Contents

1 **Mechanisms of Molecular Recognition: Structural Characteristics of Transthyretin Ligand Interactions** 1
Vivian Cody and Andrzej Wojtczak

2 **Transthyretin Synthesis During Development and Evolution: What the Marsupials Revealed** 23
Samantha J. Richardson

3 **Evolution of Transthyretin Gene Structure** 45
Porntip Prapunpoj

4 **Evolutionary Insights from Fish Transthyretin** 59
Deborah M. Power, Isabel Morgado, and João C.R. Cardoso

5 **The *Salmonella* sp. TLP: A Periplasmic 5-Hydroxyisourate Hydrolase** 77
Sarah Hennebry

6 **Vertebrate 5-Hydroxyisourate Hydrolase Identification, Function, Structure, and Evolutionary Relationship with Transthyretin** 95
Giuseppe Zanotti, Ileana Ramazzina, Laura Cendron, Claudia Folli, Riccardo Percudani, and Rodolfo Berni

7 **Transthyretin-Related and Transthyretin-like Proteins** 109
A. Elisabeth Sauer-Eriksson, Anna Linusson, and Erik Lundberg

8 **The Transthyretin–Retinol-Binding Protein Complex** 123
Hugo L. Monaco

9 **Transthyretin and Retinol-Binding Protein: Implications in Fish Physiology** 143
Sancia Gaetani and Diana Bellovino

10 Transthyretin and Endocrine Disruptors 159
Kiyoshi Yamauchi and Akinori Ishihara

11 Genetics: Clinical Implications of Transthyretin Amyloidosis 173
Merrill D. Benson

12 Molecular Pathogenesis Associated with Familial Amyloidotic Polyneuropathy 191
Maria João Saraiva

13 Histidine 31: The Achilles' Heel of Human Transthyretin. Microheterogeneity is Not Enough to Understand the Molecular Causes of Amyloidogenicity 201
Klaus Altland and Samantha J. Richardson

14 New Therapeutic Approaches for Familial Amyloidotic Polyneuropathy (FAP) 215
Yukio Ando, Masaaki Nakamura, Mistuharu Ueda, and Hirofumi Jono

15 Liver Transplantation for Transthyretin Amyloidosis 239
Bo-Goran Ericzon, Erik Lundgren, and Ole B. Suhr

16 Mouse Models of Transthyretin Amyloidosis 261
Sadahiro Itoand Shuichiro Maeda

17 What Have We Learned from Transthyretin-Null Mice: Novel Functions for Transthyretin? 281
João Carlos Sousa and Joana Almeida Palha

18 Transthyretin Null Mice: Developmental Phenotypes 297
Julie A. Monk and Samantha J. Richardson

19 Transthyretin Null Mice as a Model to Study the Involvement of Transthyretin in Neurobiology: From Neuropeptide Processing to Nerve Regeneration 311
Carolina Estima Fleming, Ana Filipa Nunes, Márcia Almeida Liz, and Mónica Mendes Sousa

20 Plasma Transthyretin Reflects the Fluctuations of Lean Body Mass in Health and Disease 329
Yves Ingenbleek

Index 359