
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>ix</i>
PART I UBIQUITIN CONJUGATION AND DECONJUGATION ANALYSIS	
1 Approaches to Determine Protein Ubiquitination Residue Types. <i>Qian Chen, Xiaoyuan Yang, and Qi Xie</i>	3
2 Immunoprecipitation of Cullin-Ring Ligases (CRLs) in <i>Arabidopsis thaliana</i> Seedlings. <i>Anna Franciosini and Giovanna Serino</i>	11
3 Radioligand Binding Assays for Determining Dissociation Constants of Phytohormone Receptors <i>Antje Hellmuth and Luz Irina A. Calderón Villalobos</i>	23
4 Measuring the Enzyme Activity of Arabidopsis Deubiquitylating Enzymes. <i>Kamila Kalinowska, Marie-Kristin Nagel, and Erika Isono</i>	35
5 Fluorescent Reporters for Ubiquitin-Dependent Proteolysis in Plants <i>Katarzyna Zientara-Rytter and Agnieszka Sirko</i>	45
6 Generation of Artificial N-end Rule Substrate Proteins In Vivo and In Vitro <i>Christin Naumann, Augustin C. Mot, and Nico Dissmeyer</i>	55
7 Peptide Arrays for Binding Studies of E3 Ubiquitin Ligases. <i>Maria Klecker and Nico Dissmeyer</i>	85
PART II UBIQUITIN-LIKE PROTEIN CONJUGATION, DECONJUGATION, AND CELL IMAGING STUDIES	
8 SUMO Chain Formation by Plant Enzymes <i>Konstantin Tomanov, Ionida Ziba, and Andreas Bachmair</i>	97
9 Kinetic Analysis of Plant SUMO Conjugation Machinery <i>Laura Castaño-Miquel and L. Maria Lois</i>	107
10 Expression, Purification, and Enzymatic Analysis of Plant SUMO Proteases <i>Gary Yates, Anjil Srivastava, Beatriz Orosa, and Ari Sadanandom</i>	125
11 Quantitative Analysis of Subcellular Distribution of the SUMO Conjugation System by Confocal Microscopy Imaging <i>Abraham Mas, Montse Amenós, and L. Maria Lois</i>	135
12 Biochemical Analysis of Autophagy in Algae and Plants by Monitoring the Electrophoretic Mobility of ATG8 <i>María Esther Pérez-Pérez, Ascensión Andrés-Garrido, and José L. Crespo</i>	151

13	Detection of Autophagy in Plants by Fluorescence Microscopy	161
	<i>Yunting Pu and Diane C. Bassham</i>	

PART III PROTEOMIC ANALYSIS AND OTHER POST-TRANSLATIONAL MODIFICATION STUDIES

14	Protocols for Studying Protein Stability in an Arabidopsis Protoplast Transient Expression System.	175
	<i>S��verine Planchais, Laurent Camborde, and Isabelle Jupin</i>	
15	Detection and Quantification of Protein Aggregates in Plants	195
	<i>Marc Planas-Marqu��s, Saul Lema A., and N��ria S. Coll</i>	
16	Determination of Protein Carbonylation and Proteasome Activity in Seeds	205
	<i>Qiong Xia, Hayat El-Maarouf-Bouteau, Christophe Bailly, and Patrice Meimoun</i>	
17	Isobaric Tag for Relative and Absolute Quantitation (iTRAQ)-Based Protein Profiling in Plants	213
	<i>Isabel Cristina V��lez-Berm��dez, Tuan-Nan Wen, Ping Lan, and Wolfgang Schmidt</i>	
18	Use of a Phosphatidylinositol Phosphate Affinity Chromatography (PIP Chromatography) for the Isolation of Proteins Involved in Protein Quality Control and Proteostasis Mechanisms in Plants.	223
	<i>T. Farmaki</i>	
19	In Vivo Radiolabeling of <i>Arabidopsis</i> Chloroplast Proteins and Separation of Thylakoid Membrane Complexes by Blue Native PAGE.	233
	<i>Catharina Nickel, Thomas Brylok, and Serena Schwenkert</i>	
20	Normalized Quantitative Western Blotting Based on Standardized Fluorescent Labeling.	247
	<i>Frederik Faden, Lennart Eschen-Lippold, and Nico Dissmeyer</i>	

PART IV BIOINFORMATICS ANALYSIS

21	Sequence Search and Comparative Genomic Analysis of SUMO-Activating Enzymes Using CoGe.	261
	<i>Lorenzo Carretero-Paulet and Victor A. Albert</i>	
22	Studying Evolutionary Dynamics of Gene Families Encoding SUMO-Activating Enzymes with SeaView and ProtTest	273
	<i>Lorenzo Carretero-Paulet and Victor A. Albert</i>	
23	Bioinformatics Tools for Exploring the SUMO Gene Network	285
	<i>Pedro Humberto Castro, Miguel ��ngelo Santos, Alexandre Papadopoulos Magalh��es, Rui Manuel Tavares, and Herl��nder Azevedo</i>	

<i>Index</i>	303
------------------------	-----

Plant Proteostasis

Methods and Protocols

Lois, L.M.; Matthiesen, R. (Eds.)

2016, XI, 307 p. 73 illus., 40 illus. in color., Hardcover

ISBN: 978-1-4939-3757-8

A product of Humana Press