VORF-7

2025

1

Mark Estelle (1956)

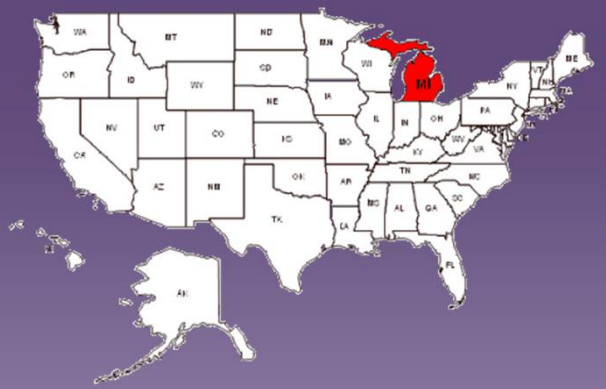
University of California San Diego
Section of Cell and Developmental Biology
Howard Hughes Medical Institute
Muir College, 9500 Gilman Dr. 0116
La Jolla, CA 92093-0116

mestelle@ucsd.edu

http://labs.biology.ucsd.edu/estelle/

- 1978 – University of Alberta, Edmonton (B.S., genetika)
- 1983 – University of Alberta (Ph.D., genetika; regulace genové exprese u *Drosophila*)

- 1983 – 1986 – research associate, Michigan State University, East Lansing, Michigan (laboratoř Ch. Somerville)



- 1986 – 1993 – assistant professor, Dept. of Biology, Indiana University, Bloomington, Indiana

- 1986 – 1999 – fellow (stážista), Indiana Institute for Molecular and Cellular Biology, Indiana

- 1993 – 1999 – associate professor, Department of Biology, Indiana University, Bloomington, Indiana

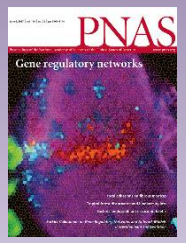
- 1999 – 2002 – D.J. Sibley Professor of Molecular Genetics, Section of Molecular, Cellular and Developmental Biology, University of Texas, Austin, Texas

- 2002 – 2008 – full professor, Carlos Miller Chair of Plant Development Biology, Indiana University, Bloomington, Indiana

- 2008 – dosud – professor, Head of Division of Genetics, Cell and Developmental Biology, Department of Biology, University of California San Diego, CA

- 2008 – 2018 – Distinguished Professor, Section of Cell and Developmental Biology, University of California San Diego, CA
- 2011 – 2018 – Gordon and Betty Moore Foundation investigator, Howard Hughes Medical Institute, La Jolla, CA
- 2019 – dosud – Tata Chancellor's Endowed Professorship VI, Cell and Developmental Biology, University of California San Diego, CA

- Editor časopisu The Plant Cell
- Editor časopisu PNAS (Proceedings of the National Academy of Sciences)



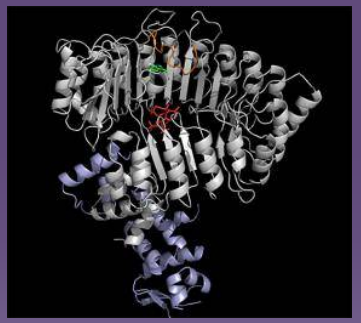
Identifikace auxinového receptoru TIR1 a objasnění molekulárního mechanizmu přenosu auxinového signálu

