

Contents

Part I Developmental Aspects of Cardiac Adaptation

1	Comparative Aspects of Cardiac Adaptation	3
	Bohuslav Ostadal	
2	Molecular Mechanisms of Cardiac Development	19
	Patricia Roche, Michael P. Czubryt and Jeffrey T. Wagle	
3	Prenatal Adaptations to Overload	41
	Zivorad Pesevski and David Sedmera	
4	Hypoxia and Mechanical Factors Drive Coronary Vascular Development	59
	Robert J. Tomanek	
5	Cardiac Metabolic Adaptation During Postnatal Development . . .	79
	Jérôme Piquereau, Marta Novotova, Anne Garnier, Frédéric Joubert, Vladimir Veksler and Renée Ventura-Clapier	
6	Ontogenetic Aspects of Cardiac Adaptation to Chronic Hypoxia	99
	Bohuslav Ostadal, Ivana Ostadalova, Zuzana Charvatova and Frantisek Kolar	
7	Heart and Arterial Aging	111
	Paul D. Chantler and Edward G. Lakatta	

Part II Cardiac Adaptations to Overload

8	Differences in Concentric Cardiac Hypertrophy and Eccentric Hypertrophy.	147
	Alison L. Müller and Naranjan S. Dhalla	
9	Cardiac Adaptation to Volume Overload.	167
	Vojtech Melenovsky	
10	Functional Adaptation During the Development of Cardiac Hypertrophy and Heart Failure in Females	201
	Melissa R. Dent, Vijayan Elimban, Amrit Malik, Paramjit S. Tappia and Naranjan S. Dhalla	
11	Impact of Gender and Exercise on Cardiac Adaptation to Pathological Situations: Sex Hormones, Exercise and Cardiac Adaptation	213
	Feriel Azibani, Claude Delcayre and Jane-lise Samuel	
12	Cardiopulmonary Adaptation to High Altitude	233
	Jean-Paul Richalet	
13	Cardiac Hypertrophy in Hypertension	251
	Jaroslav Kuneš, Ivana Vaněčková, Michaela Kadlecová, Michal Behuliak, Zdenka Dobešová and Josef Zicha	
14	Exercise Training and Adverse Cardiac Remodeling and Dysfunction in Mice.	269
	Dirk J. Duncker, Elza D. van Deel, Monique C. de Waard and Jolanda van der Velden	
15	The Athlete's Heart	289
	Aaron L. Baggish	

Part III Molecular and Cellular Aspects of Cardiac Adaptations

16	Role of β-Adrenoceptor/Adenylyl Cyclase System in Cardiac Hypertrophy	305
	Adriana Adameova, Paramjit S. Tappia and Naranjan S. Dhalla	
17	Role of Phospholipase C in the α_1-Adrenoceptor Mediated Cardiac Hypertrophy	325
	Paramjit S. Tappia, Adriana Adameova and Naranjan S. Dhalla	

18 Cardiac Remodeling in the Hypertrophic Heart: Signal-Dependent Regulation of the Fibrotic Gene Program by CLP-1	341
Michael Wagner and M. A. Q. Siddiqui	
19 Role of Sirtuins in Regulation of Cardiac Adaptation Associated with Hypertrophy	361
Vinodkumar B. Pillai and Mahesh P. Gupta	
20 Adaptation of Cardiac and Skeletal Muscle Mitochondria to Endurance Training: Implications for Cardiac Protection	375
Enn Seppet, Ehte Orlova, Teet Seene and Frank N. Gellerich	
21 Adenosine as an Endogenous Adaptive Cardiac Antihypertrophic and Antiremodelling Factor	403
Morris Karmazyn and Xiaohong Tracey Gan	
22 Myocardial Adaptation and Autophagy	415
Dipak K. Das and Hannah R. Vasanthi	
23 Modulatory Role of VEGF in Angiogenesis for Cell Survival	433
Dipti Gatne, Veeranjanyulu Addepalli and Dev D. Santani	
24 The Role of CaM Kinase II in Cardiac Function in Health and Disease	447
Adriana Adameova, Adrian Szobi, Slavka Carnicka, Tanya Ravingerova and Tomas Rajtik	
Index	463

Cardiac Adaptations

Molecular Mechanisms

Ostadal, B.; Dhalla, N.S. (Eds.)

2013, XVIII, 466 p., Hardcover

ISBN: 978-1-4614-5202-7