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Nota di contenuto	Part I: Global View of the Chaperone Network -- Analysis of Chaperone Network Throughput -- Part II: Chaperones at the Ribosome -- Functions of Ribosome-associated Chaperones and Their Interaction Network -- Part III: The Hsp 70 and Hsp40 Chaperone Networks -- Yeast Hsp70 and J-protein Chaperones: Function and Interaction Network -- The Chaperone Networks: An Hsp70 Perspective -- Part IV: The Hsp90 Chaperone Network -- The Interaction Network of the Hsp90 Molecular Chaperone -- A Global View of the Proteome Perturbations by Hsp90 Inhibitors -- Designing Drugs Against Hsp90 for Cancer Therapy -- The Candida albicans Hsp90 Chaperone Network is Environmentally Flexible and Evolutionarily Divergent -- Part V: The p23 Chaperone Network -- Emergence and Characterization of the p23 Molecular Chaperone -- Part VI: Chaperones in the ER: Function and Interaction Network -- Chaperones of the ERAD Pathway -- Chaperones and Proteases of Mitochondria: From Protein Folding and

Degradation to Mitophagy -- Part VII: The Ubiquitin-Proteasome System Network -- The Biogenesis of the Eukaryotic Proteasome -- Systems-wide Analysis of Protein Ubiquitylation: We Finally Have the Tiger by the Tail -- Part VIII: The Chaperone and Protease Networks in Model Bacteria and Parasites -- The Interaction Networks of E. coli Chaperones -- Chaperone-Proteases of Mycobacteria -- The Interaction Networks of Hsp70 and Hsp90 in the Plasmodium and Leishmania Parasites -- Index. .

Sommario/riassunto

Molecular chaperones are a fundamental group of proteins that have been identified only relatively recently. They are key components of a protein quality machinery in the cell which insures that the folding process of any newly-synthesized polypeptide chain results in the formation of a properly folded protein and that the folded protein is maintained in an active conformation throughout its functional lifetime. Molecular chaperones have been shown to play essential roles in cell viability under both normal and stress conditions. Chaperones can also assist in the unfolding and degradation of misfolded proteins and in disaggregating preformed protein aggregates. Chaperones are also involved in other cellular functions including protein translocation across membranes, vesicle fusion events, and protein secretion. In recent years, tremendous advances have been made in our understanding of the biology, biochemistry, and biophysics of function of molecular chaperones. In addition, recent technical developments in the fields of proteomics and genomics allowed us to obtain a global view of chaperone interaction networks. Finally, there is now a growing interest in the role of molecular chaperones in diseases. This book will provide a comprehensive analysis of the structure and function of the diverse systems of molecular chaperones and their role in cell stress responses and in diseases from a global network perspective. .