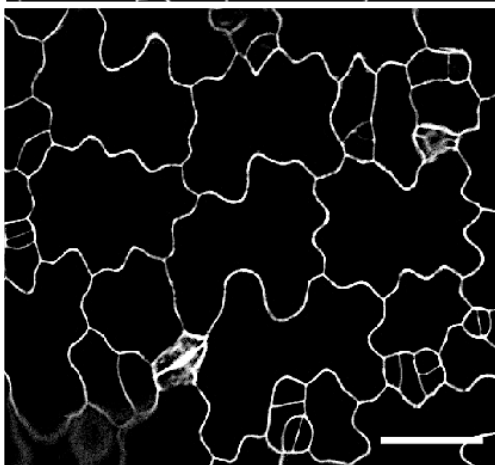
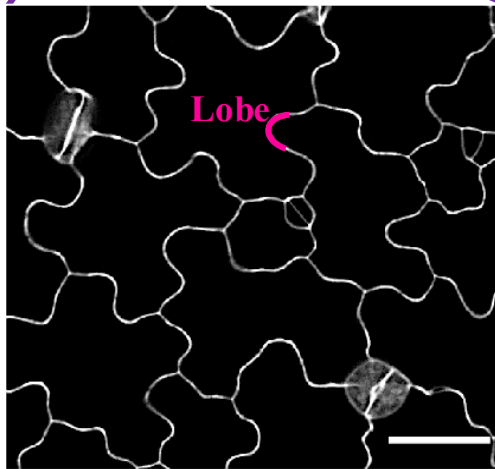
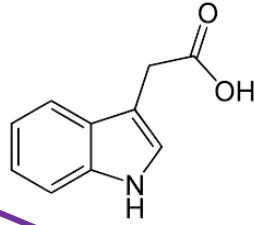
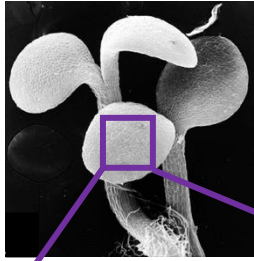
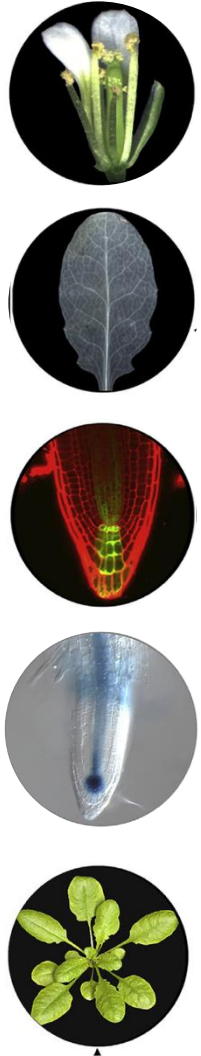
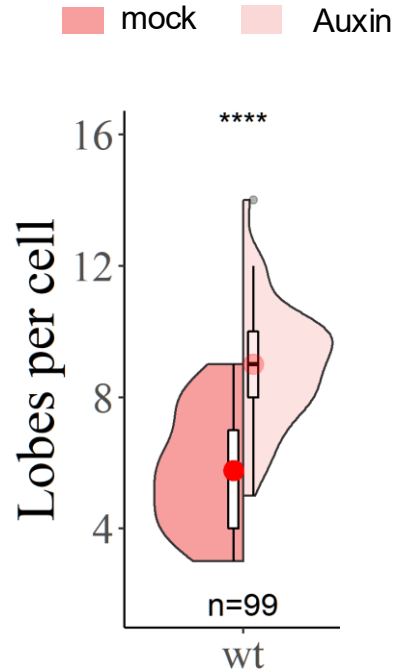