Intracelulární receptor TIR1 (Transport Inhibitor Response 1) u *Arabidopsis*

Ottoline Leyser
University of Cambridge

Kepinski and Leyser 2005

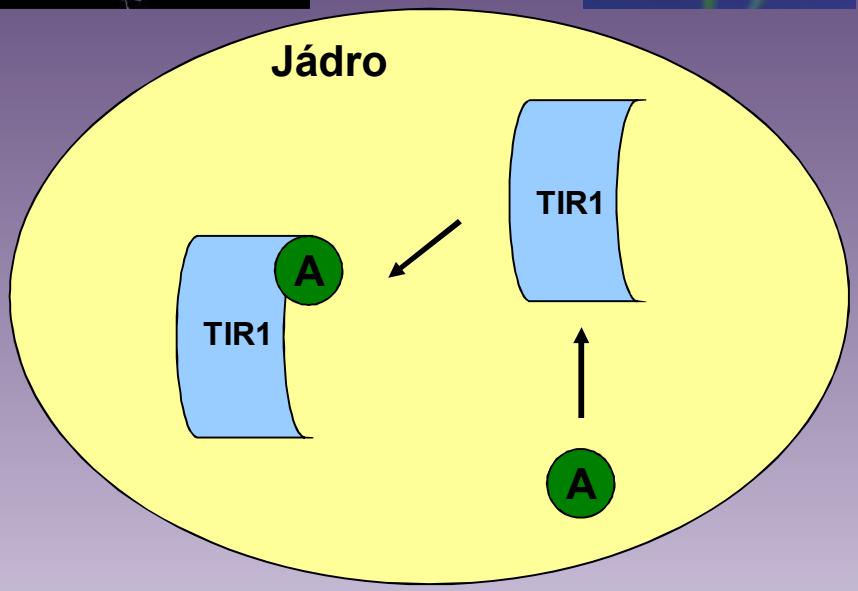
Dharmasiri *et al*. 2005



Auxin se váže v jádře přímo k TIR1.

1) První intracelulární auxinový receptor

2) Receptor zprostředkující transkripční reakce k auxinu



TIR1- zprostředkovaná signalizace auxinu

A – auxin

TIR1 – F-box podjednotka E3-ubiquitin ligázy; auxinový receptor

AUX/IAA – represor transkripce auxinem-indukovaných genů

ARF – transkripční faktor (aktivátor exprese genů)

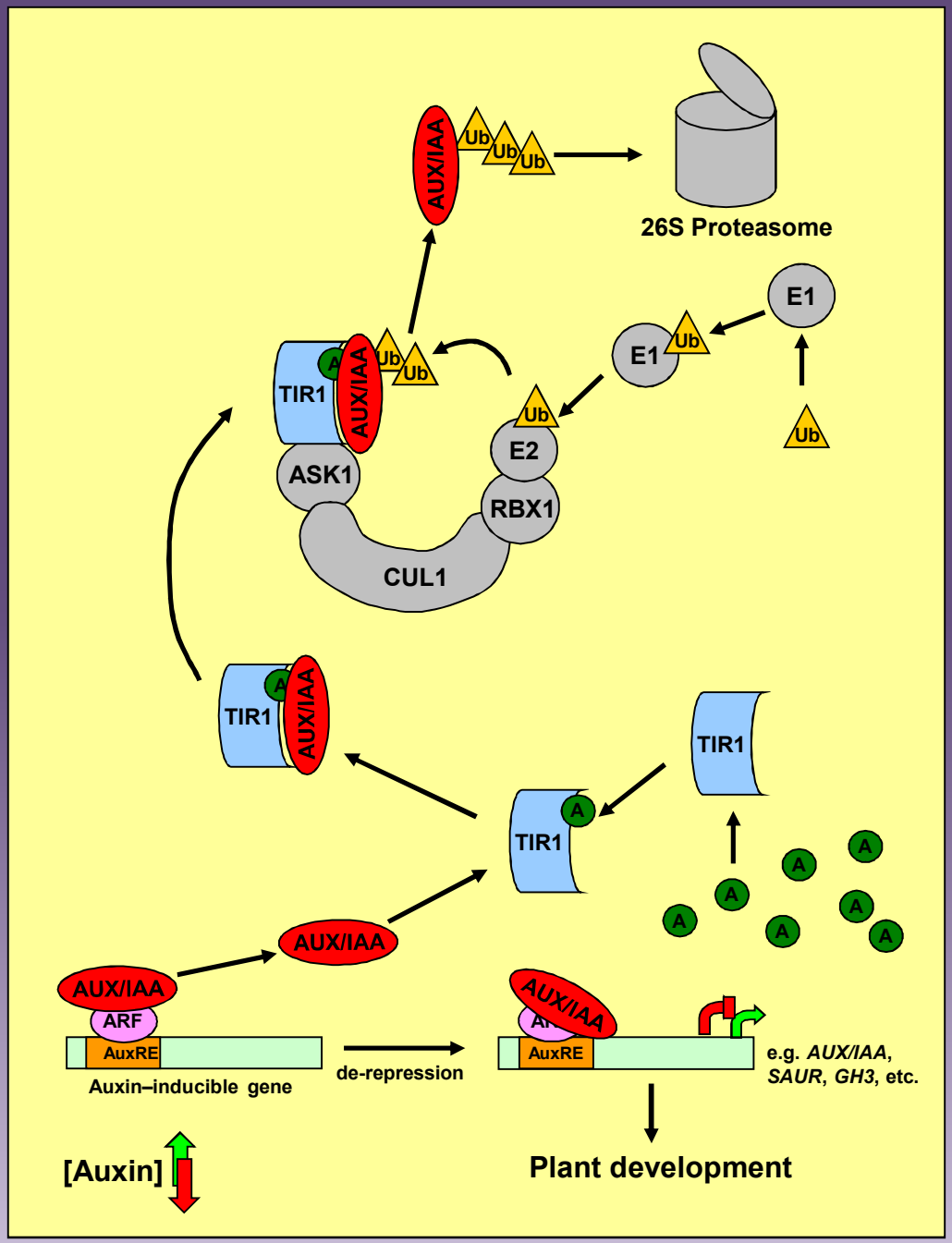
Auxinem-indukované geny obsahují AuxRE = auxin responsivní element

