The life cycle of the lipid droplets: from biogenesis to consumption.

Albert Pol

Lipids are essential for life but in excess they are toxic. Thus, cells have developed sophisticated mechanisms of lipid transport and lipid storage. Our main goal is to understand these intracellular fluxes of lipid and how they determine the proper functioning of our body. Lipid droplets (LDs) are ubiquitous organelles that collect, store, and supply lipids in all the cells from yeast to mammals. Nonetheless, excessive or reduced accumulations of LDs are hallmarks of prevalent human diseases including obesity, diabetes, myopathies, arteriosclerosis, or lipodystrophies. We will show our recent progress in the characterization of the molecular mechanisms that determine the formation and accumulation of lipid droplets. In addition, we will also discuss surprising features of this organelle during liver regeneration or during the immune response of our cells to bacterial infection.

More details of this research can be found in our web (http://www.celltrafficbcn.cat/Lipid-Trafficking-and-Disease-Group.html) or in the following articles (collaborations are indicated with an asterisk):

Pol A et al., **J Cell Biol.** 2014 Mar 3;204(5):635-46.

Kassan A et al., **J Cell Biol.** 2013 Dec 23;203(6):985-1001.

Herms A et al., **Curr Biol.** 2013 Aug 5;23(15):1489-96.

*Anand P et al., **eLife.** 2012 Nov;1:e00003.

*Fernandez-Rojo MA et al., **Hepatology**. 2012 May;55(5):1574-84.

Bosch M et al., **Traffic**. 2011 Nov;12(11):1483-9. Research Article.

Bosch M et al., **Curr Biol.** 2011 Apr 26;21(8):681-6.

Fernandez-Rojo MA et al., **Science**. 2006 Sep 15;313(5793):1628-32.

Turró S et al., **Traffic**. 2006 Sep;7(9):1254-69.

Albert Pol