

Workshop on Plant Biology 2026

Centro Residenziale Universitario di Bertinoro
25-27 February 2026



Digital Poster Session



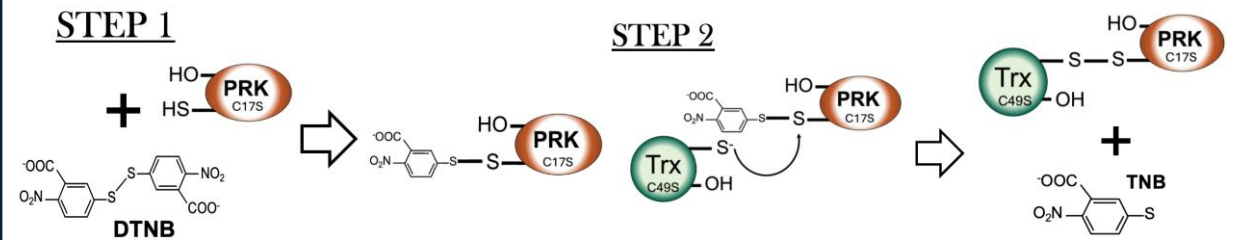
Preliminary Studies on the Interaction Between Thioredoxin and Phosphoribulokinase

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Phosphoribulokinase (**PRK**) is a key enzyme in the Calvin-Benson cycle, regulated by thiol-disulfide exchange. Previous studies have shown that reduced thioredoxin f (**Trx f**) activates oxidized PRK through the formation of an interprotein disulfide intermediate, where Cys46 of Trx f transiently pairs with Cys55 of PRK. Although the Trx-dependent reduction mechanism is well characterized, the recognition process between the two proteins is yet to be elucidated.



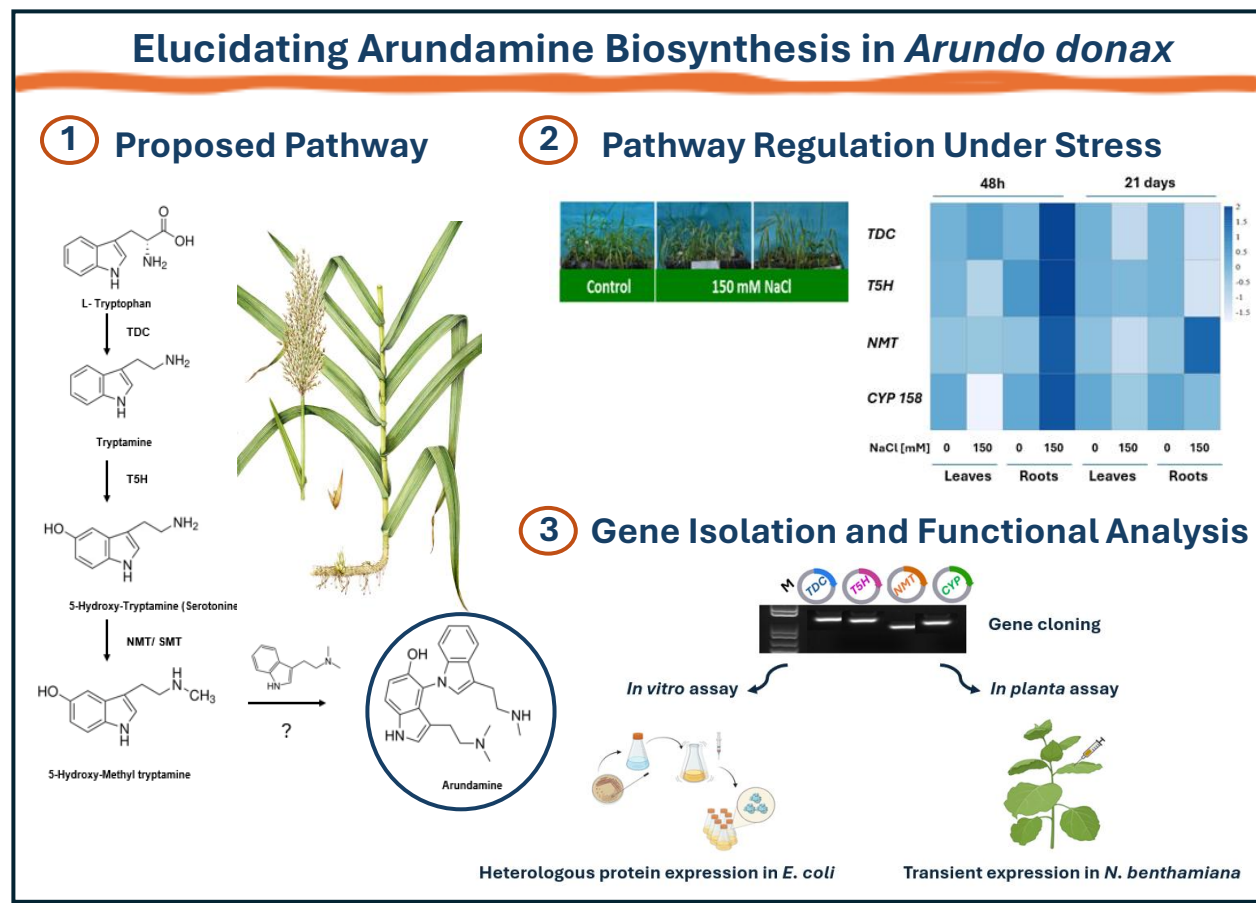
Unveiling the Biosynthetic Pathway of Arundamine in *Arundo donax*: A Serotonin-derived Alkaloid with Ecological Function and Therapeutic Promise

