



Quebec City, May 4th, 2021

Subject: Thanks for the bursary

Dear Donor,

It is with great pleasure that I am writing this letter to express my gratitude for your donation and your support to my research project titled "Target validation of the potassium chloride cotransporter KCC2 for the treatment of Alzheimer's disease".

Je tiens à vous exprimer ma gratitude et mes remerciements sincères pour la bourse que vous m'avez généreusement offerte. Je suis honoré et je suis reconnaissant de la confiance que vous avez en moi et mon projet de recherche.

I was truly enthusiastic to hear the news that I was awarded with this prestigious research grant especially since it is the second time you and the selection committee decides to support one of my research projects during my PhD studies. It was back in 2016, when I was just starting my PhD at Université Laval, that I was awarded with the Bourse Norampac sur la maladie d'Alzheimer et les maladies apparentées. This first award inspired me and helped me to gain all the confidence I needed to start a new chapter in my life but also to commit my research on understanding the early alterations occurring in the brain physiology of patients, before the onset of any symptoms.

Recevoir la bourse Fondation de la Famille Lemaire cette année m'a donné l'espoir et le soutien pour terminer mon parcours ici au Québec. L'épidémie de Covid-19 et le fardeau psychologique et émotionnel associé à cette pandémie ont affecté ma motivation à poursuivre mes études. L'incertitude et le stress que vivent les étudiants étrangers sont intolérables. Le dévouement à mes recherches m'a aidé à affronter toutes ces épreuves jusqu'à présent et maintenant la reconnaissance de mon travail et votre généreux soutien m'encouragent et me remontent le moral. J'aimerais que plus de familles, de fondations et d'organisations donnent de l'argent pour soutenir la recherche et les étudiants étrangers comme vous le faites.

In addition to expressing my sincere gratitude for your support, I would like to highlight the significance of your donation to a really promising project such as the one I am currently working on. Alzheimer's disease (AD) is associated with an abnormal brain activity common to other neurological disorders such as epilepsy, autism, and frontotemporal dementia. In early stages of the disease an imbalance between neuronal excitation and inhibition occurs arising cortical and hippocampal hyperactivity. Apart from this neural hyperactivity, several lines of evidence suggest a disruption of the oscillatory rhythms in the brain of AD patients which could underlie the memory and cognitive impairments associated with AD. My project aims to validate the hypothesis that hypofunction of the potassium-chloride co-transporter KCC2 underlies this abnormal brain activity during preclinical and/or clinical stages of the disease. In addition, I am currently testing the efficacy of KCC2 enhancers developed in Yves De Koninck laboratory in preventing the onset of AD-related symptoms, delay the symptoms progression and/or restore normal brain function after symptom onset.

Thus, this project will accelerate the development of AD therapeutics by linking KCC2 function and brain network activity during disease progression in animal models reproducing several AD-like symptoms, translating these findings into potential treatment. The KCC2 enhancers may reveal an entirely new target to mitigate AD-associated dysfunction and symptoms.

Thank you sincerely again. I am more than grateful for your donation. It was a great honor writing this letter and I am looking forward meeting you one day to express my gratitude in person and share some exciting findings from my various research projects.

Veillez accepter, Cher Donateur, l'expression de mes salutations cordiales.

Best regards,



Iason Keramidis

Doctorat en neurobiologie