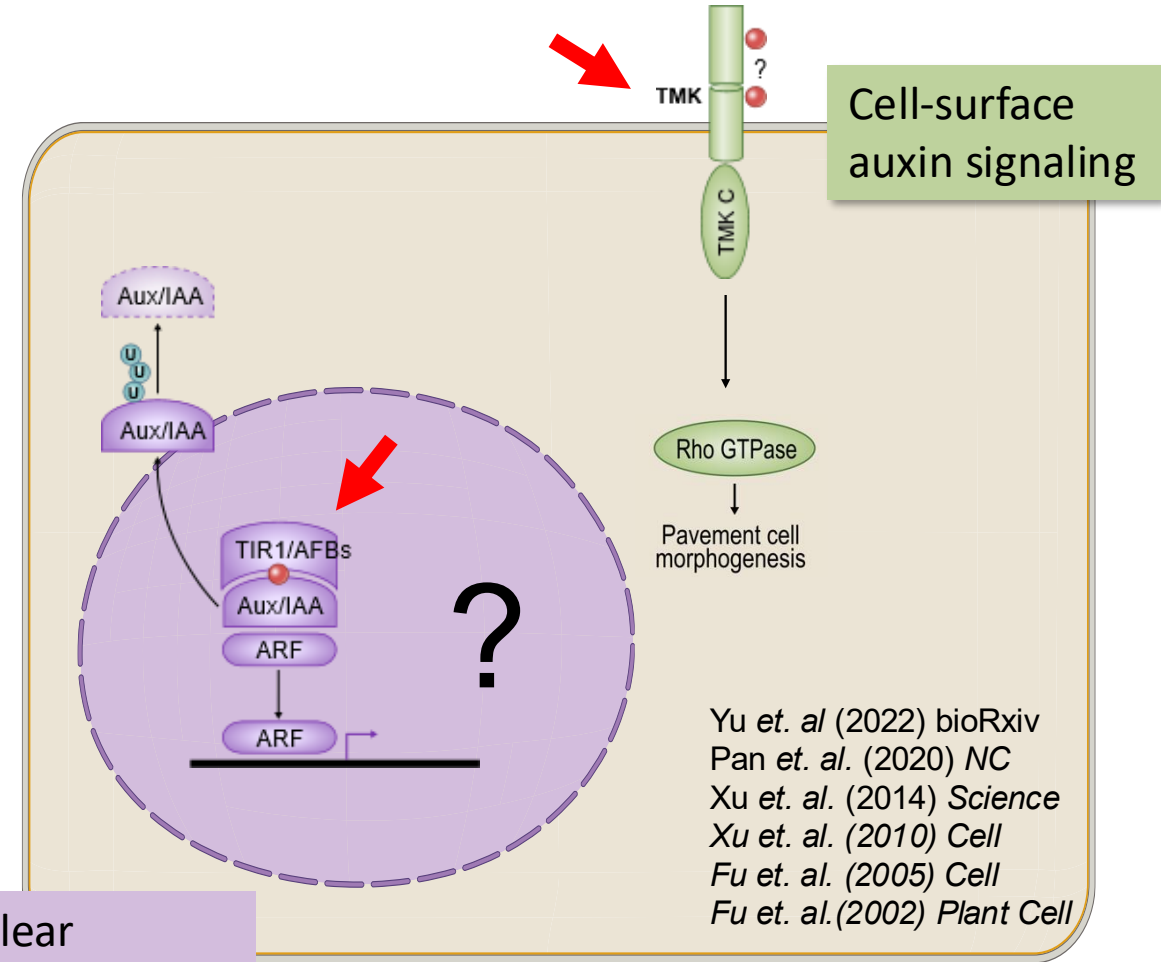
# Auxin signaling and pavement cell morphogenesis



