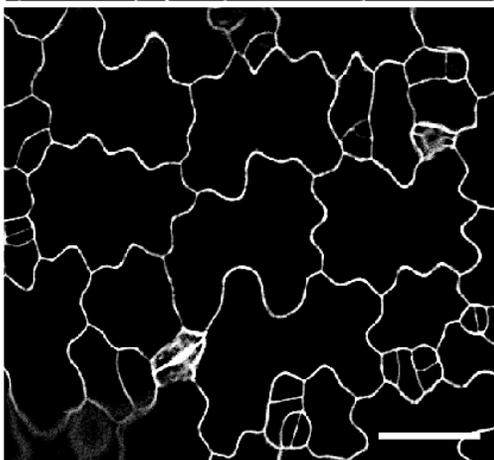
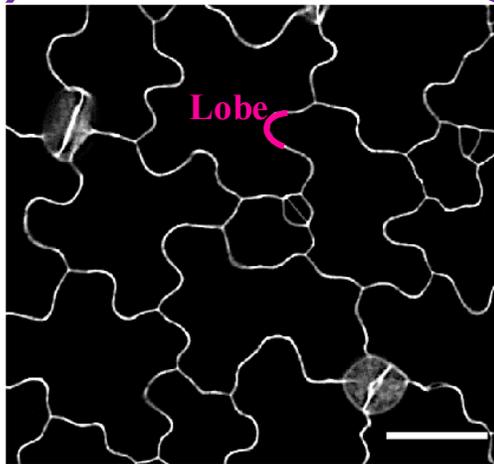
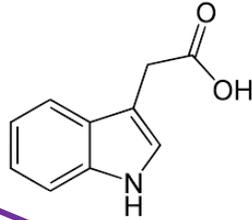
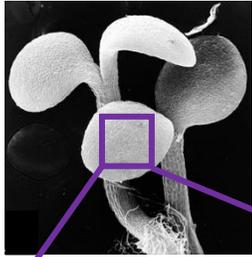