De Falco F.¹, D'Amelia V.³, D'Agostino N.³, Piccinelli A.¹, Docimo T.²

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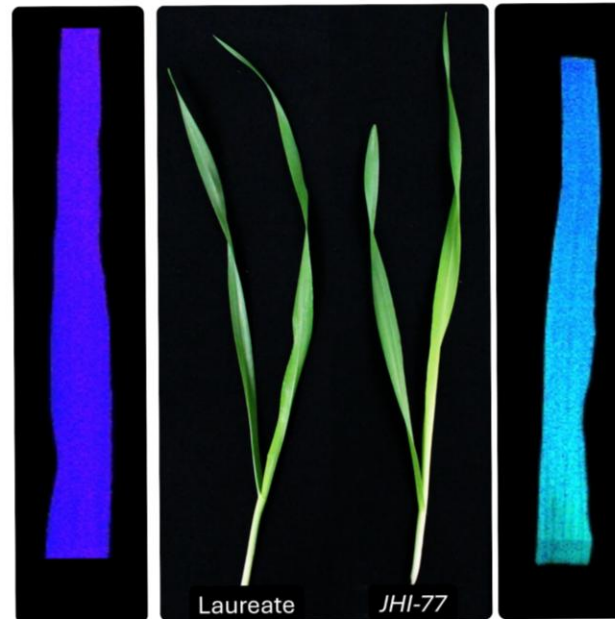
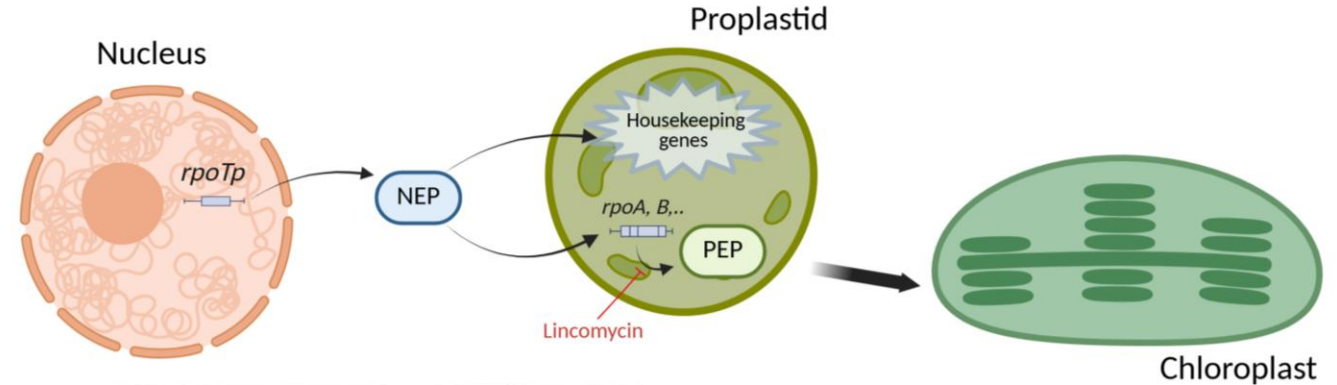
²National Research Council of Italy, Institute of Biosciences and Bioresources (CNR-IBBR), Via Università 133, 80055 Portici, Italy

