

Candidature bourse ciblée pour un meeting

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CV au format PDF

https://cfatg.org/wp-content/uploads/2023/09/CV_2023_Quentin_Frenger.pdf

Résumé des travaux présentés lors du meeting

Antigen presentation is a key mechanism in vertebrate immunity. Professional antigen presenting cells, including dendritic cells, macrophages and B cells are responsible for presentation of exogenous antigens after internalization, processing and loading of peptides on major histocompatibility class II complexes. Autophagy related (ATG) proteins members of the LC3-conjugation machinery perform macroautophagy and participate in LC3-associated phagocytosis, two degradative pathways generating MHC-II peptides. Our lab showed that deletion of ATG5 in B cells disrupts B cell polarization during the formation of the immune synapse and the trafficking of the internalized B cell receptor-antigen complex. This negatively impacts B cells ability to present surface-tethered antigens. Using CRISPR/Cas9 mediated knock-out in human B cell lines, we confirmed the implication of ATG5 and discovered the involvement of ATG16L1 for B cell polarization after B cell receptor engagement by surface-tethered antigens. Using other genetically modified human B cell lines and proteomic analysis, we unveiled novel ATG16L1 partners enriched after B cell receptor engagement. Among them, synaptosome associated protein 23 (SNAP23) is an interesting candidate because it is involved in lysosome exocytosis, a key mechanism in optimizing antigen extraction by B cells. SNAP23 is also involved in the maturation of LC3-coated phagosomes. We are now monitoring SNAP23 localization and behavior before and after B cell receptor engagement. Using antigen presentation assays, we aim to decipher the relevancy of ATG16L1 and its identified partners in B-cell mediated antigen presentation.

Lettre de motivation

Madam, Sir,

I am honored to submit my application for the doctoral fellowship grant to attend the 11th Scientific Days on Autophagy and to present my work.

I am a 4th year Ph.D. student working on the role of autophagy proteins in the endocytosis of antigen presenting cells under the supervision of Dr. Frederic GROS within Pr. SOULAS-SPRAUEL's group in the INSERM UMR_S 1109 research unit localized in Strasbourg.

Back in 2019, I attended the 9th CFTAG meeting in Strasbourg, and this was a rewarding experience where I got to know the welcoming autophagy community. In 2022, I was honored to receive a travel grant awarded by the CFATG to attend the 10th CFATG meeting in Besancon. Presenting my first results during this 10th Scientific Days on Autophagy was a truly exceptional

opportunity where I was awarded the best flash talk prize. During this 11th congress, I would like to do an oral presentation showing novel autophagy proteins partners that we identified in the context of B cell receptor endocytosis and trafficking. Additionally, I will present perspectives on how we plan to investigate implications of identified candidates in antigen presentation.

I am highly motivated to present and to discuss our results with experienced researchers and world-leading guests in the autophagy field. As a Ph.D. student, this exercise is not only very important but also personally enriching. My participation to the 10th Scientific Days on Autophagy was a special opportunity to meet peers and I would be honored to meet them again this year. I wish you a pleasant reading, and I remain at your disposal for further information.

Best regards,
Quentin Frenger.

Présentation orale

Oui

Présentation par affiche

Oui