
Contents

<i>Foreword</i>	<i>vii</i>
<i>Preface</i>	<i>ix</i>
<i>Contributors</i>	<i>xv</i>

PART I REVIEWS ON GENERAL TOPICS

1 A Comparison of In Vitro and In Vivo Asexual Embryogenesis	3
<i>Melanie L. Hand, Sacco de Vries, and Anna M.G. Koltunow</i>	
2 Somatic Versus Zygotic Embryogenesis: Learning from Seeds	25
<i>Traud Winkelmann</i>	
3 Recent Advances on Genetic and Physiological Bases of In Vitro Somatic Embryo Formation	47
<i>Maria Maddalena Altamura, Federica Della Rovere, Laura Fattorini, Simone D'Angeli, and Giuseppina Falasca</i>	
4 Do Mitochondria Play a Central Role in Stress-Induced Somatic Embryogenesis?	87
<i>Birgit Arnholdt-Schmitt, Carla Ragonezi, and Hélia Cardoso</i>	
5 Dying with Style: Death Decision in Plant Embryogenesis.	101
<i>Shuanglong Huang, Mohamed M. Mira, and Claudio Stasolla</i>	
6 Somatic Embryogenesis in Broad-Leaf Woody Plants: What We Can Learn from Proteomics	117
<i>Sandra I. Correia, Ana C. Alves, Paula Veríssimo, and Jorge M. Canhoto</i>	
7 Advances in Conifer Somatic Embryogenesis Since Year 2000	131
<i>Krystyna Klimaszewska, Catherine Hargreaves, Marie-Anne Lelu-Walter, and Jean-François Trontin</i>	
8 Molecular Aspects of Conifer Zygotic and Somatic Embryo Development: A Review of Genome-Wide Approaches and Recent Insights	167
<i>Jean-François Trontin, Krystyna Klimaszewska, Alexandre Morel, Catherine Hargreaves, and Marie-Anne Lelu-Walter</i>	
9 Androgenesis in Solanaceae	209
<i>Jose M. Seguí-Simarro</i>	
10 Bioreactors for Plant Embryogenesis and Beyond	245
<i>Liwen Fei and Pamela Weathers</i>	

PART II PROTOCOLS OF SOMATIC EMBRYOGENESIS IN SELECTED IMPORTANT HORTICULTURAL PLANTS

11 Somatic Embryogenesis and Genetic Modification of <i>Vitis</i>	263
<i>Sadanand A. Dhekney, Zhijian T. Li, Trudi N.L. Grant, and Dennis J. Gray</i>	

12	Somatic Embryogenesis in Peach-Palm (<i>Bactris gasipaes</i>) Using Different Explant Sources	279
	<i>Douglas A. Steinmacher, Angelo Schuabb Heringer, Víctor M. Jiménez, Marguerite G.G. Quoirin, and Miguel P. Guerra</i>	
13	Somatic Embryogenesis: Still a Relevant Technique in Citrus Improvement	289
	<i>Abmad A. Omar, Manjul Dutt, Frederick G. Gmitter, and Jude W. Grosser</i>	
14	Somatic Embryogenesis Induction and Plant Regeneration in Strawberry Tree (<i>Arbutus unedo</i> L.)	329
	<i>João F. Martins, Sandra I. Correia, and Jorge M. Canhoto</i>	
15	Somatic Embryogenesis in Olive (<i>Olea europaea</i> L. subsp. <i>europaea</i> var. <i>sativa</i> and var. <i>sylvestris</i>)	341
	<i>Eddo Rugini and Cristian Silvestri</i>	
16	Somatic Embryogenesis in <i>Crocus sativus</i> L.	351
	<i>Basar Sevindik and Yesim Yalcin Mendi</i>	
17	Somatic Embryogenesis in Lisianthus (<i>Eustoma russellianum</i> Griseb.)	359
	<i>Barbara Ruffoni and Laura Bassolino</i>	
18	Somatic Embryogenesis in Two Orchid Genera (<i>Cymbidium</i> , <i>Dendrobium</i>)	371
	<i>Jaime A. Teixeira da Silva and Budi Winarto</i>	
19	Somatic Embryogenesis of <i>Lilium</i> from Microbulb Transverse Thin Cell Layers	387
	<i>Pablo Marinangeli</i>	
20	Somatic Embryogenesis and Plant Regeneration of <i>Brachiaria brizantha</i>	395
	<i>Glaucia B. Cabral, Vera T.C. Carneiro, Diva M.A. Dusi, and Adriana P. Martinelli</i>	
PART III PROTOCOLS OF SOMATIC EMBRYOGENESIS IN SELECTED FOREST TREES		
21	Somatic Embryogenesis in <i>Pinus</i> spp.	405
	<i>Itziar Aurora Montalbán, Olatz García-Mendiguren, and Paloma Moncaleán</i>	
22	Somatic Embryogenesis of <i>Abies cephalonica</i> Loud.	417
	<i>Jana Kraňáková and Hely Häggman</i>	
23	Somatic Embryogenesis in Horse Chestnut (<i>Aesculus hippocastanum</i> L.)	431
	<i>Maurizio Capuana</i>	
24	Somatic Embryogenesis in <i>Araucaria angustifolia</i> (Bertol.) Kuntze (Araucariaceae)	439
	<i>Miguel P. Guerra, Neusa Steiner, Francine L. Farias-Soares, Leila do N. Vieira, Hugo P.F. Fraga, Gladys D. Rogge-Renner, and Sara B. Maldonado</i>	

PART IV PROTOCOLS OF GAMETIC EMBRYOGENESIS IN SELECTED HIGHER PLANTS

25	Anther Culture in Eggplant (<i>Solanum melongena</i> L.)	453
	<i>Giuseppe Leonardo Rotino</i>	
26	Anther Culture in Pepper (<i>Capsicum annuum</i> L.)	467
	<i>Verónica Parra-Vega and Jose M. Seguí-Simarro</i>	
27	Microspore Embryogenesis Through Anther Culture in <i>Citrus clementina</i> Hort. ex Tan.	475
	<i>Benedetta Chiancone and Maria Antonietta Germanà</i>	

PART V STEPWISE PROTOCOLS ON PIVOTAL TOPICS

28	Detection of Epigenetic Modifications During Microspore Embryogenesis: Analysis of DNA Methylation Patterns Dynamics	491
	<i>Pilar S. Testillano and María Carmen Risueño</i>	
29	Embryogenesis and Plant Regeneration from Isolated Wheat Zygotes	503
	<i>Jochen Kumlehn</i>	
30	From Somatic Embryo to Synthetic Seed in <i>Citrus</i> spp. Through the Encapsulation Technology	515
	<i>Maurizio Micheli and Alvaro Standardi</i>	
31	From Stress to Embryos: Some of the Problems for Induction and Maturation of Somatic Embryos	523
	<i>Sergio J. Ochatt and Maria Angeles Revilla</i>	
32	Cryotechniques for the Long-Term Conservation of Embryogenic Cultures from Woody Plants	537
	<i>Elif Aylin Ozudogru and Maurizio Lambardi</i>	
	<i>Index</i>	553

In Vitro Embryogenesis in Higher Plants

Germanà, M.A.; Lambardi, M. (Eds.)

2016, XVIII, 558 p. 69 illus., 66 illus. in color., Hardcover

ISBN: 978-1-4939-3060-9

A product of Humana Press