

Contents

Part I Biochemistry, Molecular Biology, Metabolism and Physiology

1 Introduction	3
Nathan S. Bryan and Joseph Loscalzo	
2 From Atmospheric Nitrogen to Bioactive Nitrogen Oxides	11
Mark Gilchrist and Nigel Benjamin	
3 Nitrate-Reducing Oral Bacteria: Linking Oral and Systemic Health	21
Nathan S. Bryan and Joseph F. Petrosino	
4 Epigenetics and the Regulation of Nitric Oxide	33
Diane E. Handy and Joseph Loscalzo	
5 The Mitochondrion: A Physiological Target of Nitrite	53
Danielle A. Guimaraes, Chris Reyes, and Sruti Shiva	
6 Sources of Exposure to Nitrogen Oxides	69
Andrew L. Milkowski	

Part II Food and Environmental Exposures to Nitrite and Nitrate

7 History of Nitrite and Nitrate in Food	85
Jimmy T. Keeton	
8 Nutritional Epidemiology of Nitrogen Oxides: What do the Numbers Mean?	99
Martin Lajous and Walter C. Willett	
9 Nutritional Impact on the Nitric Oxide Pathway	111
Wing Tak Wong and John P. Cooke	
10 Dietary Flavonoids as Modulators of NO Bioavailability in Acute and Chronic Cardiovascular Diseases	129
Matthias Totzeck and Tienush Rassaf	
11 Nitrite and Nitrate in Human Breast Milk: Implications for Development	141
Pamela D. Berens and Nathan S. Bryan	

12 Regulation of Dietary Nitrate and Nitrite: Balancing Essential Physiological Roles with Potential Health Risks.....	153
Norman G. Hord and Melissa N. Conley	
 Part III Nitrite and Nitrate in Therapeutics and Disease	
13 Nitric Oxide Signaling in Health and Disease	165
Nathan S. Bryan and Jack R. Lancaster Jr.	
14 Inhaled Nitric Oxide	179
Kenneth D. Bloch, Andrea U. Steinbicker, Lisa Lohmeyer, and Rajeev Malhotra	
15 Pharmacology of Nitrovasodilators.....	195
Thomas Münzel and Andreas Daiber	
16 Nitrite and Nitrate in Ischemia–Reperfusion Injury	217
David J. Lefer, Nathan S. Bryan, and Chelsea L. Organ	
17 Nitrite and Nitrate as a Treatment for Hypertension	235
Vikas Kapil	
18 Nitrate and Nitrite in Aging and Age-Related Disease.....	259
Lawrence C. Johnson, Allison E. DeVan, Jamie N. Justice, and Douglas R. Seals	
19 The Nitrate–Nitrite–Nitric Oxide Pathway in Traditional Herbal Medicine and Dietary Supplements with Potential Benefits for Cardiovascular Diseases	279
Yong-Jian Geng	
20 Nitrate in Exercise Performance.....	293
Stephen J. Bailey, Anni Vanhatalo, and Andrew M. Jones	
21 Nitrite and Nitrate in Cancer.....	311
David M. Klurfield	
22 Looking Forward	325
Nathan S. Bryan and Joseph Loscalzo	
Index.....	337

Nitrite and Nitrate in Human Health and Disease

Bryan, N.S.; Loscalzo, J. (Eds.)

2017, XXXI, 349 p. 48 illus., 35 illus. in color., Hardcover

ISBN: 978-3-319-46187-8

A product of Humana Press