

# Contents

<b>From Němec and Haberlandt to Plant Molecular Biology . . . . .</b>	<b>1</b>
Zdeněk Opatrný	
<b>Part I Control of Growth and Development</b>	
<b>Why to Spend Tax Money on Plant Microtubules? . . . . .</b>	<b>39</b>
Peter Nick	
<b>Auxin Biology: Applications and the Mechanisms Behind . . . . .</b>	<b>69</b>
Petr Skůpa, Zdeněk Opatrný, and Jan Petrášek	
<b>The Biotechnological Potential of Cytokinin Status Manipulation . . . . .</b>	<b>103</b>
Mária Šmehilová and Lukáš Spíchal	
<b>The Life and Death Signalling Underlying Cell Fate Determination During Somatic Embryogenesis . . . . .</b>	<b>131</b>
Andrei Smertenko and Peter Bozhkov	
<b>Molecular Cell Biology of Pollen Walls . . . . .</b>	<b>179</b>
Yue Lou, Jun Zhu, and Zhongnan Yang	
<b>Part II Stress Tolerance</b>	
<b>Plant Cell Responses to Cadmium and Zinc . . . . .</b>	<b>209</b>
Michal Martinka, Marek Vaculík, and Alexander Lux	
<b>Applied Cell Biology of Sulphur and Selenium in Plants . . . . .</b>	<b>247</b>
M. Sayyar Khan and R. Hell	
<b>Endocytosis: At the Crossroads of Pattern Recognition Immune Receptors and Pathogen Effectors . . . . .</b>	<b>273</b>
Silke Robatzek	

### **Part III Plant Metabolism**

<b>Plant Compounds Acting on the Cytoskeleton . . . . .</b>	<b>301</b>
Einat Sadot	

<b>Secondary Metabolites of Traditional Medical Plants: A Case Study of Ashwagandha (<i>Withania somnifera</i>) . . . . .</b>	<b>325</b>
Neelam S. Sangwan and Rajender Singh Sangwan	

<b>Metabolic Engineering of Wood Formation . . . . .</b>	<b>369</b>
Armin Wagner and Lloyd Donaldson	

### **Part IV The Cell Biology Toolbox: New Approaches**

<b>Flow Cytometry in Plant Research: A Success Story . . . . .</b>	<b>395</b>
Jan Vrána, Petr Čápal, Martina Bednářová, and Jaroslav Doležel	

<b>Photo-Convertible Reporters for Selective Visualization of Subcellular Events and Interactions . . . . .</b>	<b>431</b>
Kiah Barton, Alena Mammone, and Jaideep Mathur	

<b>Plant Cell Strains in Fundamental Research and Applications . . . . .</b>	<b>455</b>
Zdeněk Opatrný, Peter Nick, and Jan Petrášek	

Applied Plant Cell Biology

Cellular Tools and Approaches for Plant Biotechnology

Nick, P.; Opatrny, Z. (Eds.)

2014, XIV, 481 p. 48 illus., 26 illus. in color., Hardcover

ISBN: 978-3-642-41786-3