

RNA degradation

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The scientific challenge

RNA degradation stands among the most potent and rapid means of regulating gene expression. In all organisms, components of the RNA degradation machinery are linked to disease resistance/susceptibility and are major actors of the response to abiotic stresses. The general objectives of our group are (i) to identify new components of the RNA degradation machinery in plants, (ii) to understand their role in regulating gene expression, (iii) to determine their impact on plant development and their involvement in the response to abiotic stresses (iv) to define the roles of RNA degradation pathways in the context of viral infections.

These scientific goals are addressed using complementary experimental strategies, from classical molecular biology to innovative high throughput technologies aiming at identifying 3' end RNA modifications, from forward to reverse genetics, from classical protein biochemistry to the identification of complex interaction networks.

The strategic (innovation-oriented) challenge

Existing

- Identification of new components of plant response to abiotic stresses and viral infections
- Dynamics of RNA modifications in response to abiotic stress
- Genome-wide and gene-targeted identification of 3' end modifications by nucleotide additions
- Identification of RNA degradation factors in plants by genetic and proteomic approaches

Potential

- New RNA modifications and their role in mRNA translation and stability
- Function of RNA modifications in RNA localization
- Identification of new targets for the development of antiviral strategies