+ Auxin

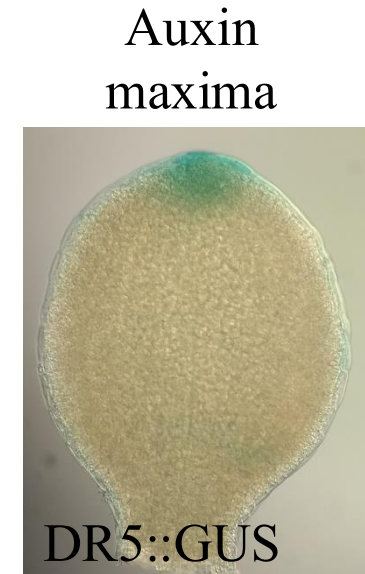
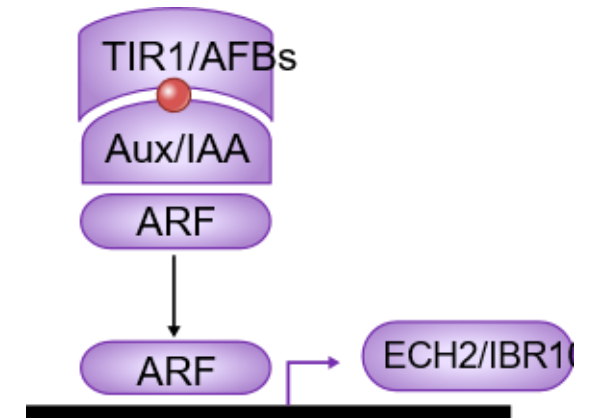
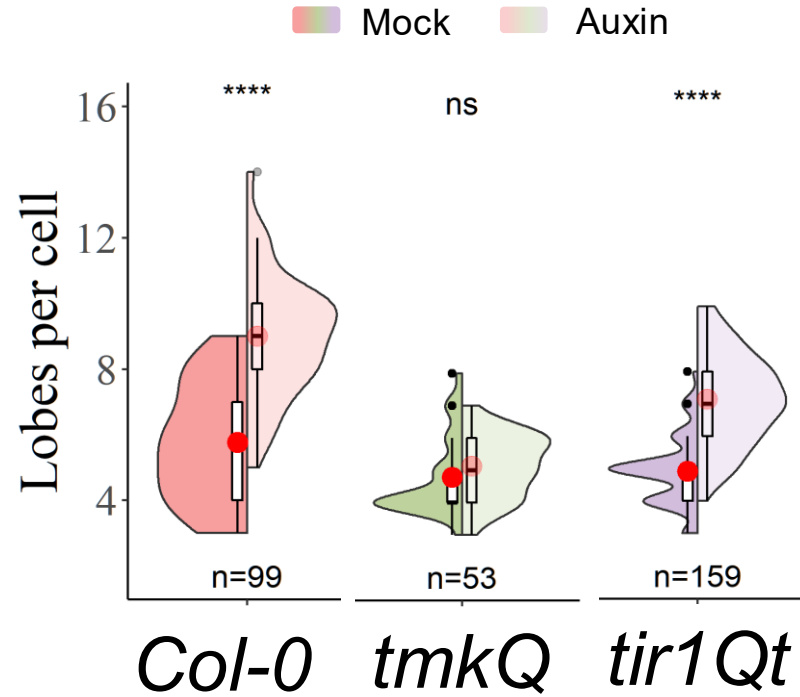
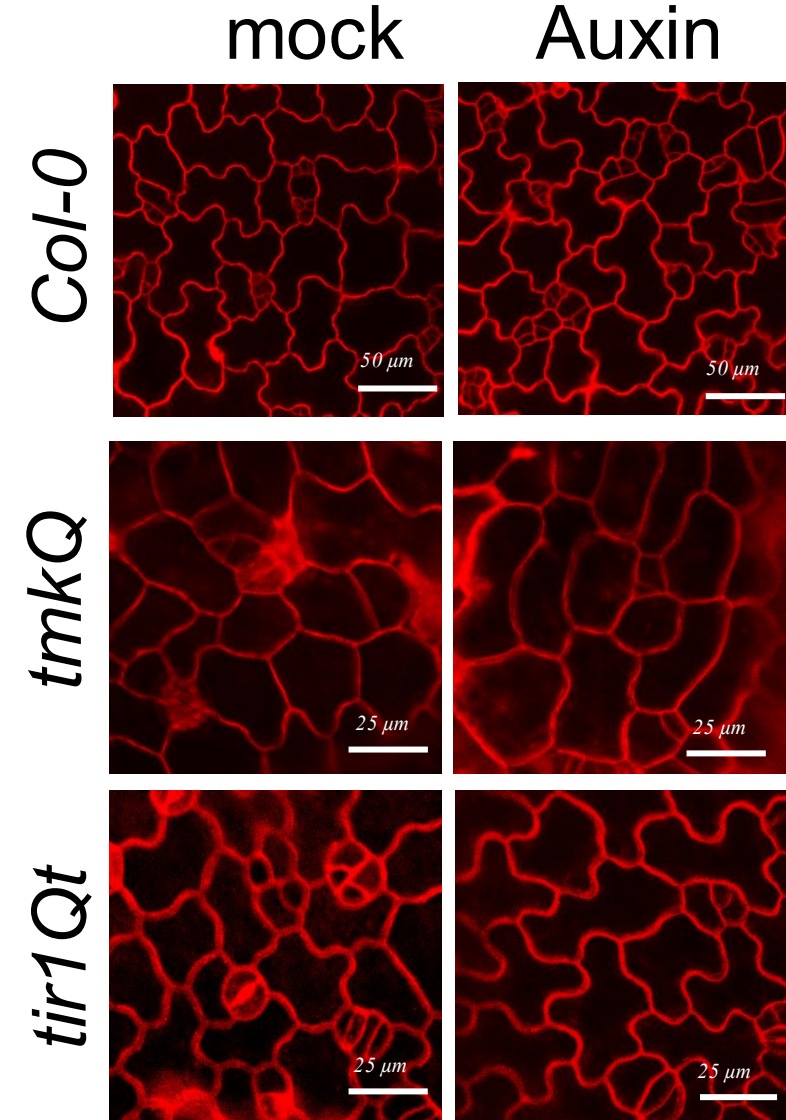


