MBG FOCUS TALK

hosted by Poul Nissen

MBG Focus Talks in Molecular Biology

Monday 23 October from 11:30-12:15

Venue: Faculty club, 1870-816
Dept. Molecular Biology and Genetics, Aarhus University

By Rosa L. López-Marqués

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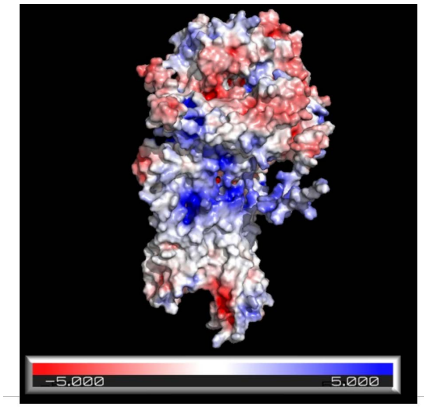
Biochemical and biophysical studies on plant lipid flippases

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. The proteins present different substrate specificities with respect to both phospholipids and ceramides, but they are heavily identical (app. 73%), which makes them a good example to study the determinants for lipid specificity. Currently, we are focusing on biochemical and biophysical studies on the best characterized member of the family, ALA10, but other members are already on the pipeline.



Electrostatic surface of ALA10 calculated from its AlphaFold2 model.

The biochemical properties of purified and reconstituted ALA10 will be presented together with our most recent data on the mechanisms regulating its activity.

Everyone interested is very welcome to attend.

The MBG Focus Talks are organised by
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