Institute of Molecular and Cell Biology
IMCB

SEMINAR ANNOUNCEMENT

We would like to invite you to attend this seminar hosted by the Institute of Molecular and Cell Biology:

Date: **1 July 2022**
Time: **11.00AM – 12.00NN**
Venue: **IMCB Boardroom (Hybrid)**

Join Zoom Meeting
https://zoom.us/j/98453449499?pwd=N3o5bmtkSkhoVHVrN0pCdEswaHYvQT09

Meeting ID: 984 5344 9499
Passcode: 841120

Role of Tunneling Nanotubes in the spreading of neurodegenerative diseases, and more



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Abstract
Tunneling nanotubes (TNTs) are actin-based cellular connections that allow the transport of different cellular components between cells. They were described for the first time in a cell line in culture 15 years ago, and now they are recognized as an important mechanism of cell-to-cell communication. Since their discovery, the structure and function of TNTs have been characterized in several cell types, including neurons and astrocytes. Under homeostatic conditions, TNTs transport different vesicular cargoes and entire organelles like mitochondria and lysosomes. However, they can be hijacked by different pathogens and amyloid proteins involved in neurodegenerative diseases, such as Parkinson´s (PD) Alzheimer's (AD). We have previously demonstrated that both alpha-synuclein and Tau aggregates, respectively the hallmark of PD and AD, can be spread from one cell to another via TNTs. We have proposed that this is a key mechanism for the progression of the disease and for the spreading of the pathology to the whole brain. In my talk I will address the similarities and differences between TNT-mediated diffusion of these two types of aggregates, in order to identify common pathways leading to neurodegeneration. I will also assess the likelihood of TNT in vivo, as well touch on different aspects related to TNT structure and pathways involved in their formation.

Biography
Professor Chiara Zurzolo, MD, PhD, is head of the Membrane Trafficking and Pathogenesis Unit and co-director of the Brain connectivity and neurodegenerative diseases research program at the Institut Pasteur (Paris). She received her MD and then PhD in molecular and cell biology from the University of Naples Federico II. She then obtained a postdoctoral fellowship to spend four years at Cornell Medical School, New York where she uncovered some of the mechanisms of apical protein trafficking in polarized epithelial cells. In 1995, she returned to Naples to establish her laboratory at the Faculty of Medicine and Surgery at Naples University Federico II as a professor of cell biology. In 2003, she became director of research at the Institut Pasteur in Paris where she studies the mechanisms of protein trafficking in health and diseases with a focus on neurodegenerative diseases and brain tumors. In 2015, she was elected member of the European Molecular Biology Organization (EMBO) and promoted Professor at Institut Pasteur. In 2019, she was a visiting scholar at Harvard University, sponsored by the Radcliffe Fellowship. Her international reputation leads her to conferences and seminars all over the world. She takes advantage of this fame to teach and to organize international conferences and courses.

https://research.pasteur.fr/en/member/chiara-zurzolo/
https://www.radcliffe.harvard.edu/people/chiara-zurzolo

ALL ARE WELCOME *(No registration required)*

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Thank you.