

SFB 924-/BZR – Kolloquium

- Sondertermin -

Freitag, 4. November 2016

11.00 Uhr, H 52

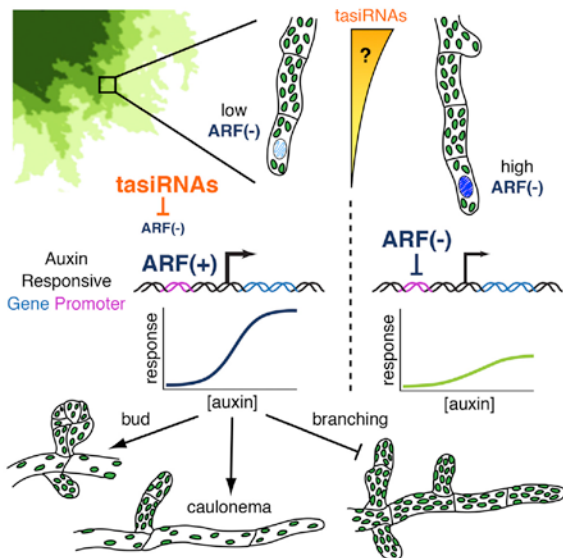


Prof. Dr. Marja Timmermans
Universität Tübingen

Small RNAs as mobile, morphogen-like signals in plant development

Multicellular organisms depend on cell-to-cell communication to coordinate development. Recent findings revealed that in addition to peptide ligands, transcription factors, and hormones, plants use small RNAs as positional instructive signals. An obvious advantage of employing mobile small RNAs is that they represent a distinct class of signaling molecules that possess high specificity and whose movement can, in principle, be regulated independently from that of other developmental signals. Moreover, mathematical modeling predicts

that mobile small RNAs have the intrinsic property to generate sharply defined on-off boundaries of target gene expression, a prediction for which our preliminary data provide compelling experimental support.



Major questions in the Timmermans lab regard the properties and function of mobile small RNAs in plant development: how do small RNAs move, how is their mobility regulated, what are the distinguishing patterning properties of mobile small RNAs, and how might opposing signal gradients interact to achieve the remarkable precision and robustness of developmental programs? They combine classical genetics with quantitative imaging and theoretical approaches to address these questions in model plants, such as Arabidopsis, maize, and moss.

Host: Prof. Dr. Thomas Dresselhaus, LS Zellbiologie und Pflanzenbiochemie



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