Podobné mechanizmy pro F-box proteiny:

COP1 – CONSTITUTIVE PHOTOMORPHOG. 1

COI – CORONATINE INSENSITVE 1

ZTL – ZEITLUPE, etc.



PNAS | February 17, 2015 | vol. 112 | no. 7 | 2275–2280

Auxin binding protein 1 (ABP1) is not required for either auxin signaling or *Arabidopsis* development

Yangbin Gao[a,1], Yi Zhang[a,b,1], Da Zhang[a,c,1], Xinhua Dai[a], Mark Estelle[a,b,2], and Yunde Zhao[a,2]

[a]Section of Cell and Developmental Biology and [b]Howard Hughes Medical Institute, University of California, San Diego, La Jolla, CA 92093-0116; and [c]College of Life Science, Northeast Agricultural University, Harbin 150030, China

Auxin binding protein 1 (ABP1) has been studied for decades. It has been suggested that ABP1 functions as an auxin receptor and has an essential role in many developmental processes. Here we present our unexpected findings that ABP1 is neither required for auxin signaling nor necessary for plant development under normal growth conditions. We used our ribozyme-based CRISPR technology to generate an *Arabidopsis abp1* mutant that contains a 5-bp deletion in the first exon of *ABP1*, which resulted in a frameshift and introduction of early stop codons. We also identified a T-DNA insertion *abp1* allele that harbors a T-DNA insertion located 27 bp downstream of the ATG start codon in the first exon. We show that the two new *abp1* mutants are null alleles. Surprisingly, our new *abp1* mutant plants do not display any obvious developmental defects. In fact, the mutant plants are indistinguishable from wild-type plants at every developmental stage analyzed. Furthermore, the *abp1* plants are not resistant to exogenous auxin. At the molecular level, we find that the induction of known auxin-regulated genes is similar in both wild-type and *abp1* plants in response to auxin treatments. We conclude that ABP1 is not a key component in auxin signaling or *Arabidopsis* development.

nature plants

BRIEF COMMUNICATION

PUBLISHED: 9 NOVEMBER 2015 | ARTICLE NUMBER: 15183 | DOI: 10.1038/NPLANTS.2015.183

Embryonic lethality of *Arabidopsis abp1-1* is caused by deletion of the adjacent *BSM* gene

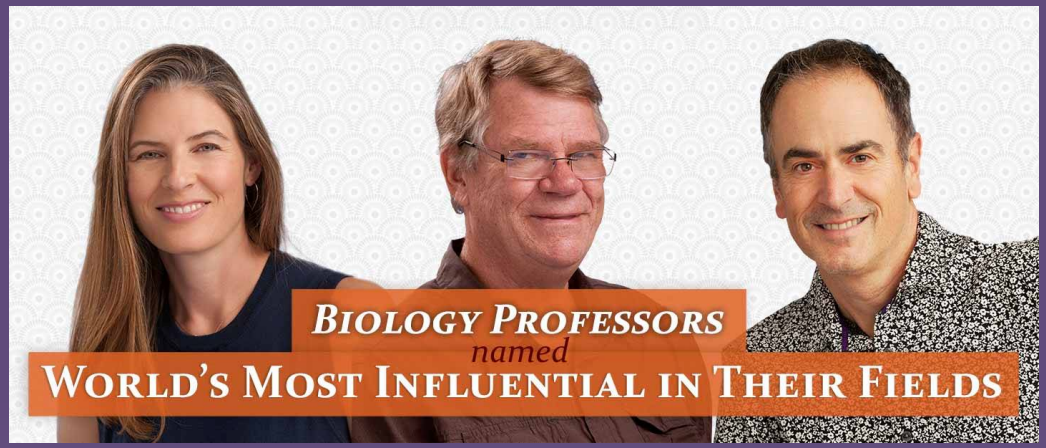
Xinhua Dai[1], Yi Zhang[1,2], Da Zhang[1,3], Jilin Chen[1,4], Xiuhua Gao[1,5], Mark Estelle[1,2] and Yunde Zhao[1]*

