

CONTENTS

Contributors

ix

1. New Insights on Thylakoid Biogenesis in Plant Cells	1
Olivier Bastien, César Botella, Florian Chevalier, Maryse A. Block, Juliette Jouhet, Christelle Breton, Agnès Girard-Egrot, Eric Maréchal	
1. Introduction	2
2. Overview of Metabolic Pathways for Thylakoid Lipid Synthesis	6
3. Production and Flux of Phospholipid-Derived Intermediates in Galactolipid Synthesis	12
4. Biophysical Role of Galactolipids in (Early) Thylakoids	16
5. Conclusions and Outlook	22
Acknowledgments	24
References	24
2. Tailoring Grain Storage Reserves for a Healthier Rice Diet and its Comparative Status with Other Cereals	31
Vito M. Butardo Jr., Nese Sreenivasulu	
1. Introduction	32
2. Elevating Dietary Fiber	36
3. Reducing Grain Digestibility	45
4. Increasing Protein Content and Enhancing Essential Amino Acid Composition	51
5. The Role of Aleurone as a Nutritious Layer	55
6. Conclusions and Future Outlook	57
Acknowledgments	59
References	60
3. Recent Advances in Molecular Mechanisms of Taste Signaling and Modifying	71
Noriatsu Shigemura, Yuzo Ninomiya	
1. Introduction	73
2. Functions and Molecular Markers of Taste Cells	75

3. Neurotransmitters From Taste Cells to Gustatory Nerves	85
4. Humoral Factors to Modulate Taste Sensitivity	90
5. Concluding Remarks	95
Acknowledgments	95
References	96
4. Regulation of Notch Signaling Through Intracellular Transport	107
Sean D. Conner	
1. Introduction	108
2. Notch Internalization	109
3. Endosome Entry	113
4. Notch Recycling	114
5. Notch Degradation Within Lysosomes	116
6. Deltex: Critical Determinant in Endosomal Transport Decisions	119
7. Concluding Remarks	120
Acknowledgments	121
References	121
5. Retromer in Polarized Protein Transport	129
Marcel Vergés	
1. Introduction	130
2. Retromer and Vesicular Transport	132
3. Retromer Biology	135
4. Protein Transport by Retromer in Polarized Cells	141
5. Retromer in Neurodegenerative Disease	158
6. Concluding Remarks	165
Acknowledgments	166
References	166
6. New Insights Into the Mechanism of COP9 Signalosome– Cullin-RING Ubiquitin-Ligase Pathway Deregulation in Urological Cancers	181
Linda Gummlich, Thilo Kähne, Michael Naumann, Ergin Kilic, Klaus Jung, Wolfgang Dubiel	
1. Introduction	183
2. CSN–CRL Pathway	185
3. CSN–CRL Pathway in Urological Cancers	190

4. Identification and Characterization of Two Point Mutations of p27 ^{Kip1} , Substrate of CSN-CRL Pathway	196
5. Occurrence of p27 ^{Kip1} V109G and p27 ^{Kip1} I119 T in Cancer	204
6. Concluding Remarks	217
Acknowledgments	219
References	219
7. Dual Protein Localization to the Envelope and Thylakoid Membranes Within the Chloroplast	231
Laura Klasek, Kentaro Inoue	
1. Introduction	232
2. Suborganellar Compartments of Chloroplasts	233
3. Mechanisms of Protein Targeting to and Within the Chloroplast	235
4. Proteins Localized in the Envelope and Thylakoids	239
5. Functions of Proteins Localized in the Envelope and Thylakoids	244
6. Potential Mechanisms for Localization of a Single Gene Product to the Envelope and Thylakoid Membranes	252
7. Concluding Remarks	255
Acknowledgments	256
References	256
<i>Index</i>	265