Contents

Preface ..... *iii*

1. **Pathogenic Role of Repeat Polypeptides in Repeat Expansion Diseases** 1
Yuzo Fujino and Yoshitaka Nagai

2. **Pathologies Due to PolyQ Sequences** 22
Raffaella Parlato and Patrick C.A. van der Wel

3. **Importance of Surface Hydrophobic Clusters in Proteins** 43
Fabio C.L. Almeida, Ramon Pinheiro-Aguiar and Ariana Azevedo Vasconcelos

4. **Residue Cluster Classes in Protein-Protein Interactions** 63
Juan Martín Hernández Castillo, Albros Hermes Poot and Gabriel Del Río

5. **Aromatic Clusters in Proteins: Folding, Drug Interactions and Protein-Protein Complexes** 80
Esteban Lanzarotti, Lucas Defelipe, Marcelo Marti and Adrian Turjanski

6. **Cell Penetrating Peptides with Repeat Sequences of Amino Acids** 96
Ngoc Hai Trieu Phong, Mohammed A. Kamal, Duy Binh Tran and Tohru Yamada

7. **Recent Advances and Applications in Self-Assembling Short-Chain Elastin-Like Peptide Analogs** 123
Takeru Nose and Keitaro Suyama

8. **Unconventional Fluorescence Properties of Non-aromatic Amino Acids: Material and Biological Applications** 147
Vishnu N. Vijayan, Karthika Kannan and Sushabhan Sadhukhan

Index 171