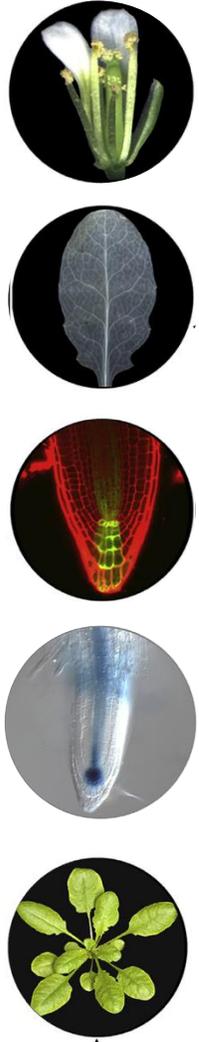
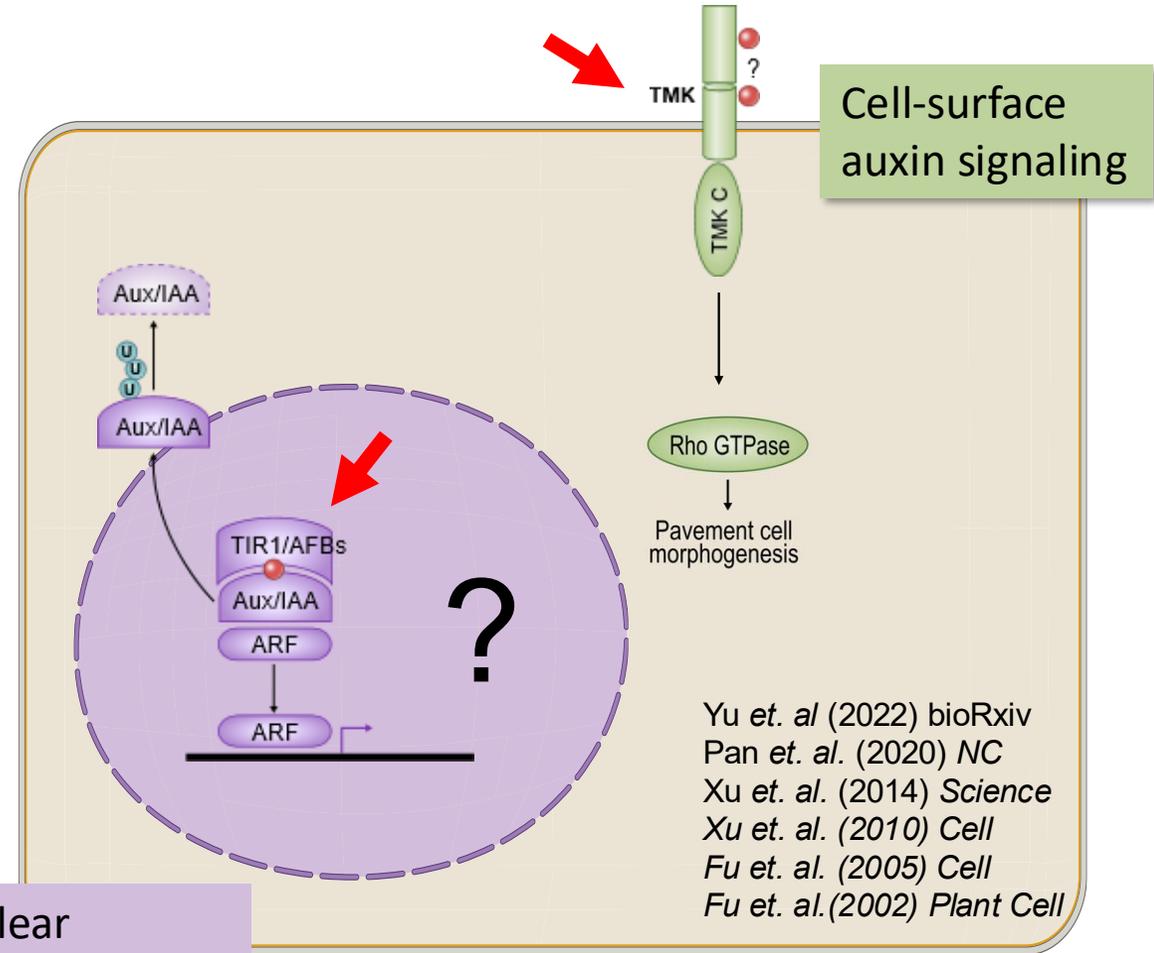
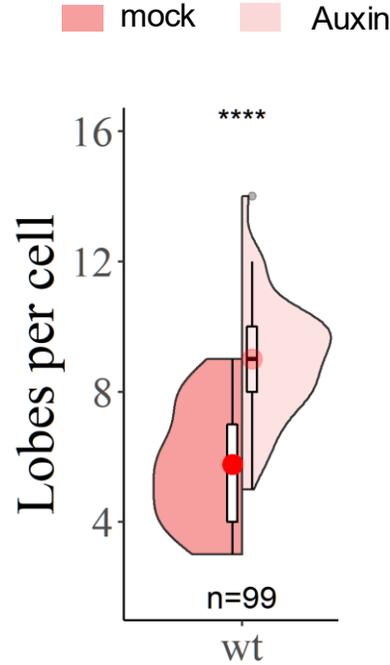


