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Mechanistic Aspects; 2.7 A Kinase in Need of Control; 2.7.1 Constitutively Active or Inactive?; 2.7.2 A Potential Mediator of Sphingosine Signaling; 2.7.3 Fam20c as a Novel Regulator of Blood Phosphate Homeostasis; 2.7.4 Does it Make Sense to Develop Fam20C Inhibitors?; 2.8 Outlook; Funding; References; Chapter 3 Chemical Biology of Protein Kinases; 3.1 The Basis of Chemical Genetics
4.2.2 Caspase-Dependent Intrinsic Apoptosis3.2 Protein Kinase Chemical Genetics; 3.3 Applications for AS Kinases; 3.3.1 Substrate Identification: General Phosphoproteomics; 3.3.2 Substrate Identification: Refinements through the Use of AS Kinases; 3.3.3 Substrate Identification in Action: What Have We Learned?; 3.3.4 Use of Specific Inhibitors for AS Kinases; 3.4 Current Challenges; 3.5 Conclusions; Acknowledgments; References; Chapter 4 Protein Kinases and Caspases: Bidirectional Interactions in Apoptosis; 4.1 Introduction; 4.2 Apoptosis: Caspase-Dependent Pathways; 4.2.1 Extrinsic Apoptosis
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4.4 Strategies to Investigate Global Crosstalk between Protein Kinases and Caspases

Sommario/riassunto

Authored by the world's leading kinase experts, this is a comprehensive introduction to current knowledge and practice within this emerging field. Following an overview of the major players and pathways that define the kinome, the major part of this work is devoted to current strategies of kinome investigation and manipulation. As such, kinase engineering, peptide substrate engineering, co-substrate design and kinase inhibitor design are discussed in detail, and their potential applications in kinome analysis and kinome-based pharmacotherapy are shown. The result is a toolbox for every kinase