Nuclear  
auxin signaling

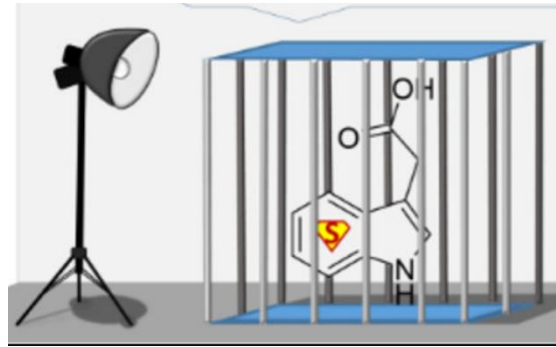
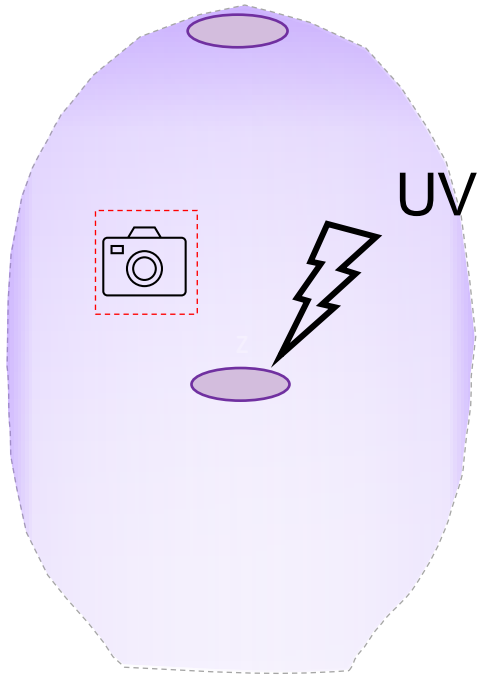


Is there a functional coordination between  
nuclear and surface auxin signaling ?

# Nuclear auxin signaling is involved in interdigitation



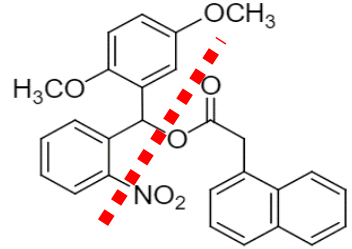
# Caged auxin to produce ectopic auxin maxima



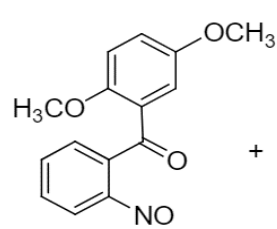
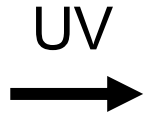
Lights, camera, auxin!