Auxin signaling and pavement cell morphogenesis

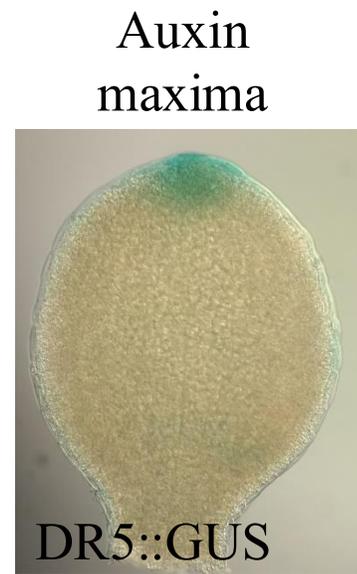
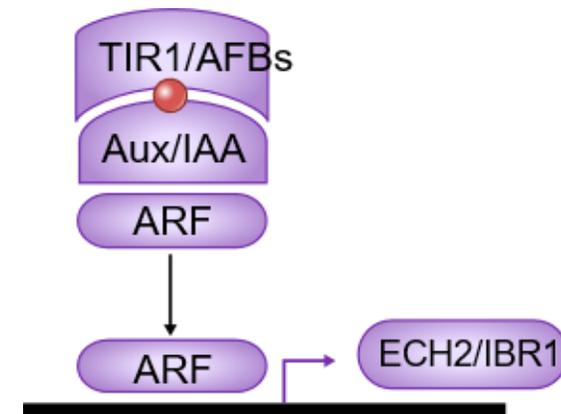
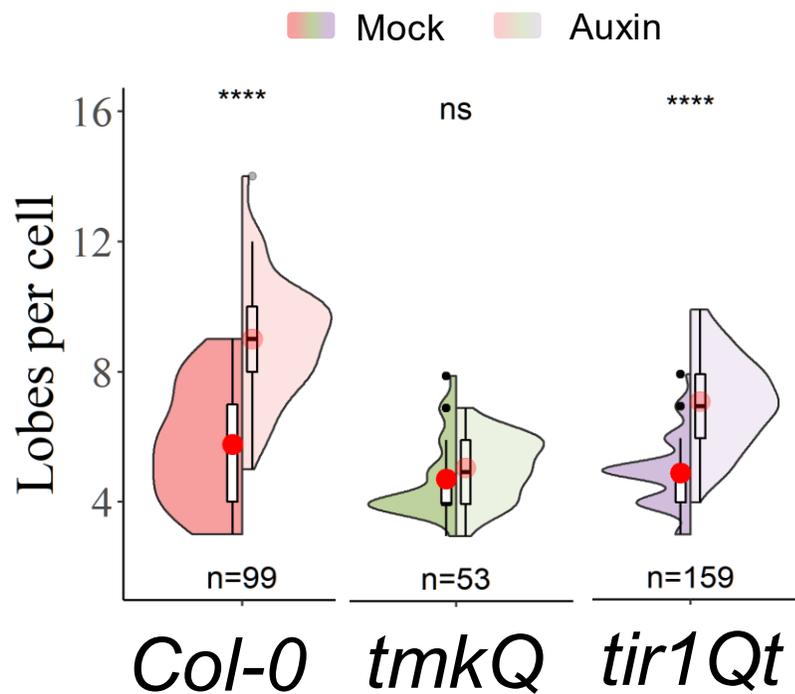
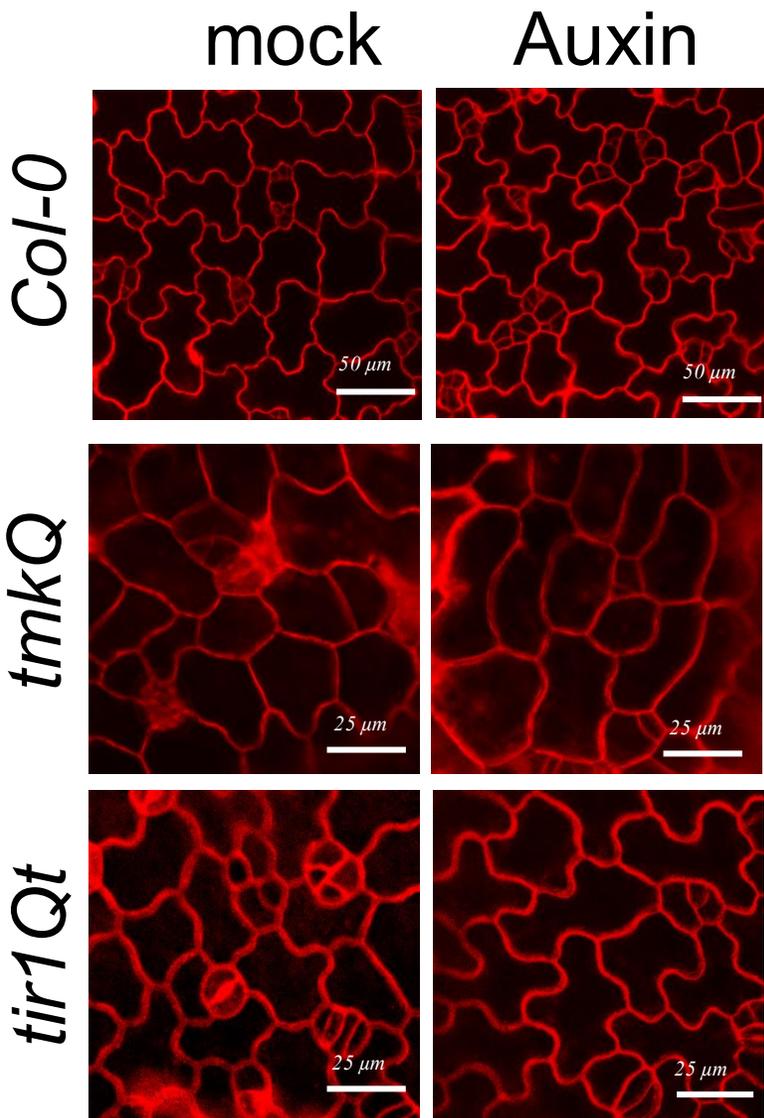


