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The Ubiquitin-Proteasome Proteolytic System

From Classical Biochemistry to Human Diseases



Ubiquitin-proteasome-dependent proteolysis is central to an incredible multitude of processes in all eukaryotes, including the cell cycle, cell growth and differentiation, embryogenesis, apoptosis, signal transduction, DNA repair, regulation of transcription and DNA replication, transmembrane transport, endocytosis, stress responses, antigen presentation and other aspects of the immune response, the functions of the nervous system including circadian rhythms, axon guidance and acquisition of memory.

This book tells the story of the ubiquitin system as we currently know it: from the regulation of basic cellular

processes to quality control and the pathogenetic mechanisms of disease, from

X-ray crystallography of the 26S proteasome to the interaction between substrates and their ligases, to the development of mechanism-based drugs, and to target-specific aberrant processes.