$$\text{Ratio DII / mDII} = \frac{\text{Image 1}}{\text{Image 2}}$$

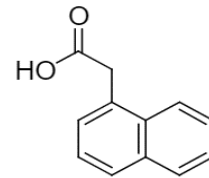
Lower ratio = more auxin



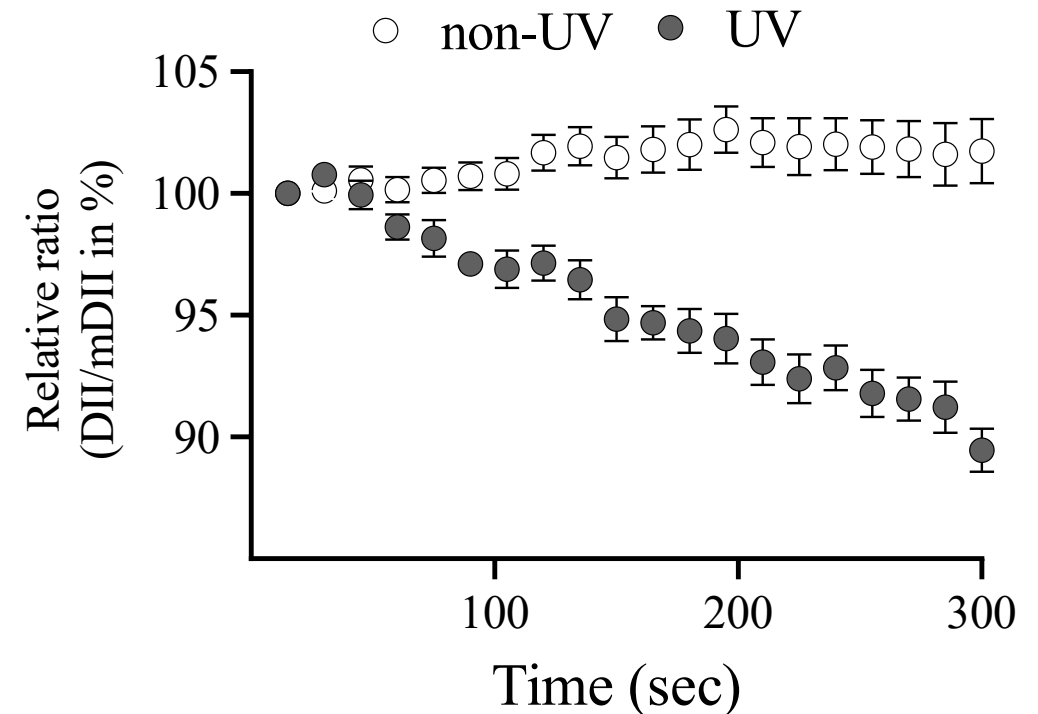
DMPNB-NAA



DMPNB +



uncaged  
NAA

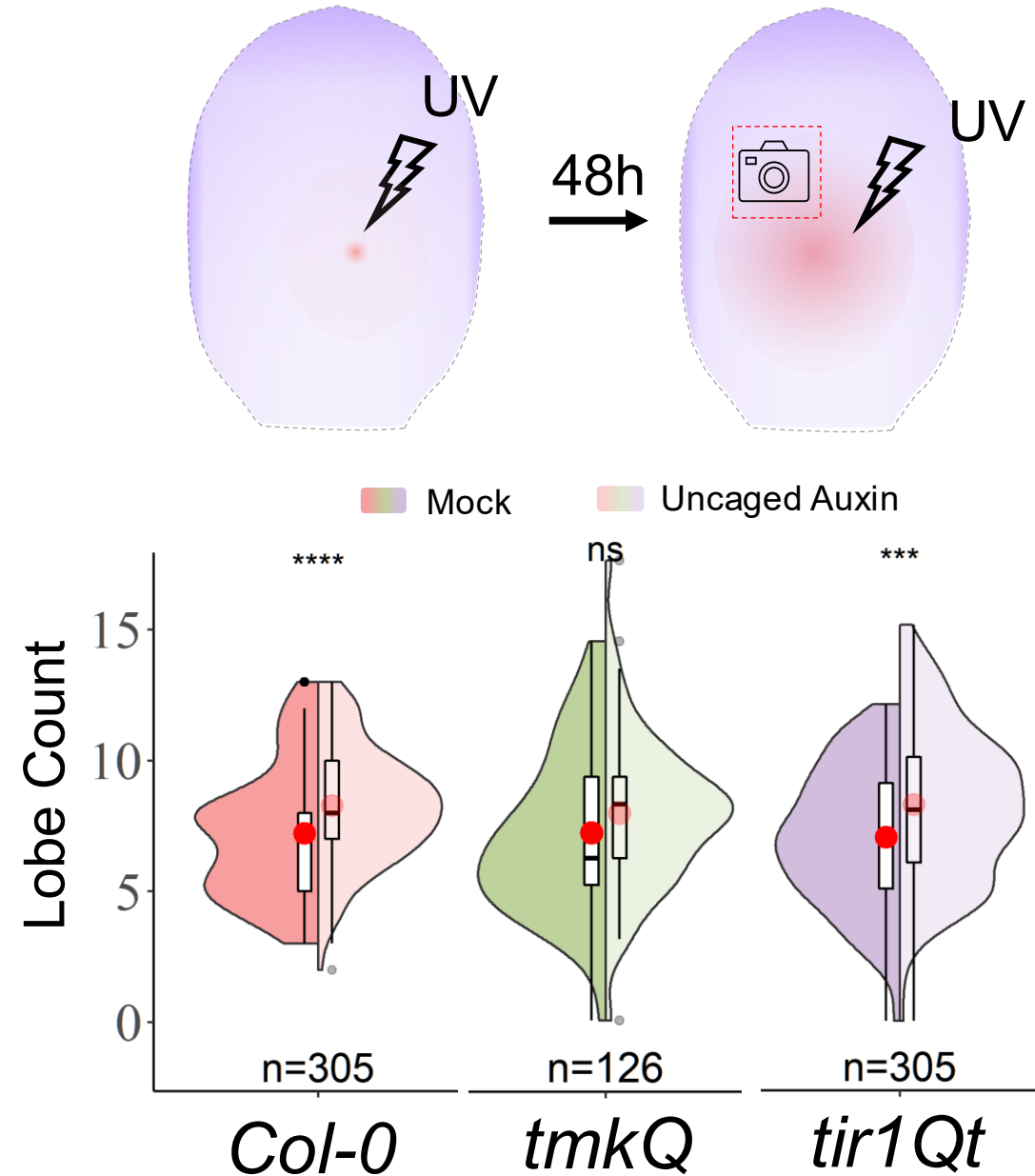
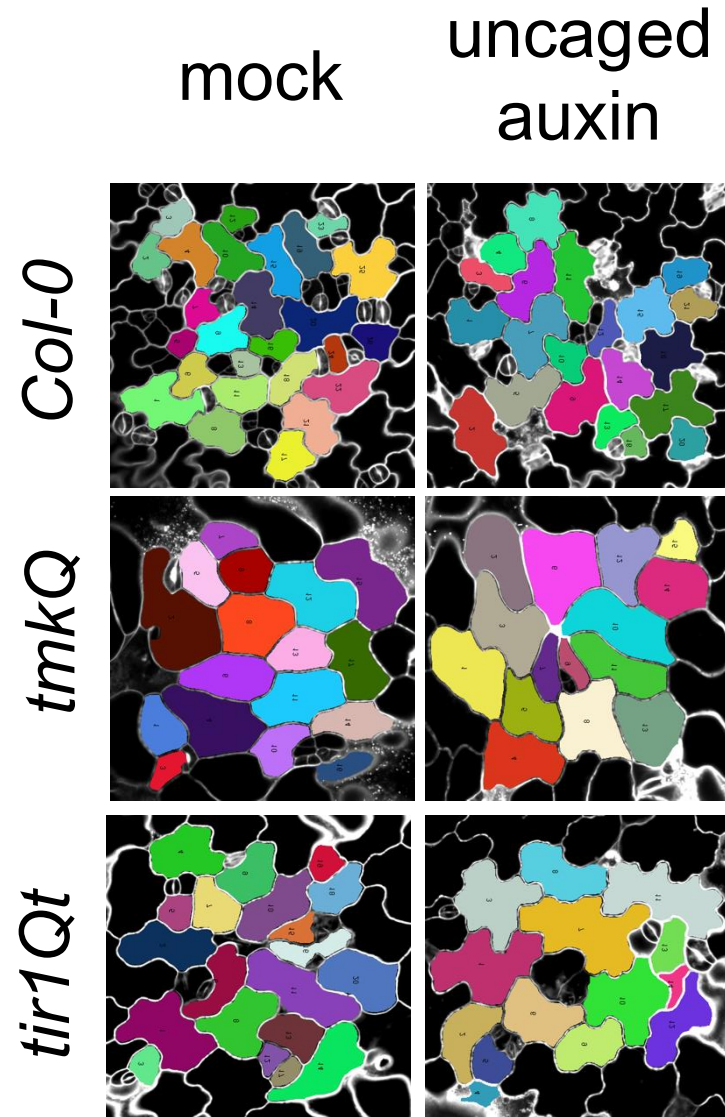


