canadian Cancer Society (CCS), CQDM, and the Cole Foundation.

RESEARCH PROJECT ON PEDIATRIC CANCERS IN QUEBEC: Developing a new therapeutic product to improve treatment outcomes for children living with acute lymphoblastic leukemia.

Childhood acute lymphoblastic leukemia (ALL) is a cancer of the lymphocytes, immune cells that normally fight bacterial and viral infections. Although this cancer is considered cured in more than 85% of cases, children whose cancer is recurrent or resistant to treatment typically have a poor prognosis.

Richard Marcotte's team is working to identify new approaches targeting ferroptosis (a new type of cell death that can be applied to cancer medical treatments) to make it a viable therapeutic option. Its induction in ALL treatment promises significant advantages.

In this project, the team plans to use Cas9, molecular scissors (a technique used to cut DNA at a specific spot), on a gene that prevents ferroptosis induction so that it can be eliminated.

Through the completion of this project, the team, in partnership with Jenthera Therapeutics Inc., hopes to validate a Cas9-CD22 fusion protein able to induce ferroptosis as a potential treatment option for recurrent or resistant ALL.

"This research project, which aims to develop a new therapeutic product to improve treatment outcomes for children battling acute lymphoblastic leukemia, would not have been possible without my invaluable collaborators whom I would like to thank wholeheartedly: my main partner, Jenthera Therapeutics Inc., and my associates Elie Haddad (CHU Sainte-Justine); Simon Drouin, Martin Loignon, Jamshid Tanha, Alexandre Serrano and Sonia Lamontagne (CNRC); and Phil Roche and Laurent Ziri (Jenthera)."

— **Richard Marcotte, Ph.D.** (NRC and Université de Montréal)