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Nuclear-Encoded RNA Polymerase Activity Drives Chloroplast Differentiation Under Environmental Challenges in Barley

Giorgia Ercoli, Viola Torricella, Luca Tadini, Paolo Pesaresi
Università degli Studi di Milano, Dipartimento di Bioscienze



Nuclear-encoded RNA polymerase (NEP) is involved in early chloroplast development and becomes fundamental upon chloroplast differentiation impairment

JHI-77 barley line has altered NEP activity and delayed chloroplast development

COMPARISON OF NOVEL FLUORESCENT MITOCHONDRIAL CALCIUM INDICATORS FOR TAILORED ANALYSES OF PLANT STRESS RESPONSES

Giorgia Fabbrini, M. Franco, A. Meraviglia, M. Grenzi, C. Nardi, N. Ricci, S. Buratti, M.C. Bonza, M. Schwarzländer, A. Costa, F. Resentini

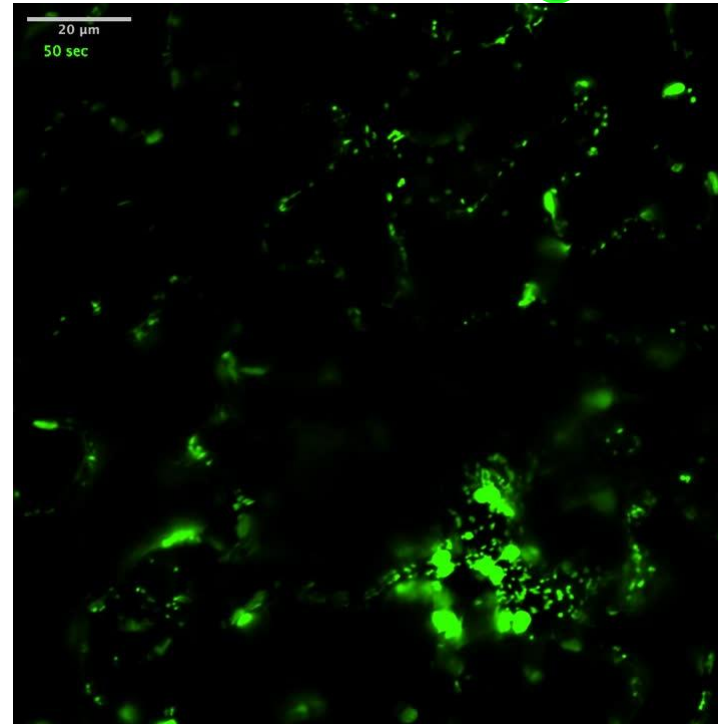
Università degli Studi di Milano, Dipartimento di Bioscienze



Novel mitochondrial Ca^{2+} sensor

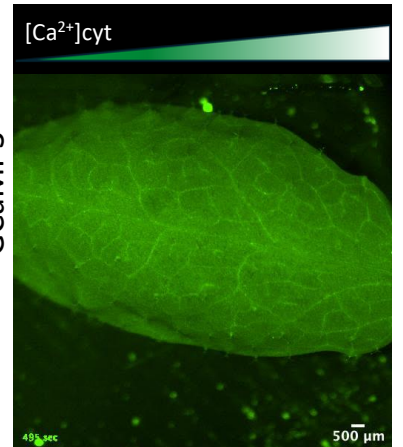
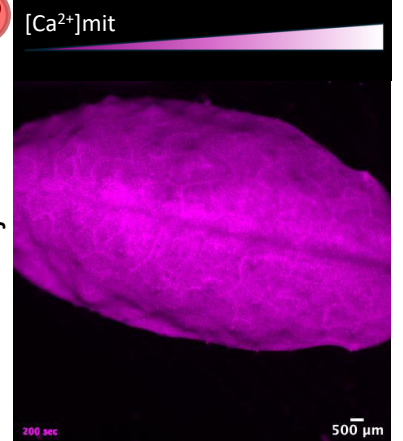
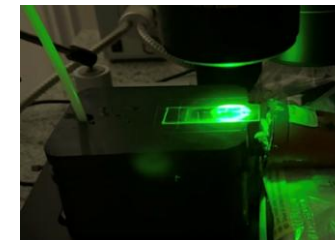
For additional possibilities of dual compartment analyses

