

Society of Developmental Biologists Singapore

SDBS Seminar Series - Seminar (Virtual)



Biography:

Alexandre Baffet is a French cell biologist investigating brain development and the cytoskeleton. He studied at the university of Rennes 1, before joining the University Pierre & Marie Curie in Paris for his PhD, that he completed in the laboratory of Antoine Guichet (Institut Jacques Monod). There, he studied the interplay between cell polarity and the organization of the cytoskeleton in *Drosophila*. In 2011, he moved to the lab of Richard Vallee (Columbia University, New York), where he identified the mechanism for nuclear migration in rodent neuronal progenitor cells. In 2016, he joined INSERM and the Institut Curie to start his own group. His lab focuses on two main aspects, polarized trafficking and human neurogenesis, using both mouse and human cerebral organoids as models, with a strong emphasis on the development of live imaging methods.

Speaker:

Dr. Alexandre BAFFET

INSERM investigator,
Group leader at Institut
Curie (Department of
Cell Biology), France

Date: 2 Dec 2021
(Thursday)

Time: 4:00 - 5:00pm SGT
(10:00-11:00am GMT+1)

Host: Prof. Wang Hongyan
(Duke-NUS Medical School)

Microtubule-dependent polarized trafficking in cortical neural stem cells

Abstract:

Neurons of the neocortex are generated by stem cells called radial glial cells. These polarized cells extend a short apical process towards the ventricular surface and a long basal fiber that acts as a scaffold for neuronal migration. How the microtubule cytoskeleton is organized in these cells to support long-range transport is unknown. Using subcellular live imaging within brain tissue, we show that microtubules in the apical process uniformly emanate from the pericentrosomal region, while microtubules in the basal fiber display a mixed polarity, reminiscent of the mammalian dendrite (Coquand et al., JCB, 2021). We identify acentrosomal microtubule organizing centers localized in varicosities of the basal fiber. CAMSAP family members accumulate in these varicosities where they control microtubule growth. Double knockdown of CAMSAP1 & 2 leads to a destabilization of the entire basal process.

In the second part of the presentation, I will present data identifying a RAB6-dynein-LIS1 complex for Golgi to apical surface transport of the polarity determinant Crumbs, and highlight the role of this pathway in the maintenance of neuroepithelial integrity (Brault et al., BioRxiv, 2021).

Zoom Meeting ID:

<https://nus-sg.zoom.us/my/sdbssseminar>

Meeting ID: 929 765 4321

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