

Contents

Part I Bone Toxicology in Preclinical Drug Testing

- 1 Introduction and Considerations in Bone Toxicology** 3
Susan Y. Smith, Nancy Doyle, and Melanie Felx
- 2 Bone Physiology and Biology** 27
Jürg Andreas Gasser and Michaela Kneissel
- 3 Specific Considerations for Bone Evaluations for Pediatric
Therapeutics** 95
Keith Robinson
- 4 Animal Models in Bone Research** 129
Donald B. Kimmel

Part II Methods in Bone Research

- 5 Biochemical Markers of Bone Turnover** 175
Susan Y. Smith and Rana Samadfam
- 6 Skeletal Imaging** 203
Aurore Varela
- 7 Biomechanics** 229
Angela S.P. Lin, Gabrielle Boyd, Aurore Varela,
and Robert E. Guldberg
- 8 Application of Histopathology and Bone Histomorphometry
for Understanding Test Article-Related Bone Changes
and Assessing Potential Bone Liabilities.** 253
Reinhold G. Erben, Jacquelin Jolette, Luc Chouinard,
and Rogely Boyce

Part III Bone as an Endocrine Organ

9 Bone and Muscle	281
Chenglin Mo, Zhiying Wang, Lynda Bonewald, and Marco Brotto	
10 Pituitary Hormone-Driven Mechanism for Skeletal Loss	317
Tony Yuen, Li Sun, Wahid Abu-Amer, Peng Liu, Terry F. Davies, Harry C. Blair, Maria New, Alberta Zallone, and Mone Zaidi	
11 Kidney–Bone: Interaction	335
Olena V. Andrukhova and Reinhold G. Erben	
12 Bone and the Immune System	363
M. Neale Weitzmann	
13 Bone and the Central Nervous System	399
Rishikesh N. Kulkarni and Paul A. Baldock	
14 Intestinal Microbiota and Bone Health: The Role of Prebiotics, Probiotics, and Diet	417
Fraser L. Collins, Soon Mi Kim, Laura R. McCabe, and Connie M. Weaver	
15 Bone and Energy Metabolism	445
Clifford J. Rosen	
Index	465

Bone Toxicology

Smith, S.Y.; Varela, A.; Samadfam, R. (Eds.)

2017, XII, 474 p. 72 illus., 63 illus. in color., Hardcover

ISBN: 978-3-319-56190-5