

[Accueil](#) > [Nous rejoindre](#) > [Offres de stages](#)

Correlative microscopy of astrocytic proteins

Objectifs

Localise proteins involved in calcium signaling by optical and electron microscopy and obtain the overlay of the two dataset.

Résumé

The key language of astrocyte communication lays on variations of the intracellular Ca²⁺ concentration but a large part of this overall Ca²⁺ activity is compartmented inside the 3D astrocyte. Indeed, signaling mainly occurs in micro-domains that could represent elementary communication units of the astrocyte at the interface with synapses and blood vessels (Bindocci et al., Science, 2017). What defines these "local domain" properties is unknown. So far, our preliminary results indicate that the endoplasmic reticulum could be directly involved either in the regulation of calcium signaling and/or in the initiation of the signal upon synaptic transmission. Therefore, to decipher the morphological and molecular properties that underlie this calcium signal compartmentation in relationship with the neighboring synapse, we will immuno localize protein by optical microscopy and then image the same cell by 2D (and maybe 3D) electron microscopy. The aim of the project is to overlay the two data set.

Méthodes

Optical microscopy, electron microscopy, immunogold labelling

Références

Spehner D, Steyer AM, Bertinetti L, Orlov I, Benoit L, Pernet-Gallay K, Schertel A, Schultz P. *Cryo-FIB-SEM as a promising tool for localizing proteins in 3D. J Struct Biol.* 2020 May 5:107528.

Radu AG, Torch S, Fauvelle F, Pernet-Gallay K, Lucas A, Blervaque R, Delmas V, Schlattner U, Lafanechère L, Hainaut P, Tricaud N, Pingault V, Bondurand N, Bardeesy N, Larue L, Thibert C, Billaud M. *LKB1 specifies neural crest cell fates through pyruvate-alanine cycling. Sci Adv.* 2019 Jul 17;5(7):eaau5106.

Pernet-Gallay K, Jouneau PH, Bertrand A, Delaroché J, Farion R, Rémy C, Barbier EL. *Vascular permeability in the RG2 glioma model can be mediated by macropinocytosis and be independent of the opening of the tight junction. J Cereb Blood Flow Metab.* 2016 Jun 15.

Domaines d'expertise requis

Cell Biology and/or Neurosciences

Contacts

K . P e r n e t : G a l l a y , I R I n s e r m
Email : Karin.pernet-gallay@univ-grenoble-alpes.fr
Tél: 04 56 52 05 20

Téléchargement(s)

[GIN_offre-stage-M2_2020-2021_KPernetGallay_20200609.pdf](#) (PDF, 417 Ko)

Venir au GIN

[>> Consulter le plan d'accès](#)

Contacts

Pour les **stages (master, licence, 3ème)**, envoyer directement un email au responsable de l'équipe que vous avez identifiée.

Pour une **candidature spontanée pour un emploi et uniquement pour cela**, envoyez un email à gincomm[at]univ-grenoble-alpes.fr ou utilisez le [formulaire de contact](#).