Decades of research have suggested that AUXIN BINDING PROTEIN 1 (ABP1) is an essential membrane-associated auxin receptor, but recent findings directly contradict this view. Here we show that embryonic lethality observed in *abp1-1*, which has been a cornerstone of ABP1 studies, is caused by the deletion of the neighbouring *BELAYA SMERT* (*BSM*) gene, not by disruption of *ABP1*. On the basis of our results, we conclude that ABP1 is not essential for *Arabidopsis* development.

Ocenění za biologii

1989 – Department of Biology Teaching Award
1995 – Senior Class Award for Teaching Excellence
2003 – Fellow of the American Association for the Advancement of Science
2006 – Kumho International Science Award in Plant Molecular Biology, Kumho Cultural Foundation of Seoul, Korea ($30,000)
2006 – Keynote Address at 17th International Conference on Arabidopsis Research
2007 – Anton Lang Memorial Lecture, Michigan State University
2007 – Elected to U.S. National Academy of Sciences
2007 – Silver Medal Award for Distinguished Research, International Plant Growth Substance Association
2011 – HHMI Investigator
2011 – Woolhouse Lecture John Innes Center, Norwich UK

2018 – 2017 Highly Cited Researchers, Clarivate Analytics (researchers most influential in their fields) (~ 37 tisíc citací, 224 publikací)



Elsa Cleland Mark Estelle Julian Schroeder

2020 - University of Alberta Alumni Honor Award

2023 - Jmenován ASPB Pioneer Member – člen ASPB, který se výrazně zasloužil o vědeckou výchovu studentů a mladých vědců.

Více než 100 zvaných přednášek na zahraničních univerzitách a vědeckých institucích.

https://www.youtube.com/watch?v=AJ4OY9Jg5Kc

Přednáška o mechanizmech účinků auxinů na růst rostlin

Srpen 2013


University of California, San Diego
Revelle Entrance
Revelle College
NO PED CROSSING
USE CROSSWALK
REVELLE
CHECK-IN


Biology


Biology

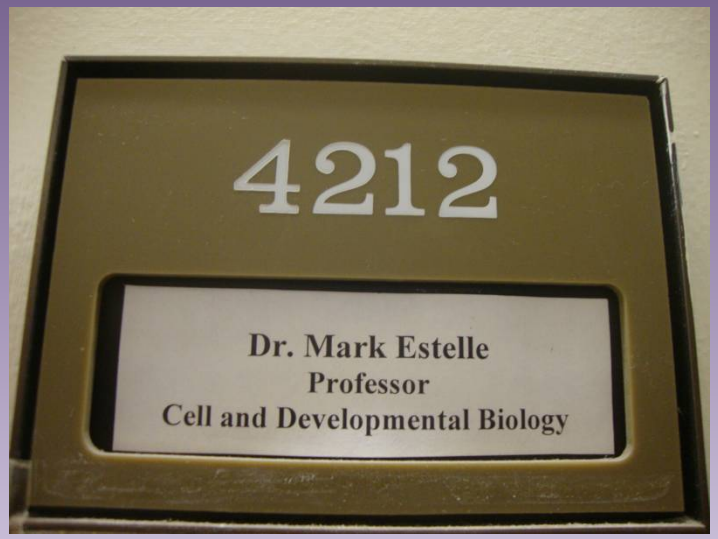

1869
69

San Diego
Bike


Muir
College


Biology


Biology


4212
Dr. Mark Estelle
Professor
Cell and Developmental Biology

Rozhovor s Markem Estellem
v rámci projektu
„Kreativní fyziologie“
na UCSD v La Jolla v srpnu 2013