NITROTOR

Unraveling TOR-mediated signaling in relation to nitrogen metabolism.

ABSTRACT

This project will elaborate on the function of TOR mediated signaling and specific downstream targets involved in nitrogen metabolism in Arabidopsis.
In collaboration with the Pr De Jaeger group at the VIB Department of Plant Systems Biology we will establish a nitrogen starvation protocol in Arabidopsis cell suspension cultures to set up a model system for the study of the TOR mediated signaling in relation to nitrogen availability.
This collaboration will deliver a unique cellular model system in plants to follow cell growth and proliferation upon changing the nitrogen conditions. Through omics analysis on this system, we will uncover the regulatory network that holds the cross talk mechanisms between nitrogen metabolism, TOR and its antagonist in low energy conditions, SnRK1. Candidate genes will be selected from our datasets that play a key role in the TOR mediated regulation of growth in relation to nitrogen availability and these genes will be validated though mutant analysis and functionally analyzed. This will create opportunities to optimize plant growth under limiting nitrogen conditions towards a more sustainable agriculture.

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Project leader : Benoit Lacombe
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