Calcium- and BTB domain protein-modulated PINOID protein kinase directs polar auxin transport

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Stellingen

behorende bij het proefshrift

Calcium- and BTB domain protein-modulated PINOID kinase directs polar auxin transport

1. Calcium-dependent regulation of the subcellular localization of a protein serine/threonine kinase by a calmodulin provides a yet undiscovered form of regulating the activity of a kinase that directs the polar targeting of transporter proteins.
This thesis

2. The fact that an Arabidopsis quintuple *btb and taz domain proteins* loss-of-function mutant is defective in gametophyte development complicates the analysis of its role as multifunctional scaffold proteins in other developmental stages and processes.
This thesis

3. The available collections of characterized Arabidopsis insertion mutants allow rapid reverse genetics analysis of gene function only when gene redundancy and/or embryo lethality are not at hand.
This thesis

4. Clear cut conclusions obtained from *in vitro* experiments do not necessarily reflect the *in vivo* reality.
This thesis

5. The recent discovery of PINOID-dependent phosphorylation of PIN auxin efflux carrier proteins does not exclude the involvement of other phosphorylation targets of PINOID in PIN polar targeting.
Friml et al. (2004) Science 306, 862-865
Michniewicz et al. (2007) Cell 130, 1044-1056

6. The interaction of BTB AND TAZ DOMAIN PROTEINs with CULLIN3 observed by Figueroa and coworkers is most likely an artifact of the used *in vitro* pull down assay.
Dieterle et al. (2005) Plant J. 41, 386-399
Figueroa et al. (2005) Plant Cell 17, 1180-1195
Kemel-Zago (2006) Thesis

7. The central role of auxin in all aspects of plant development indicates that other plant hormones, such as ethylene and cytokinin, are modulators of the basic plan laid down by this master regulator.
Laplaze et al. (2007) Plant Cell 19, 3889-3900
Ruzicka et al. (2007) Plant Cell 19, 2197-2212

8. Due to the technical limitations in the way results on the polar subcellular localization of proteins are currently published, the reader may overlook the fact that this is not a static- but instead a highly dynamic process that involves vesicle trafficking, and is regulated by protein degradation, phosphorylation, and lipid- and sterol signaling.

Abas et al. (2006) Nat. Cell Biol. 8, 249-256
Fischer et al. (2004) Curr. Op. Pl. Biol. 7, 670-676
Geldner et al. (2003) Cell 112, 219-230
Laxmi et al. (2008) PLoS ONE 3, e1510
Men et al. (2008) Nat. Cell Biol. 10, 237-244
Michniewicz et al. (2007) Cell 130, 1044-1056

9. Becoming a mother while being a PhD student makes you realize that to be a happy scientist you also need a life/smile outside the lab.

10. Solving a problem is a free ride on an open question road.

11. The words of B. Marley (*War*, 1976) are better than mine to express the idea that "until the colour of a man's skin is of no more significance than the colour of his eyes [there will be] war."

12. Ending the end is more difficult than thought, maybe because it closes a period of your life.

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