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*If Veterans don't help Veterans, who will?*

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## Researchers uncover new molecular causes of brain cancer and leukemia

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A joint research published today in Nature Communications has shown new molecular causes of brain cancer and leukemia. This research provided insight into the effect of mutations of enzymes involved in the development of these cancers and potentially consider a personalized treatment to improve the therapeutic response.

Brain cancer and leukemia are two potentially fatal diseases that affect thousands of Canadians each year. But a joint study conducted by researchers Frederick Antoine Mallette, of the Maisonneuve-Rosemont Hospital Research Centre and the University of Montreal, and Marc-étienne Huot, of Laval University, and published in the prestigious scientific journal Nature Communications has uncovered new molecular causes of brain cancer and leukemia.

We already knew the existence of a mutation phenomenon involving certain metabolic enzymes called isocitrate dehydrogenases 1 and 2 (IDH1/2) in various forms of brain cancer, including gliomas and glioblastomas, and in acute myeloid leukemia. Although the mutated forms of IDH1/2 appear to contribute to cancer formation, until now we had only limited understanding of the ways in which these metabolic defects caused cancer. Research conducted by Mélissa Carbonneau, a master's student in Professor Mallette's laboratory, has helped to better understand the effect of IDH1/2 mutations in cancer by demonstrating their role in activating the pathways involved in cell proliferation and survival.

"With the identification of the molecular modes of action that contribute to cancer in patients carrying IDH1/2 mutations, it is now possible to consider personalized treatment to potentially improve therapeutic response," said Dr. Mallette.

Some statistics

It is estimated that in 2015, 3,000 Canadians were diagnosed with brain and spinal cord cancer, and 6,200 Canadians were diagnosed with leukemia.

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Source:

University of Montreal

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