



Research project summary

Deciphering the molecular mechanism of acquired resistance in leukemia

- Principal Investigator: Marjorie Brand
- Awarded \$925,650 from the Canadian Institutes of Health Research (CIHR) in January 2018

Recent findings in the area of leukemia research have led to the identification of new therapeutic approaches that are more efficient and less toxic than classical chemotherapies because they target a precise molecular event at the origin of cancer development. However, even though a large number of leukemia patients respond positively to targeted treatments at first, a significant portion of them eventually relapse. Once these patients become resistant to treatment, very few options are available to them. It is generally believed that resistance to drug treatment in leukemia patients is acquired through a process that entails the progressive modification of leukemic cells such that they acquire novel properties allowing them to escape drug treatment. However, the mechanism(s) through which leukemic cells acquire resistance while being subjected to drug treatment is unclear. Understanding this mechanism is a necessary step towards the development of therapies that are truly curative. Our lab has recently obtained new and exciting results suggesting that a specific protein (named OGT) may be at the heart of the process of acquired resistance in leukemia. In this application, we propose to fully characterize the mechanism through which OGT mediates resistance. For this purpose, we will use a variety of molecular and cellular techniques as well as unique in vivo models of disease. Successful completion of this proposal is expected to identify new therapeutic targets that could be used to prevent and/or treat relapse in leukemia patients.

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