4mt-GCaMP6f



Hypoxia

Physiological analyses to understand the Ca^{2+} spike in response to O_2 depletion in the mitochondria and cytosol



Hydropriming as a strategy to mitigate heat stress-induced germination constraints in orphan legumes

Nicolò Bedotto¹, Andrea Pagano¹, Conrado Dueñas Jr¹, Amine Elleuch², Bassem Khemakhem², Hanen El Abed², Eleni Tani³, Maria Goufa³, Dimosthenis Chachalis⁴, Alma Balestrazzi¹

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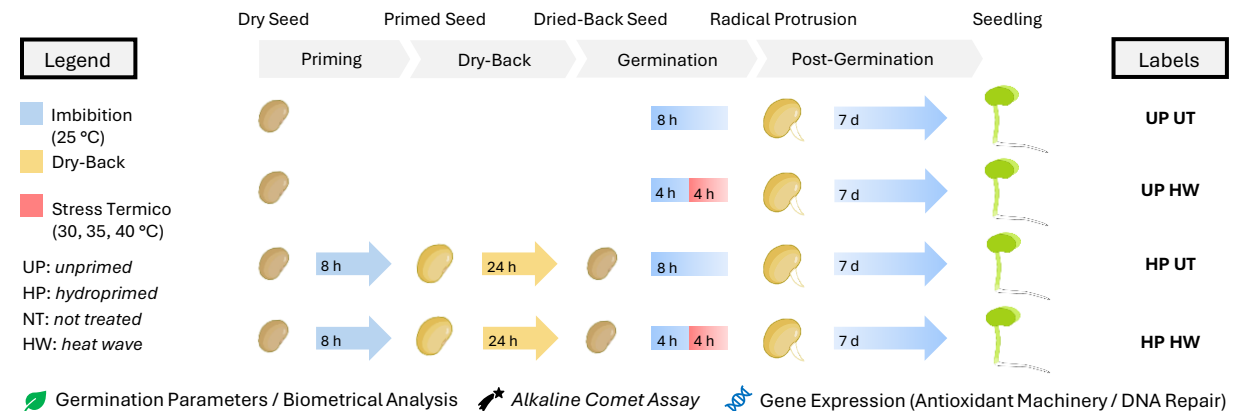
INTRODUCTION & AIM OF THE STUDY

The valorization of existing tolerant germplasm is an essential step towards the breeding of new climate-ready cultivars. In this context, a resource is represented by orphan legumes, understudied crops that show unique tolerance profiles against multiple environmental stressors. Given that heat stress has been associated with poor germination performance and seedling establishment, the development of tailored seed priming treatments might represent an adaptive strategy to mitigate these constraints.



This work explores the potential of hydropriming as a tool to mitigate the heat-stress-mediated impact on germination performance in three representative orphan legume species, namely *Lathyrus sativus*, *Pisum sativum* var. *arvense* and *Trigonella foenum-graecum*.

EXPERIMENTAL SYSTEM



Exploring protoplast-based systems for DNA-free genome editing and regeneration in olive

Giorgia Sportelli^{1*}, Laia Ribalta Campos², Mario Nicotera¹, Eleonora Vecchio¹, Roberta Spanò¹, Annalisa Giampetruzzi¹, Pasquale Saldarelli¹, Fernando Pliego-Alfaro², José A Mercado², Maria Saponari¹, Giorgio Gambino¹, Irene Perrone¹

¹Istituto per la Protezione Sostenibile delle Piante, Consiglio Nazionale delle Ricerche (CNR-IPSP) Torino and Bari, Italy; ²Instituto de Hortofruticultura Subtropical y Mediterránea La Mayora (IHSM-UMA-CSIC), Universidad de Málaga, Málaga, Spain

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Working with olive

- uncertain biotechnology
- recalcitrant species
- regeneration

- Genetic and in vitro manipulation
- Using different cultivars and starting material
- Lines of research with multiple purposes

A photograph of a laboratory setup for olive protoplast work. It shows a petri dish with a young olive plantlet, a petri dish with a yellow flower, a petri dish with a blue glove, and a petri dish with a blue liquid. A microscope is visible on the right side of the image. An inset image shows two olive protoplasts under a microscope.