+ Auxin

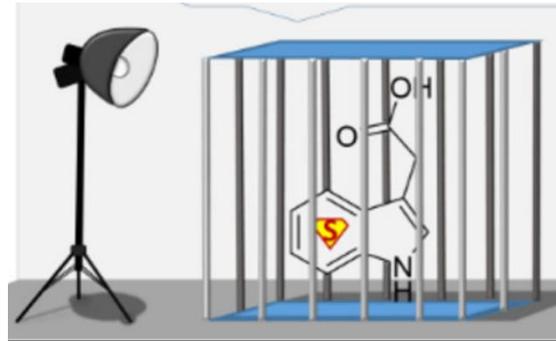
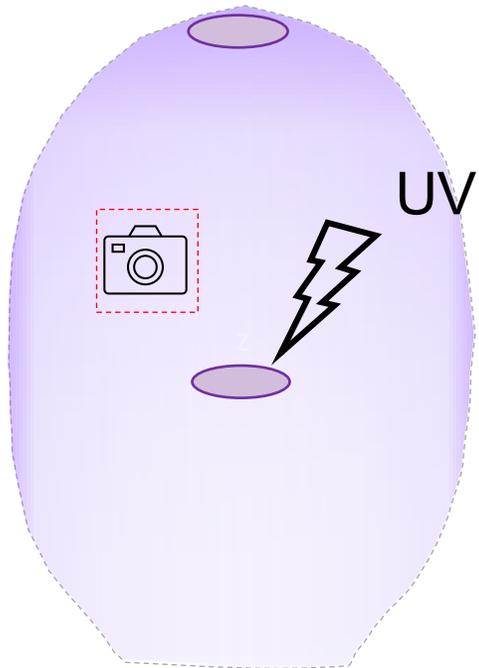


Is there a functional coordination between nuclear and surface auxin signaling ?

Nuclear auxin signaling is involved in interdigitation



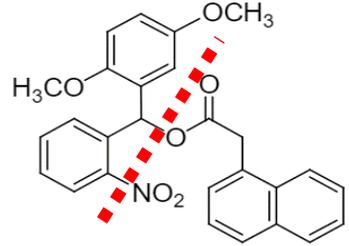
Caged auxin to produce ectopic auxin maxima



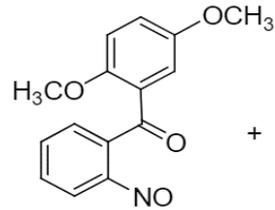
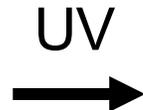
Lights, camera, auxin!

$$\text{Ratio DII / mDII} = \frac{\text{[Fluorescence Image]}}{\text{[Fluorescence Image]}}$$

