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Nota di contenuto	Preface: Dedication to Susan Lindquist -- Part I: Structure -- Structural and Biochemical properties of Hsp40/Hsp70 chaperone system -- The TRiC/CCT chaperonin and its role in uncontrolled proliferation -- Regulation of Hsf1 and the heat shock response -- Part II: Function -- Challenging proteostasis: Role of the chaperone network to control aggregation-prone proteins in human disease -- The multifaceted role of HSF1 in tumorigenesis -- Chaperome networks – redundancy and implications for cancer treatment -- Chaperones in the tumor microenvironment -- The impact of the ER unfolded protein response

on cancer initiation and progression: Therapeutic implications -- Part III: Therapies -- The right tool for the job: an overview of Hsp90 inhibitors -- Lessons learned from proteasome inhibitors, the paradigm for targeting protein homeostasis in cancer -- Reflections and outlook on targeting HSP90, HSP70 and HSF1 in cancer: A personal perspective.

Sommario/riassunto

Protein homeostasis, or “Proteostasis”, lies at the heart of human health and disease. From the folding of single polypeptide chains into functional proteins, to the regulation of intracellular signaling pathways, to the secreted signals that coordinate cells in tissues and throughout the body, the proteostasis network operates to support cell health and physiological fitness. However, cancer cells also hijack the proteostasis network and many of these same processes to sustain the growth and spread of tumors. The chapters in this book are written by world experts in the many facets of the proteostasis network. They describe cutting-edge insights into the structure and function of the major chaperone and degradation systems in healthy cells and how these systems are co-opted in cancer cells and the cells of the tumor microenvironment. The chapters also cover therapeutic interventions such as the FDA-approved proteasome inhibitors Velcade and Kryptolis as well as other therapies currently under clinical investigation to disarm the ability of the proteostasis network to support malignancy. This compendium is the first of its kind and aims to serve as a reference manual for active investigators and a primer for newcomers to the field. This book is dedicated to the memory of Susan Lindquist, a pioneer of the proteostasis field and a champion of the power of basic scientific inquiry to unlock the mechanisms of human disease. The chapter “Reflections and Outlook on Targeting HSP90, HSP70 and HSF1 in Cancer: A Personal Perspective” is available open access under a Creative Commons Attribution 4.0 International License via link. springer.com.
