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## Biomedicine : Human Genetics

Mendillo, M.L., Pincus, D., Scherz-Shouval, R. (Eds.)

# HSF1 and Molecular Chaperones in Biology and Cancer

- This volume details how the proteostasis network– the systems of the cell that synthesize, fold, and degrade cellular proteins– functions to impact the tumor ecosystem
- Brings together an extraordinary group of basic, clinical, and translational scientists to discuss aspects of proteostasis networks in cancer ranging from structure through function to therapeutic applications
- Readers will learn the molecular properties of the major proteostasis systems, how these systems function to impact cancer, and the promise of targeting these systems as an anti-cancer therapeutic strategy

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 Krypolis 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.

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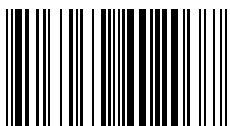
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