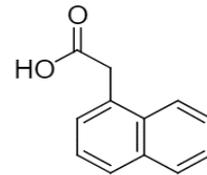
Lower ratio = more auxin



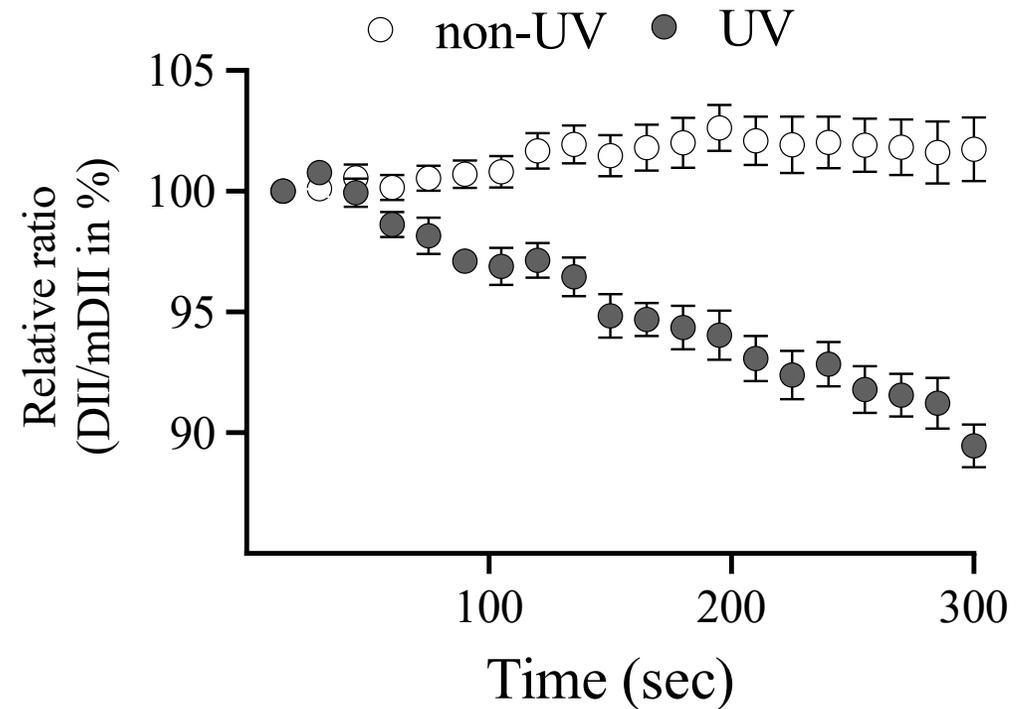
