Multi-Organ Transplant Program
Toronto General Hospital
585 University Avenue
Toronto, Ontario
CANADA M5G 2N2

Re: Brunna Xavier Martins

Dear IPTA Selection Committee,

I am writing this letter in very strong support of Dr. Brunna Martins' application for an IPTA Young Investigator Scientific Award. Brunna is currently a post-doctoral fellow in my lab and a remarkable young scientist in the making. I met Brunna through my scientific mentor, Dr. Sergio Grinstein, as he has professional connections to scientists throughout South America. At that time, Brunna was a highly regarded post-doctoral fellow in the lab of Professor Arnoldo Façanha. Prior, she completed her PhD in Bioscience and Biotechnology at the State University of Northern Rio de Janeiro (UNEF) in 2017 and then the post-doctoral fellowship with Professor Façanha at UNEF in 2021. Brunna has excellent training in Cell Biology, in particular in membrane biology, with an expertise in understanding the disruptions of membrane potentials. I was fortunate to recruit her to my lab in the Cell Biology Program at the Hospital for Sick Children Research Institute, where she started in October of 2021. She is planning to complete a 3–4-year post-doctoral fellowship in my lab before returning to Brazil.

At SickKids, I am a member of the Division of General Surgery, where I serve as the lead for pediatric liver transplantation and HPB surgery. I am also a staff surgeon in the Ajmera Multi-Organ Transplant Program at Toronto General Hospital. On the research side, I am an Associate Scientist in the Cell Biology Program at the SickKids Research Institute. My lab currently has two post-doctoral fellows and two technicians, with a rotating student or two at any given time. Our lab, which has interests and collaborations in both the Immunology and Cell Biology fields, is focused on determining the contributions of lytic cell death in hepatic ischemia-reperfusion injury. In particular, we are investigating the role of inflammatory cell death and active plasma membrane rupture in driving the acute phases of hepatic ischemia reperfusion injury and the subsequent immune remodeling. For these purposes, we utilize *in vivo* murine models as well as well as *in vitro* models with murine and human tissue.

Brunna has already made some very interesting observations about the process of inflammatory cell death in hepatocytes, a poorly understood subject. In the lab, she has the opportunity to utilize both *in vitro* and *in vivo* techniques to understand how NINJ1, an essential mediator of plasma lysis, contributes to the death and injury of hepatocytes, Kupffer cells and other non-parenchymal cells in the liver. She plans to further study how NINJ1 contributes to plasma membrane instability and eventual disruption. This line of research is highly novel and has the potential to significantly impact how we store organs and decrease their injury following solid organ transplantation. I have high expectations for Brunna and I have no doubt she will make important contributions to the field in the years to come.

Sincerely,

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