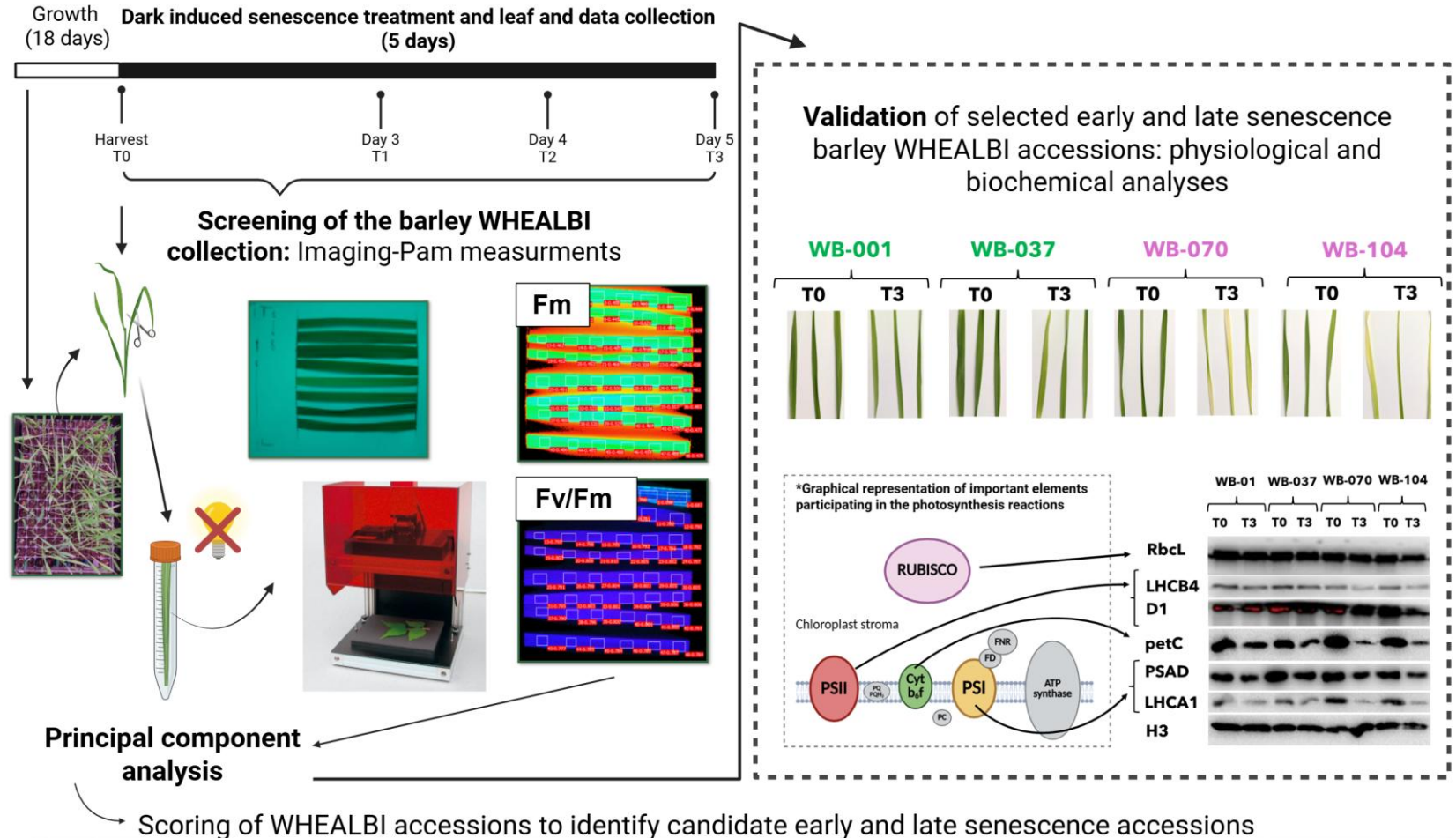
Screening barley genetic diversity

The stay-green trait for next generation barley

[Beatrice Magnaschi](#)¹, Ali Masoumi¹, Viola Torricella¹, Anna Bertoncini², Alessandro Tondelli², Luigi Cattivelli², Paolo Pesaresi¹, Nicolaj Jeran¹.

¹ Università degli Studi di Milano, Dipartimento di Bioscienze.

² CREA Genomics and Bioinformatics, Fiorenzuola d'Arda.