Hayashi et al 2012, ACS chemical biology

Kusaka et al 2009, ChemBioChem

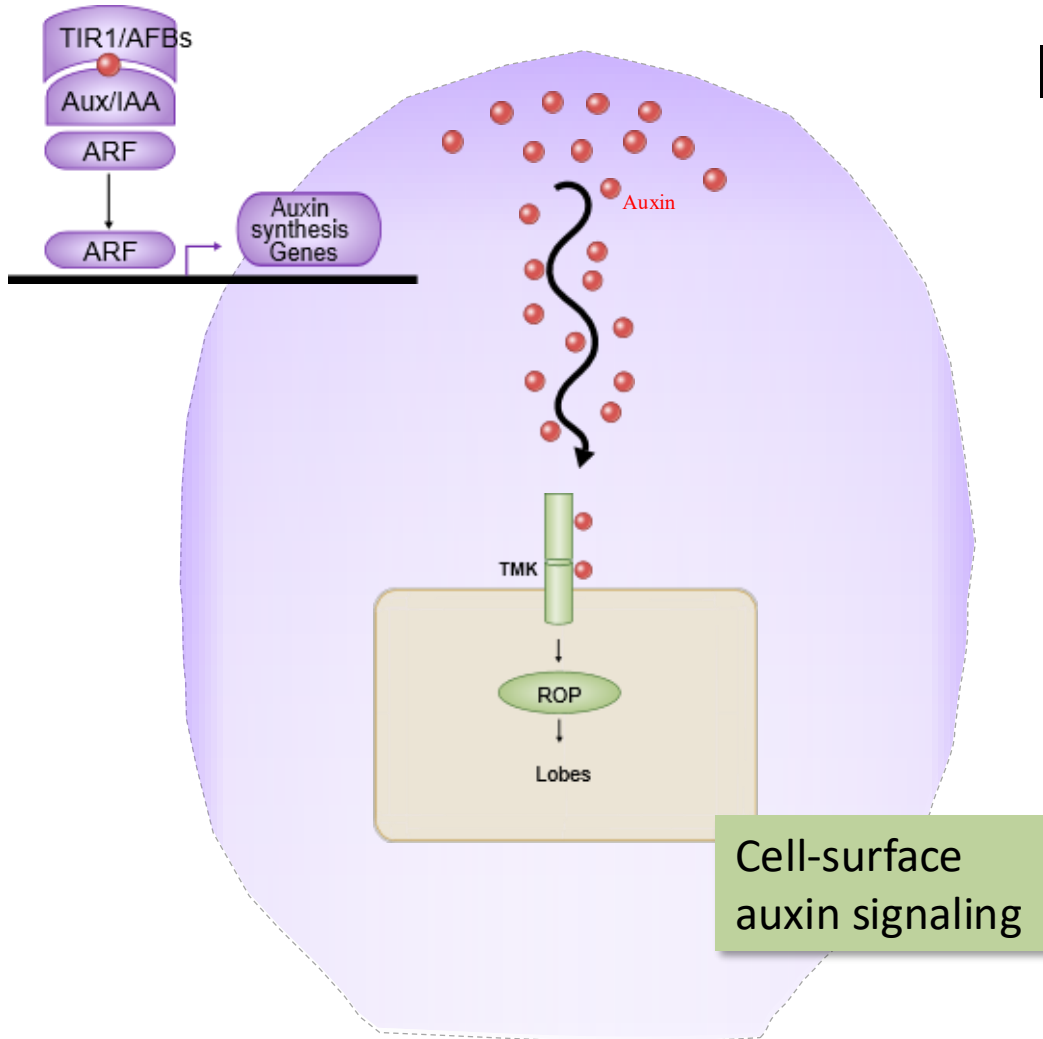
Hemelikova et al (2021) J Agric Food Chem

