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2.4.2.1 Formation and Induction2.4.2.2 Fusion; 2.4.2.3 Purification of Autophagosomes from Rat Liver; 2.4.2.4 Inhibition of Autophagy; 2.4.2.5 Common Questions; 2.4.3 Summary and Outlook; References; 3 Transgenic Models of Autophagy; 3.1 Molecular Mechanism of Mammalian Autophagy; 3.1.1 Atg12 Conjugation System; 3.1.2 Atg8/Microtubule-associated Protein 1 Light Chain 3 (LC3) Conjugation System; 3.1.3 Class III Phosphatidylinositol-3-kinase (PI3K) Complex; 3.1.4 Atg1 Kinase Complex; 3.1.5 Other Factors; 3.2 Autophagy Indicator Mice: Green Fluorescent Protein (GFP)-LC3 Transgenic Mice 3.3 Mouse Models Deficient for Autophagy-related Genes3.3.1 Atg5-deficient Mice; 3.3.2 Atg7-deficient Mice; 3.3.3 Beclin 1-deficient Mice; 3.4 Concluding Remarks; References; 4 Autophagy in Disease and Aging; 4.1 Introduction; 4.2 Autophagy in Neurodegenerative Disorders; 4.2.1 Protein Misfolding and Aggregation; 4.2.2 Parkinson's Disease; 4.2.3 Alzheimer's Disease; 4.2.4 Huntington's Disease; 4.2.5 Prion Diseases; 4.2.6 Niemann-Pick Type C; 4.3 Autophagy and Cancer; 4.3.1 Proteolysis of long-lived Proteins and Effect of Nutrient Deprivation in Cancer Cells
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4.8 Concluding Remarks and Pending Questions

Sommario/riassunto

This first book to cover this new topic at the interface of cell biology, immunology and infection biology offers a unique insight as to how the innate and possibly the adaptive immune system are shaped by cellular mechanisms. Following a comprehensive introduction to autophagy, the work features cellular mechanisms and medical implications, structured according to all major pathogens, while also covering emerging infectious diseases, such as tuberculosis. Edited by one of the authors of a groundbreaking paper on this topic.