Trials for embryogenic callus induction from adult explants of olive cultivars

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Exploring Calcium Oscillations in *Marchantia polymorpha* Rhizoids Under Gravity Responses

Ambra Selene Parmagnani¹, Sara Paola Nastasi¹, Emma Martinelli², Giorgia Tortora², Fabio Palmigiani¹, Alessandra Bonfanti³, Maria Cristina Bonza¹, Alex Costa¹, Andrea Bassi², Alessia Candeo², Francesca Resentini¹

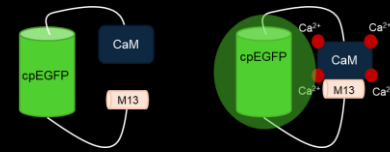
¹ University of Milan, Department of Biosciences

² Politecnico di Milano, Department of Physics

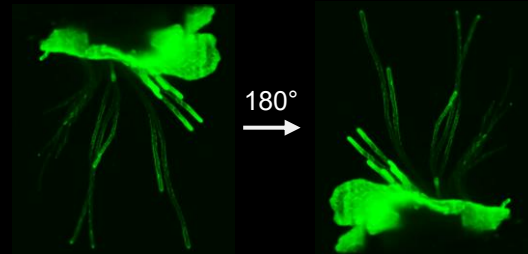
³ Politecnico di Milano, Department of Civil and Environmental Engineering



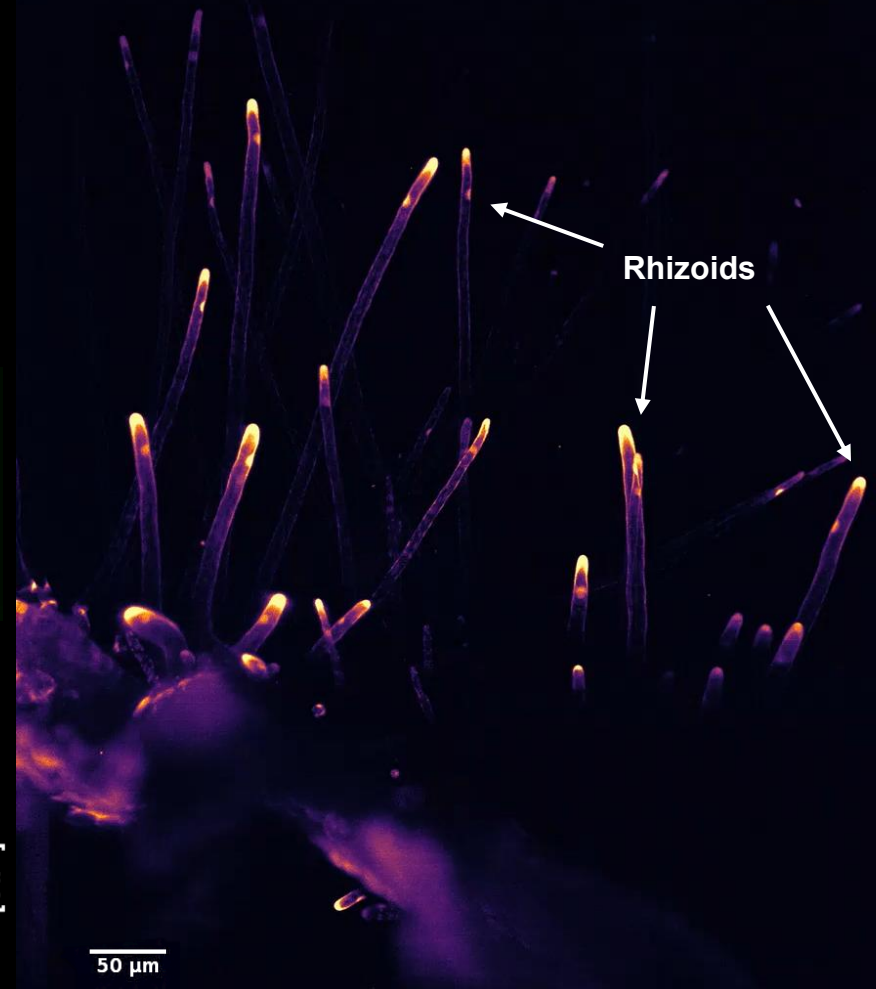
We compare Ca^{2+} oscillations between *Marchantia* rhizoids and *Arabidopsis* root hairs and provide the first evidence of Ca^{2+} oscillations in *Marchantia* during gravitropic stimulation.