# Local auxin maxima can globally coordinate interdigitation



# Hierarchical auxin signaling

Nuclear  
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

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Xue Pan

Xiang Zhou

Wenwei Lin

Christian Craddock

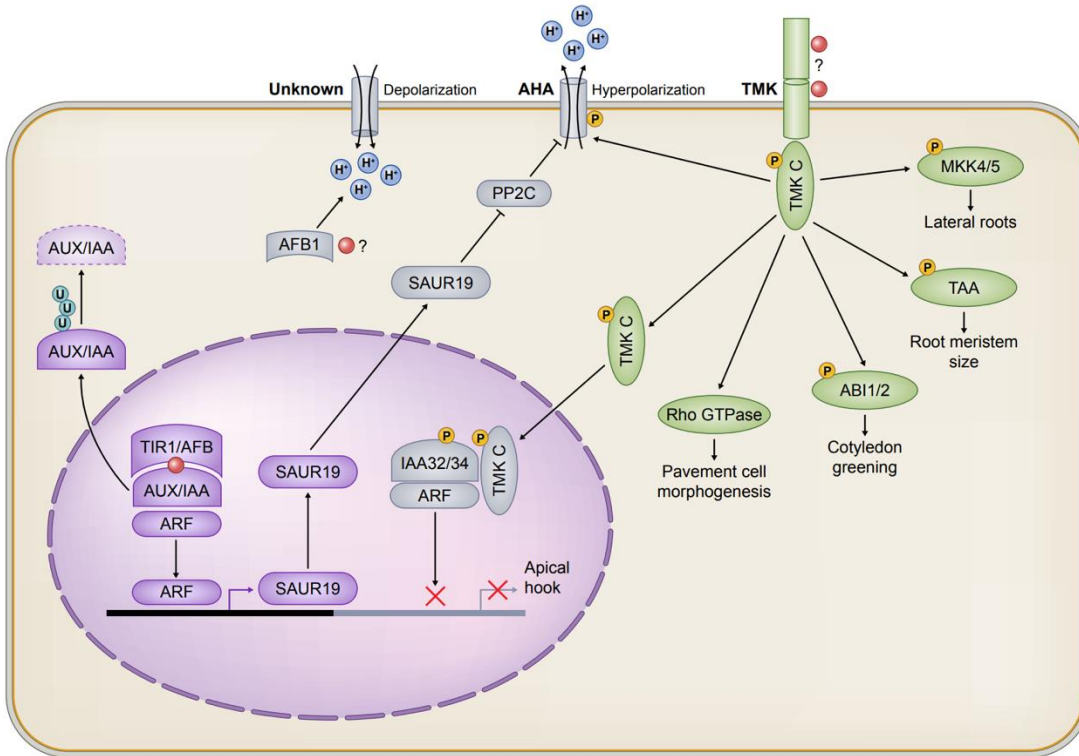
Wenxin Tang

Jingzhe Guo

Jaimie Van Norman

Lucia Strader, Duke U

Ken-Ichiro Hayashi, Okayama U



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

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FAFU-  
UCR  
HBMC



# Auxin signaling

