PIN protein phosphorylation by plant AGC3 kinases and its role in polar auxin transport

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Stellingen

Behorende bij het proefschrift

PIN protein phosphorylation by plant AGC3 kinases and its role in polar auxin transport

1. AGC3 kinase-mediated phosphorylation of TPRXS(N/S) motifs in the PIN hydrophilic loop is an evolutionary conserved mechanism to regulate auxin distribution in land plants.
This thesis
Galvan Ampudia and Offringa (2007) Trends Plant Sci. 12, 541-547

2. The identification of PID-related and PID-unrelated phosphorylation targets in the PIN1 hydrophilic loop complicates the understanding of the switch function of PID in PIN1 apical-basal localization.
This thesis
Friml et al. (2004) Science 306, 862-865
Zhang et al. (2010) Proc. Natl. Acad. Sci. U. S. A 107, 918-922

3. The strong embryo defects induced by loss-of-phosphorylation PIN1 proteins indicate a central role for PIN1 during embryogenesis that is masked in the *pin1* loss-of-function mutant by functional redundancy with other PIN family members.
This thesis
Blilou et al. (2005) Nature 433, 39-44
Vieten et al. (2005) Development 132, 4521-4531

4. The fact that loss-of-phosphorylation PIN2 proteins do not show an apical-to-basal polarity switch in older epidermal and cortex cells in the root indicates that PIN apicalization is also determined by AGC3 kinase-independent mechanisms.
This thesis

5. Most of the crosstalk between different plant hormone signaling pathways occurs at the transcriptional level.
Jaillais et al. (2010) Nat. Struct. Mol. Biol. 17, 642-645
Ruzicka et al. (2009) Proc. Natl. Acad. Sci. U. S. A 106, 4284-4289

6. The important contributions of *Arabidopsis* research to our current understanding of molecular and cellular mechanisms are not restricted to the plant field but also extend to medical science, and this should be properly recognized in citations and funding.

7. It is very important to have a careful experimental setup, as even the same treatment condition can lead to opposite conclusions about the effect of auxin on PIN protein abundance.
Abas et al. (2006) Nat. Cell Biol. 8, 249-56
Pan et al. (2009) Plant Cell 21, 568-80

8. The great technical advances in molecular and cell biology research have tremendously increased the detail and amount of data demanded for a manuscript to be accepted in a peer reviewed scientific journal.

9. The biggest risk in life is to risk nothing. Only a person who takes risks is free.

10. Success depends on accumulation, accumulation of experience, accumulation of knowledge, and accumulation of countless failures.

11. Time is not important, only life is.

Fang Huang
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