

DECIPHERING THE ROLE OF BRASSINOSTEROIDS IN PLANT ADAPTATION TO CLIMATE CHANGE

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Despite the massive amount of information gathered around the functions and mechanisms of Brassinosteroids (BRs) in plants, an important limitation persists in our knowledge of this signaling pathway: almost all we know comes from observations on the BRI1 receptor pathway, that is essential for growth and development, and for which mutants are highly pleiotropic and typically dwarf. Since the discovery of BRI1-like receptors (BRL1/3), we still do not really grasp what are their fundamental functions in plants. Twenty years of research have resumed the analysis of BRLs as redundant BRI1 receptors with a marginal vascular expression and lack of apparent mutant phenotypes. Strikingly, our research takes a novel perspective to explore the function of BRLs in Arabidopsis, to understand the inner working of this pathway. In light of our recent findings showing that overexpression of BRL3-receptors confers drought resistance, we have now deciphered the BRL3 pathway in Arabidopsis, including novel components in the pathway essential to plant adaption to climate change. Our new data change the paradigm for our present understanding of BR signaling in plants and open new possibilities for producing climate resilient crops. The latest results of our research work will be presented.

References:

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