

CONTENTS

Preface	v
Contributors	ix
Color Plates	xi
I. CLASS I HISTONE DEACETYLASES	
1 Histone Deacetylase 1 <i>Dominique Meunier and Christian Seiser</i>	3
2 Biochemistry of Multiprotein HDAC Complexes <i>Alejandro Vaquero, Michael Scher, and Danny Reinberg</i>	23
3 The Biology of HDAC3 <i>Edward Seto</i>	61
4 The Biology of HDAC8, a Unique Class I Histone Deacetylase <i>David Waltregny and Vincent Castronovo</i>	87
II. CLASS II HISTONE DEACETYLASES	
5 Regulation of Muscle Gene Expression by Histone Deacetylases <i>Timothy A. McKinsey and Eric N. Olson</i>	107
6 The Class IIa Histone Deacetylases: <i>Functions and Regulation</i> <i>Herbert G. Kasler and Eric Verdin</i>	129
7 Histone Deacetylases in the Response to Misfolded Proteins <i>J. Andrew McKee and Tso-Pang Yao</i>	165
III. CLASS III HISTONE DEACETYLASES	
8 Evolution of Sirtuins From Archaea to Vertebrates <i>Roy A. Frye</i>	183
9 Structure of the Sir2 Family of NAD ⁺ -Dependent Histone/Protein Deacetylases <i>Kehao Zhao and Ronen Marmorstein</i>	203
10 The Enzymology of SIR2 Proteins <i>Margie T. Borra and John M. Denu</i>	219
11 The Class III Protein Deacetylases: <i>Homologs of Yeast Sir2p</i> <i>Bjoern Schwer, Brian J. North, Nidhi Ahuja, Brett Marshall,</i> <i>and Eric Verdin</i>	237

IV. HISTONE DEACETYLASE INHIBITORS

12	HDAC Inhibitors: <i>Discovery, Development, and Clinical Impacts</i> <i>Akihiro Ito, Norikazu Nishino, and Minoru Yoshida</i>	271
13	Cell Cycle Targets of Histone Deacetylase Inhibitors <i>Brian Gabrielli</i>	299
14	HDAC Inhibitors: <i>An Emerging Anticancer Therapeutic Strategy</i> <i>Paul Kwon, Meier Hsu, Dalia Cohen, and Peter Atadja</i>	315
	Index	333