



DIPARTIMENTO DI FARMACIA E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno **venerdì 19 Luglio 2019**
alle ore **14:30**
presso Aula A (Ex Farmacologia), via Irnerio 48, Bologna

Giulia Frisco

Dipartimento di Farmacia e Biotecnologie, Alma Mater Studiorum Università
di Bologna
(referente Prof.ssa Natalia Calonghi)

terrà un seminario dal titolo:

ANALYSIS OF THE EXOCYTOSIS OF APICAL CARGOES IN POLARIZED EPITHELIAL CELLS

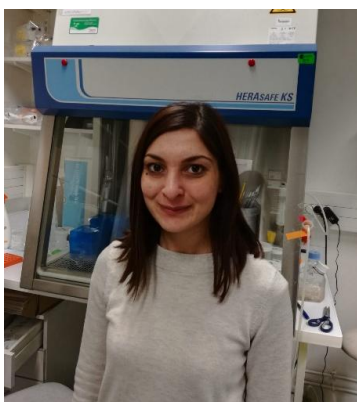
Colleghi e studenti sono cordialmente invitati

Commissione Ricerca e Attività Correlate - FaBiT

ABSTRACT

In polarized epithelial cells, the spatio-temporal organization of apically targeted glycosylphosphatidylinositol-anchored proteins (GPI-APs) is regulated by their sorting mechanism in the Golgi apparatus. At the apical plasma membrane, GPI-APs are organized in cholesterol-dependent heteroclusters, which form only in fully polarized cells following homoclustering of GPI-APs in the Golgi apparatus. Cholesterol regulates the formation of GPI-AP Golgi homoclusters, but is not sufficient to drive apical sorting. Golgi and plasma membrane GPI-AP organization are drastically perturbed upon calcium depletion, and the amount of calcium in the Golgi cisternae is critical for the formation of GPI-AP homoclusters in this organelle. The amount of calcium in the Golgi apparatus, regulated by the Secretory Pathway Calcium ATPase 1 (SPCA1) at the trans-Golgi network (TGN), directly modulates GPI-AP clustering and, in turn, both their apical sorting and plasma membrane organization. Recently it has been shown that SPCA1, Sphingomyelin Synthase 1 (SMS 1) and sphingolipids populate the TGN and that SPCA1 Ca²⁺ pumping activity is promoted by maintenance of a physiologic level of SM in the TGN. We reported that the inhibition of SMS affects GPI-APs trafficking leading to an accumulation of cargoes at the Golgi complex level.

BIOGRAPHICAL SKETCH



Giulia Frisco graduated in Biotechnological and Pharmaceutical Science at University of Bologna in 2016, discussing a thesis entitled “Vaginal Lactobacilli's effects on *Chlamydia trachomatis* Elementary Body Infectivity”. Currently, she is a PhD student in Biochemical and Biotechnological Sciences in Calonghi's lab at University of Bologna, and is working on a project that aims to investigate the role of lactobacilli in the prevention of *Candida albicans* and *Chlamydia trachomatis* EBs infectivity. She joined the Membrane Trafficking and Pathogenesis Laboratory led by Chiara Zurzolo at Institut Pasteur in Paris, for 9 months of internship as Visiting

Researcher, to work on the analysis of the exocytosis of apical GPI-APs in polarized epithelial cells with Stéphanie Lebreton.