

# New gateway to treat leukemia and other cancers

March 25 2010

---

Canadian researchers have discovered a previously hidden channel to attack leukemia and other cancer cells, according to a new study published in the *Journal of Biological Chemistry*. The findings from the Université de Montréal, Maisonneuve-Rosemont Hospital and Université Laval may change the way doctors treat cancer patients.

"We found a gateway, which is present in all humans, that allows anti-cancer agents such as Bleomycin to enter the body so they may reach and attack leukemia cells," says senior author Dindial Ramotar, a professor at the Université de Montréal Faculty of Medicine and a scientist at the affiliated Maisonneuve-Rosemont Hospital.

Dr. Ramotar began testing his theory a full decade ago using baker's yeast, which is remarkably similar to human cells. "Our discovery went from that model system to human cells and will soon reach the bedside through translational therapy," he explains. "We are on the brink of testing patients."

The new gateway (SLC22A16) may be a lifesaver for patients with acute myeloid [leukemia](#) (AML), a cancer that affects white blood cells. AML patients are extremely difficult to treat, since most are unresponsive to anticancer remedies. "We can now streamline anti-cancer agents to treat AML," says Dr. Ramotar. "For example, we found the anti-cancer agent Bleomycin has positive results on lymphoma cells derived from patients and depends on the presence of the gateway. That's especially good news, since Bleomycin does not act as an immunosuppressant."

The newly identified gateway, Dr. Ramotar cautions, is only "present in some cell types such as those derived from bone marrow." The channel also does not function in colon and breast cancer making it difficult to treat these patients with Bleomycin, he adds. "We must now examine ways to stimulate the gateway to treat a broad range of cancers using Bleomycin and other drugs."

**More information:** The paper, "The Human Carnitine Transporter SLC22A16 Mediates High Affinity Uptake of the Anticancer Polyamine Analogue Bleomycin-A5," published in the Journal of Biological Chemistry, was authored by Mustapha Aouida and Dindial Ramotar of the Université de Montréal in collaboration with Richard Poulin of the Université Laval.

Provided by University of Montreal

Citation: New gateway to treat leukemia and other cancers (2010, March 25) retrieved 26 April 2024 from <https://phys.org/news/2010-03-gateway-leukemia-cancers.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.