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| Nota di contenuto | Protein Degradation; Contents; Preface; List of Contributors; 1 Brief History of Protein Degradation and the Ubiquitin System; 1.1 Introductory Remarks; 1.2 Protein Degradation - Does It Exist?; 1.3 Discovery of the Role of Ubiquitin in Protein Degradation; 1.4 Identification of Enzymes of the Ubiquitin-mediated Proteolytic System; 1.5 Discovery of Some Basic Cellular Functions of the Ubiquitin System; 1.6 Concluding Remarks; References; 2 N-terminal Ubiquitination: No Longer Such a Rare Modification; Abstract; 2.1 Background; 2.2 Results; 2.3 Discussion; Acknowledgments; References<br>3 Evolutionary Origin of the Activation Step During Ubiquitin-dependent Protein DegradationAbbreviations; Abstract; 3.1 Introduction; 3.1.1 Activation of Ubiquitin and Ubiquitin-like Proteins; 3.1.2 Molybdenum Cofactor Biosynthesis; 3.2 The Crystal Structure of MoaD Reveals the Ubiquitin Fold; 3.3 Structural Studies of the MoeB-MoaD Complex; 3.3.1 Structure of MoeB; 3.3.2 The MoeB-MoaD |

Interface; 3.3.3 Structure of MoeB-MoaD with Bound ATP; 3.3.4 Structure of the MoaD Adenylate; 3.3.5 Fate of the Adenylate; 3.4 Structure of the NEDD8 Activator; 3.4.1 Overall Structure of the NEDD8-E1
3.4.2 Comparison with the MoaD-MoeB Complex3.4.3 Conformational Changes during the Formation of the Acyl Adenylate; Summary; Acknowledgments; References; 4 RING Fingers and Relatives: Determinators of Protein Fate; 4.1 Introduction and Overview; 4.1.1 Historical Perspective; 4.2 RING Fingers as E3s; 4.2.1 General Considerations; 4.2.2 Structural Analysis and Structure-Function Relationships; 4.2.2.1 RING finger-E2 Interactions; 4.2.3 Other Protein-Protein Interaction Motifs in RING finger Proteins; 4.2.4 Variations on the RING Finger; 4.2.5 High-order Structure of RINGs - TRIMs
4.3 RING Fingers in Cell Signaling4.3.1 Siahs; 4.3.2 IAPs; 4.3.3 TRAFs; 4.3.4 Cbls; 4.4 Multi RING finger Proteins; 4.4.1 Mindbomb and TRIADs; 4.4.2 Parkin and Parkinson's Disease; 4.4.2.1 Parkin Substrates; 4.4.2.2 Parkin Animal Models; 4.4.2.3 Possible Pathogenic Mechanisms in ARJP; 4.5 Regulation of p53 by Mdm2 and other RING finger Proteins; 4.5.1 Mdm2; 4.5.2 Pirh2; 4.5.3 MdmX; 4.5.4 Arf and Other Modulators of Mdm2 Activity; 4.5.5 Other Potential Mdm2 Substrates; 4.5.6 Mdm2 and Therapeutic Intervention in Cancer; 4.6 Conclusion - Perspective; Acknowledgments; References
5 Ubiquitin-conjugating Enzymes5.1 Introduction; 5.2 Historical Background; 5.3 What is an E2?; 5.4 Functional Diversity of Ubiquitin-conjugating Enzymes; 5.4.1 Functions Related to Proteasome Proteolysis; 5.4.2 Endocytosis and Trafficking; 5.4.3 Non-proteolytic Functions; 5.4.4 E2s of Uncertain Function; 5.4.5 E2 Enzymes and Disease; 5.5 E2 Enzymes Dedicated to Ubiquitin-like Proteins (UbLs); 5.6 The Biochemistry of E2 Enzymes; 5.6.1 E1 Interaction; 5.6.2 Interactions with Thiol-linked Ubiquitin; 5.6.3 E3 Interactions; 5.6.3.1 RING E3/E2 Interactions; 5.6.3.2 U-box E3/E2 Interactions
5.6.3.3 HECT E3/E2 Interactions

Sommario/riassunto

The first volume in a new series dedicated to protein degradation, this book lays the foundations of targeted protein breakdown via the ubiquitin pathway.The outstanding importance of the ubiquitin pathway has been recognized with the 2004 Nobel Prize in Chemistry for Aaaron Chiechanover, Avram Hershko, and Irwin Rose. Aaron Ciechanover is one of the editors of this series,and Avram Hershko has contributed to the opening chapter of the present volume.Drawing on the the expertise of two Nobel prize winners, this handy reference compiles information on the initial steps of the ubiqui