
Contents

Part I Biochemistry, Molecular Biology and Chemistry

H₂S Synthesizing Enzymes: Biochemistry and Molecular Aspects	3
Caleb Weihao Huang and Philip Keith Moore	

Part II Molecular Mechanisms of Action

Persulfidation (S-sulfhydration) and H₂S	29
Milos R. Filipovic	
Physiological Roles of Hydrogen Sulfide and Polysulfides	61
Hideo Kimura	

Part III Cardiovascular and Urogenital Systems

H₂S and Blood Vessels: An Overview	85
Guangdong Yang and Rui Wang	
Hydrogen Sulfide and Urogenital Tract	111
Roberta d’Emmanuele di Villa Bianca, Giuseppe Cirino, and Raffaella Sorrentino	
H₂S Is a Promoter of Angiogenesis: Identification of H₂S “Receptors” and Its Molecular Switches in Vascular Endothelial Cells	137
Bei-Bei Tao, Wen-Jie Cai, and Yi-Chun Zhu	
Hydrogen Sulfide and Platelets: A Possible Role in Thrombosis	153
Michael Emerson	

Part IV Inflammation and Inflammatory Disease

H₂S and Inflammation: An Overview	165
Madhav Bhatia	

Hydrogen Sulfide and Neuroinflammation	181
Kotaro Kida and Fumito Ichinose	
 Part V H₂S and the Nervous System	
Brain, Learning, and Memory: Role of H₂S in Neurodegenerative Diseases	193
B.V. Nagpure and Jin-Song Bian	
H₂S and Pain: A Novel Aspect for Processing of Somatic, Visceral and Neuropathic Pain Signals	217
Yuka Terada and Atsufumi Kawabata	
 Part VI H₂S, Angiogenesis and Cancer	
Hydrogen Sulfide and Cancer	233
Mark R. Hellmich and Csaba Szabo	
Role of H₂S Donors in Cancer Biology	243
Zheng-Wei Lee and Lih-Wen Deng	
 Part VII H₂S and Ageing	
H₂S: A New Approach to Lifespan Enhancement and Healthy Ageing?	269
Bedoor Qabazard and Stephen R. Stürzenbaum	
 Part VIII H₂S, Measurement and Possible Therapeutics?	
Fluorescent Probes for H₂S Detection and Quantification	291
Wei Feng and Brian W. Dymock	
The Pharmacological Effects of S-Propargyl-Cysteine, a Novel Endogenous H₂S-Producing Compound	325
Ya-Dan Wen and Yi-Zhun Zhu	
Phosphinodithioate and Phosphoramidodithioate Hydrogen Sulfide Donors	337
Matthew Whiteman, Alexis Perry, Zongmin Zhou, Mariarosaria Bucci, Andreas Papapetropoulos, Guiseppe Cirino, and Mark E. Wood	
Medicinal Chemistry: Insights into the Development of Novel H₂S Donors	365
Yu Zhao, Armando Pacheco, and Ming Xian	
Index	389

Chemistry, Biochemistry and Pharmacology of Hydrogen
Sulfide

Moore, P.K.; Whiteman, M. (Eds.)

2015, VI, 395 p. 172 illus., 27 illus. in color., Hardcover

ISBN: 978-3-319-18143-1