DMPNB-NAA



DMPNB



uncaged NAA

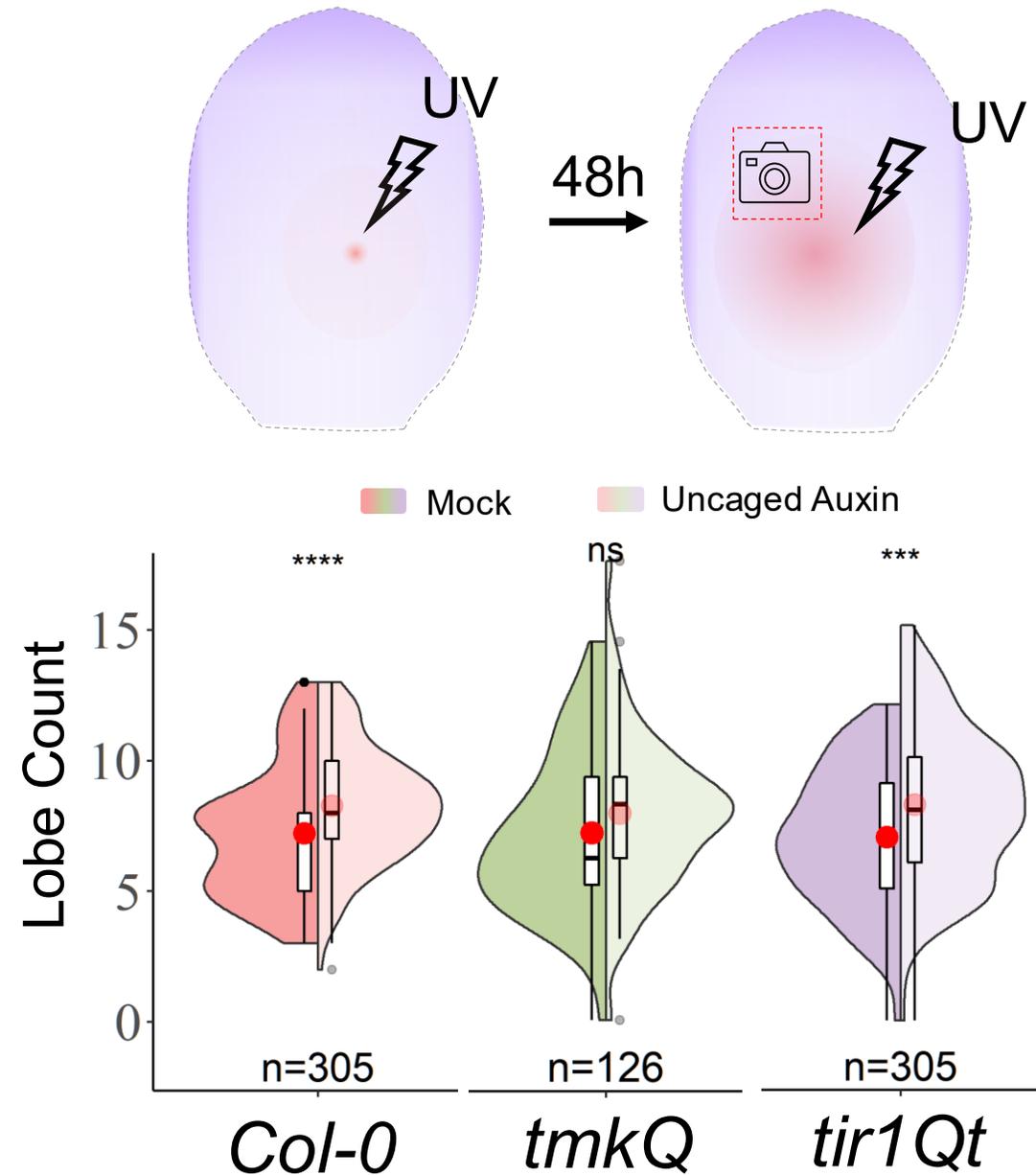
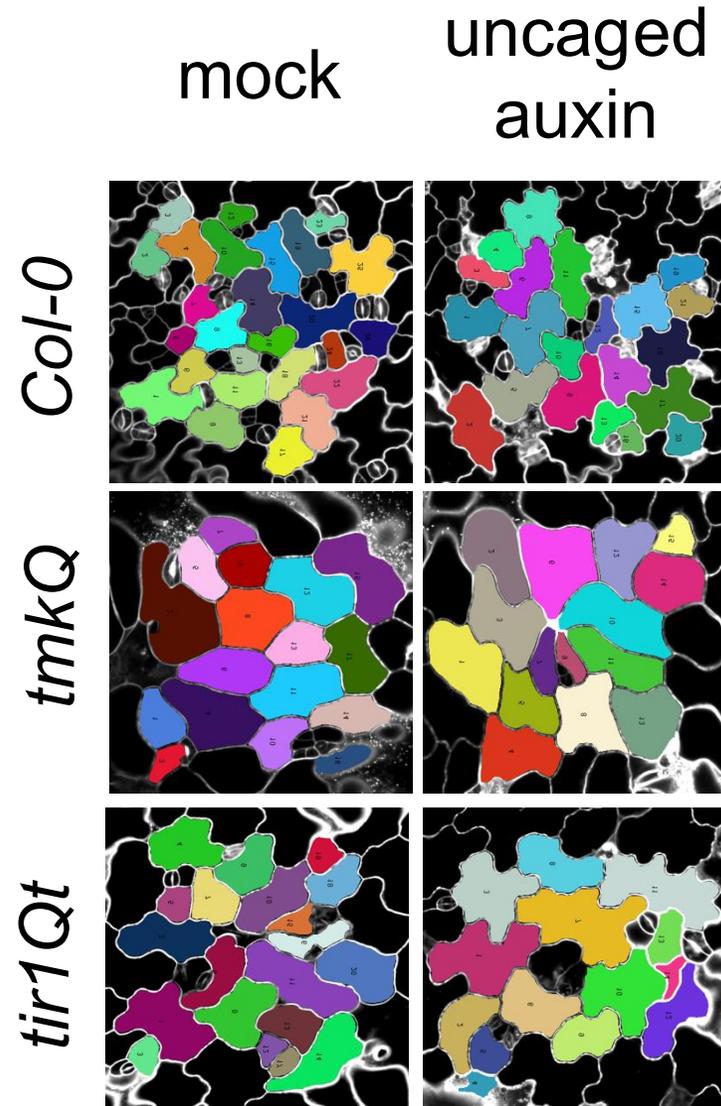


