

Fèlix Campelo

Cell and Developmental Biology Programme, Centre for Genomic Regulation, Barcelona.

A mechanism by which proteins sense and modify the geometry and topology of intra-cellular membranes

Abstract:

Proteins are transported between cellular compartments by means of small membrane-bound transport carriers. The biogenesis of these transport carriers requires the bending of the membrane to generate a small neck, and the eventual scission of this neck to create a separate compartment by membrane fission.

An elastic model of the lipid bilayer, which describes the stresses and strains within the membrane, can physically describe these geometrical and topological changes occurring in this process.

I will describe how a certain class of proteins possessing the ability to shallowly insert into the membrane have a dual role in these events:

(1) They can, by binding and inserting into the membrane, modify the membrane curvature; and (2) they can sense the membrane curvature of the membrane and therefore preferably bind to regions of large membrane curvature.

The importance of these processes is crucial for our understanding of how transport carriers are formed, and hence how proteins are secreted from cells.

Date: January 30, 2014

Place: Room C1/028

Time: 12:00

