



Consiglio Nazionale delle Ricerche

Istituto di Biologia Cellulare e Neurobiologia

Institute of Cell Biology and Neurobiology

CNR-IBCN

AVVISO DI SEMINARIO

SEMINAR ANNOUNCEMENT

Molecular mechanisms driving the formation and membrane fission of secretory vesicles

Dr. Daniela Corda

Director – CNR Institute of Protein Biochemistry (IBP)

30 May 2018, 14:30 – 16:00

Monterotondo CNR Seminar Room, Building 21

Highlights: Membrane transport involves the formation of several types of membranous carriers/vesicles connecting different cell compartments. Membrane fission is an essential event in membrane transport as well as in other cellular processes such as organelle partitioning or cell division. There are different types of fission machineries operating at different stages of the exo- and endo-cytic transport pathways. Among these, we focussed on the mechanism of action of the protein CtBP1-S/BARS (BARS) that is required for fission of tubular pleiomorphic carriers involved in transport between the Golgi complex and the basolateral plasma membrane as well as in macropinocytosis, mitotic Golgi partitioning and in COPI-dependent traffic.

In order to induce fission, BARS binds to the phosphoinositide kinase PI4KIII β through a 14-3-3 γ dimer bridge as well as to ARF and to the PI4KIII β activator frequenin. Once in this complex, BARS stimulates the enzymatic production of phosphatidic acid, that is essential for the fission of post-Golgi carriers. Thus, BARS acts as an adaptor/scaffold protein that recruits and activates a lipid metabolic reaction at sites where fission must take place.

By *in vitro* approaches using giant (GUVs) and large unilamellar vesicles (LUVs) as model systems it was demonstrated that both BARS and lipid components are required for the successful completion of BARS-dependent fission.

Host: Prof. Fabio Mammano