Hayashi et al 2012, ACS chemical biology

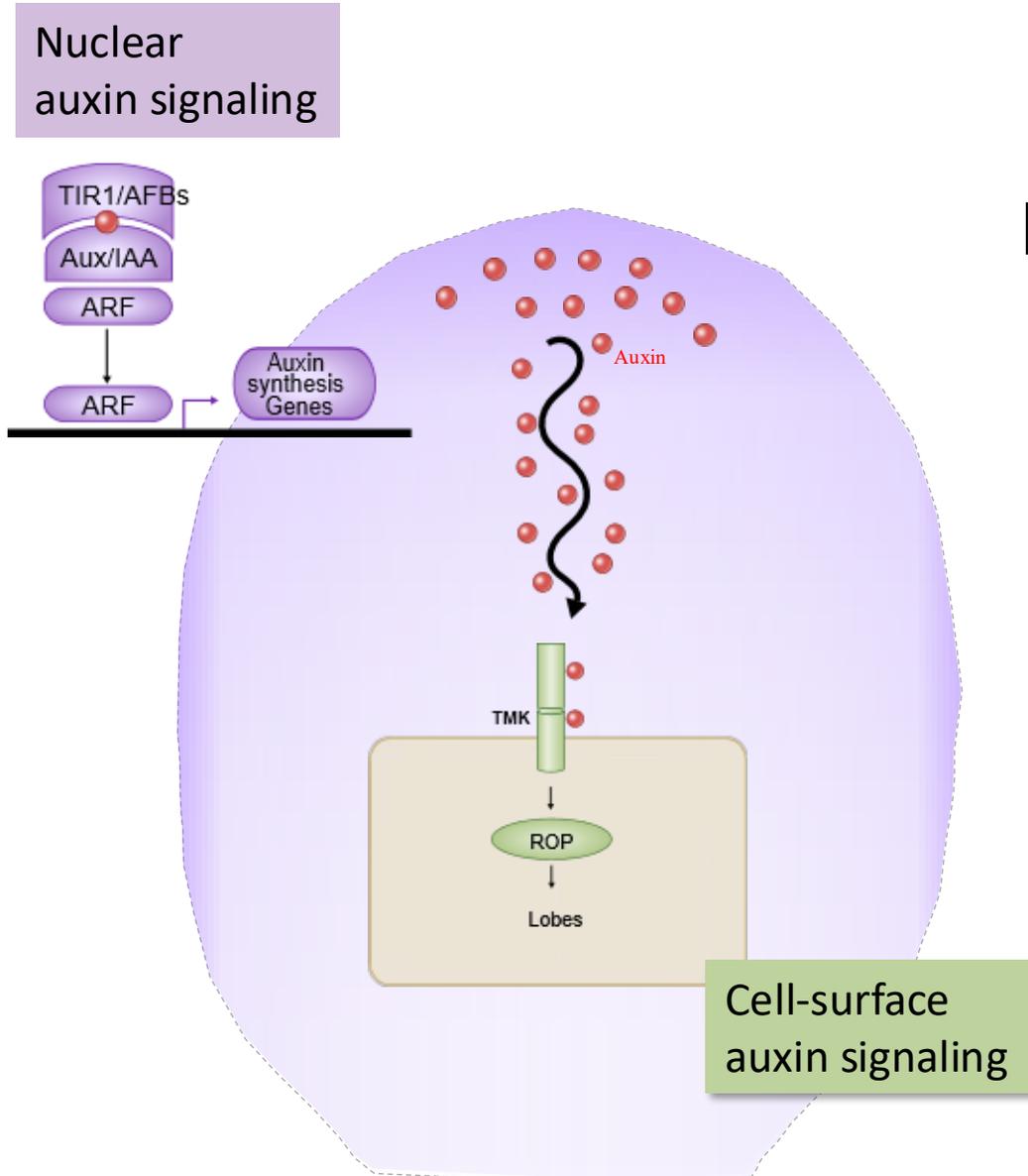
Kusaka et al 2009, ChemBioChem

Hemelikova et al (2021) J Agric Food Chem

Local auxin maxima can globally coordinate interdigitation



Hierarchical auxin signaling



Is there a functional coordination between nuclear and surface auxin signaling ?

Yes!

TIR1/AFB is involved in auxin accumulation at the tip

