

May 13, 2023

Cure RTD Awards \$25,000 Grant to Dr. Anna Jezierski at the National Research Council of Canada

The Cure RTD Foundation has awarded a \$25,000 grant to Dr. Anna Jezierski for the project “Investigating the role of the blood brain barrier in Riboflavin transport in patients with RTD.” Dr. Anna Jezierski is the Research Officer at the Department of Translational Biosciences in the Human Health Therapeutics Research Center at the National Research Council of Canada.



There is now overwhelming clinical evidence that daily high-dose riboflavin supplementation can ameliorate (“make better”) the progression of the disease in most patients with Riboflavin Transporter Deficiency (RTD), particularly when initiated soon after the onset of symptoms. A potential barrier to riboflavin transport into the brain of a person with RTD is the blood brain barrier (BBB).

Dr. Anna Jezierski

The BBB is formed by specialized brain endothelial cells, which regulate the supply of nutrients to the brain through a panel of selective transporters. A number of nutrient transport systems have been identified in the BBB that are key for maintaining brain homeostasis, including the SLC52A family of transporters. Mutations in these SLC52A genes are now known to be the cause of RTD. However how mutations in these SLC52A genes affect the BBB and riboflavin transport into the brain remains unknown.

Since riboflavin transport into the brain is fundamental for neuronal health, Dr. Anna Jezierski study will investigate the role of the BBB in riboflavin transport and bioavailability using a renewable, scalable and highly reproducible human blood-brain barrier model, composed of brain endothelial cells, generated from human induced pluripotent stem cells from patients with RTD. This study will provide novel insights into riboflavin transport across the BBB ultimately better informing riboflavin treatment protocol adjustment.

Meet Dr. Anna Jezierski

Dr. Anna Jezierski received her PhD in Cellular and Molecular Medicine from the University of Ottawa. Her research focus is on leveraging human induced pluripotent stem cells (iPSCs) to develop more predictive and translational models of the central nervous system (CNS) and the blood brain barrier (BBB) combining stem cells, microfluidic chips and 3D tissue bioprinting technologies. These models are routinely utilized to study the BBB permeability of CNS targeting biotherapeutics, neurotropic viruses and immunotherapies.

Cure RTD Research Funding

This grant to Dr. Anna Jezierski is part of Cure RTD’s Basic Research and Drug Discovery programs that we’re currently announcing for our 2023-2024 grant cycle.