Marchantia polymorpha expressing the cytosolic Ca^{2+} sensor GCaMP3



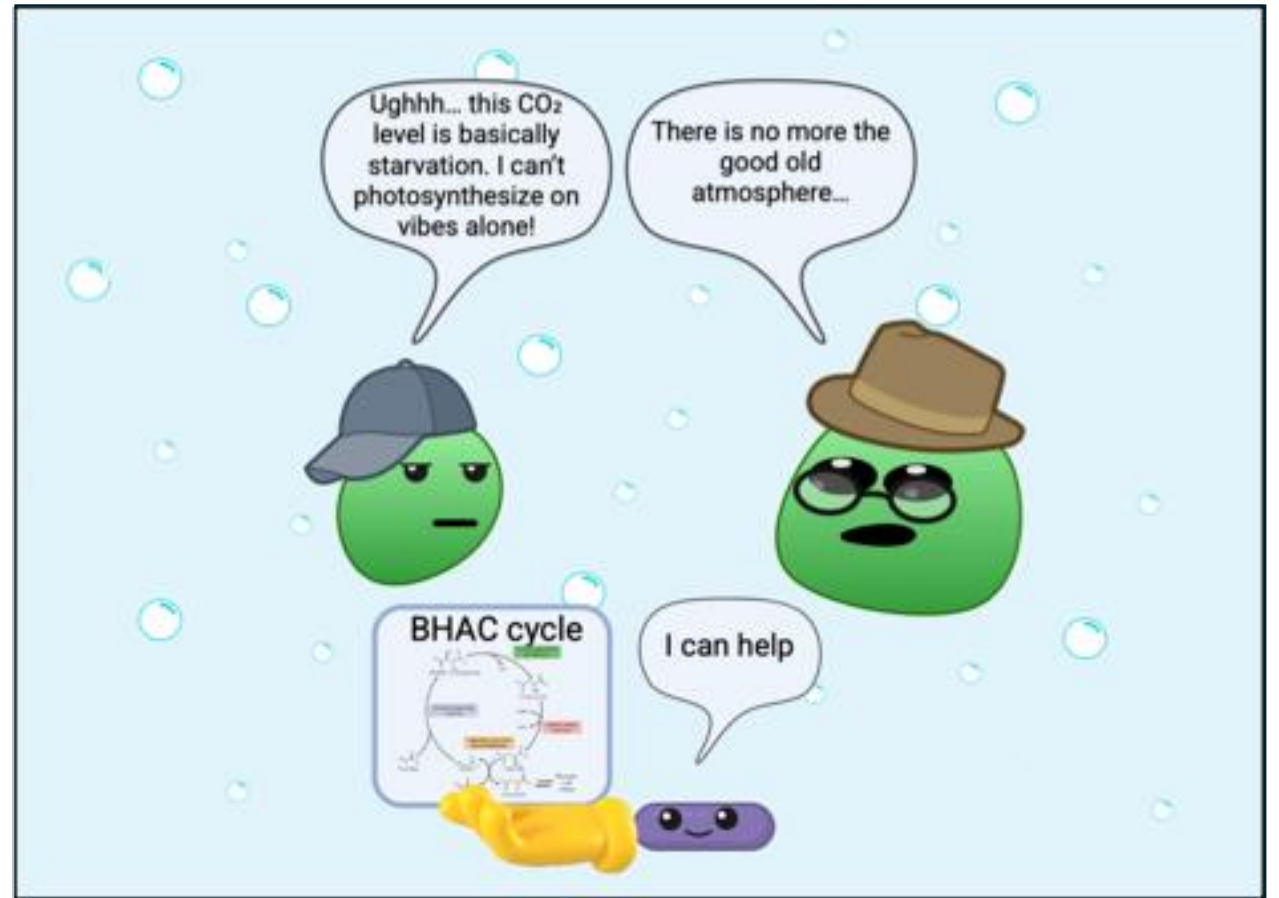
Gravitropic stimulation



Introducing alternative photorespiratory pathway (BHAC from proteobacteria) in marine microalgae *Nannochloropsis g.*

Tommaso Storti, Tomas Morosinotto

UniPD



Lettuce in Space: transcriptomics of reduced gravity and hypomagnetic field conditions

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