UNIVERSITÄT BONN

Die Pflanzenwissenschaftlichen Institute

Einladung zum Pflanzenwissenschaftlichen Kolloquium

Dienstag, den 24. Juni 2025, 13 c.t.

Ort: Seminarraum 2.007, Kirschallee 1-3

– Außerplanmäßiger Vortrag –

Referent: Dr. José Miguel Alvarez

Centro de Biotecnología Vegetal, Universidad Andrés Bello, Chile

Thema: ***„Opposite forces: How plants integrate stress and nutritional signals“***

Plants must continuously balance growth with stress responses. In Arabidopsis thaliana, we found that the transcription factor NLP7, a central regulator of nitrogen signaling, also represses drought- and ABA-responsive transcription factors, integrating antagonistic environmental cues. Using ChIP-seq and the cell-based TARGET system, we identified direct NLP7 targets and their regulatory roles. nlp7 mutants exhibit enhanced drought tolerance, even under glutamine-based nutrition, revealing that drought resilience can occur independently of growth impairment. We extended this approach to tomato (Solanum lycopersicum), where we performed leaf transcriptome profiling under combined nitrogen and drought treatments. This analysis uncovered genes specifically regulated by the interaction of both signals. To study relevant TFs activity at genome scale, we established DAP-seq and TARGET platforms in tomato. These findings reveal plant strategies in transcriptional integration and support new avenues for improving stress resilience in crops.

Diskussionsleitung: Dr. José Manuel Ugalde, INRES - Chemical Signalling, Universität Bonn

Zu diesem Vortrag und zu einer evtl. Nachsitzung sind Sie herzlich eingeladen