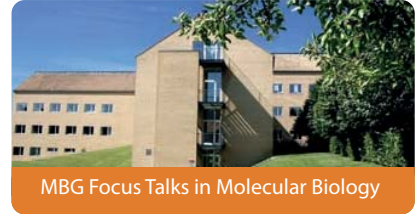


MBG FOCUS TALK

hosted by Poul Nissen



Tuesday July 7th, 2020, from 11:30-12:15

In the MBG conference room (3130-303)

By Rosa L. López-Marqués

Associate Professor
Group Leader Biomembranes and Lipid Flippases
Department of Plant and Environmental Sciences
University of Copenhagen



Lipid specificity determinants in plant lipid flippase

P-type ATPases of the P4 subfamily translocate phospholipids towards the cytosolic side of the membranes at the expense of ATP. In arabidopsis, 12 P4 ATPases have been identified, named ALA1-ALA12.

Our work focuses on understanding the mechanism, regulation and physiological role of ALA proteins, and we have previously provided evidence of the relevance of plant flippases in vital membrane-related cellular processes, such as lipid signalling during light sensing, adaptation to temperature changes, nutrient uptake and pathogen responses. Despite the accumulating evidence of the importance of these proteins for plant survival, most members of the family do not have an assigned function.

We are currently characterising a clade of very closely related P4 ATPases, ALA9-ALA12, that are involved in plant development. Despite the fact that the proteins are 73% identical, not all members of the family share the same preferred substrate, which provides us with a fantastic platform to study the determinants for lipid specificity in plant proteins.

Recently, the structures for 4 different P4 ATPases have been resolved, including several with a bound lipid. The implications of these structures for our understanding of the lipid specificity determinants within the ALA9-ALA12 family will be discussed in the context of our last results.

Anyone interested is very welcome to attend

Online connection via Zoom is available upon request to karenb@mbg.au.dk