TMK locally induce lobing



Acknowledgements

Zhenbiao Yang

Xue Pan

Xiang Zhou

Wenwei Lin

Christian Craddock

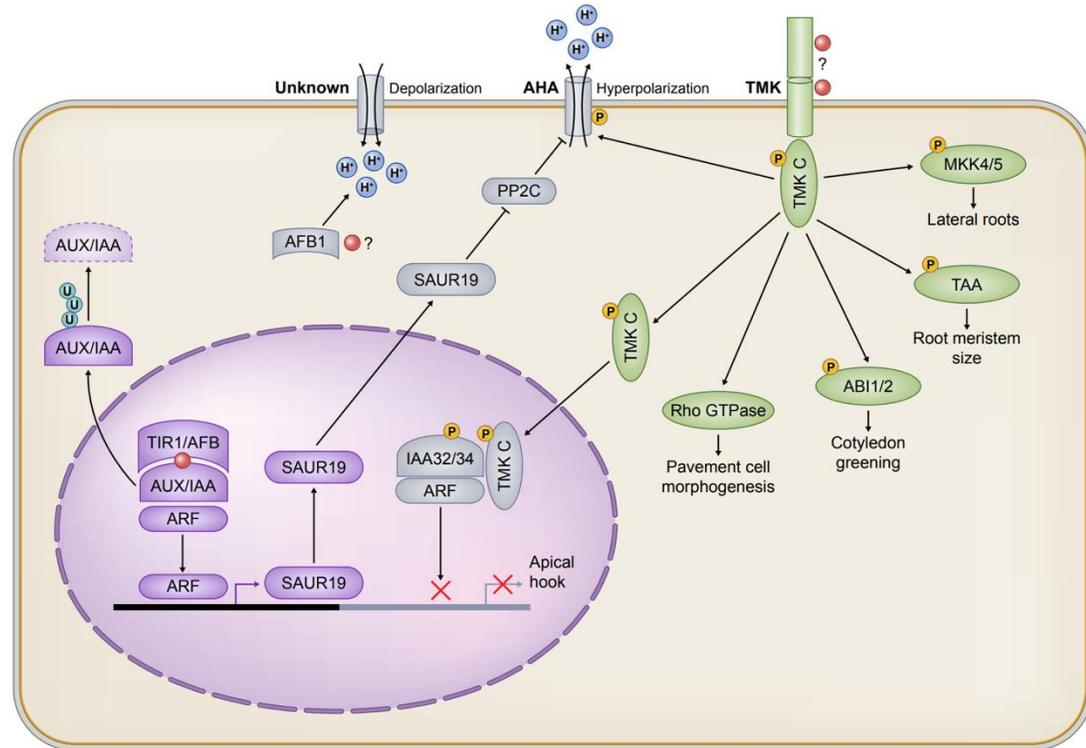
Wenxin Tang

Jingzhe Guo

Jaimie Van Norman

Lucia Strader, Duke U

Ken-Ichiro Hayashi, Okayama U



Funding

Perez-Henriquez & Yang (2022). *New Phytologist*



FAFU-
UCR
HBMC



Auxin signaling

