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calcium acts as a negative regulator; Photo-excitation of rhodopsin; Switching off the mechanism; A note on phototransduction in invertebrates; Chapter 7. Calcium and signal transduction; A new second messenger is discovered; Calcium and evolution; Distinguishing Ca^{2+} and Mg^{2+} ; Free, bound and trapped Ca^{2+} ; Cytosol Ca^{2+} is kept low; Detecting changes in cytosol Ca^{2+} ; Mechanisms that elevate cytosol Ca^{2+} concentration; The pattern of cytosol Ca^{2+} changes in single cells; Localization of intracellular second messengers Chapter 8. Calcium signalling Calcium binding by proteins; Effects of elevated calcium; Paradigms of calcium signalling; Chapter 9. Phosphorylation and dephosphorylation: Protein kinases A and C; Protein phosphorylation as a switch in cellular functioning; cAMP and the amplification of signals; Protein kinase A; Protein kinase A and the regulation of transcription; Protein kinase A and the activation of ERK; Actions of cAMP not mediated by PKA; Protein kinase C; The protein kinase C family; Structural domains and activation of protein kinase C Multiple sources of DAG and other lipids to activate PKC Differential localization of PKC isoforms; PKC anchoring proteins, STICKs, PICKs and RACKs; PKC and cell transformation; PKC and inflammation; Chapter 10. Growth factors: Setting the framework; Viruses and tumours; The discovery of NGF... and EGF; Platelet derived growth factor; Transforming growth factors; Problems with nomenclature; Essay: The cell cycle; Essay: Cancer and cell transformation; Chapter 11. Signalling pathways operated by receptor protein tyrosine kinases; The tyrosine kinase family; Tyrosine kinase-containing receptors Branching of the signalling pathway

Sommario/riassunto

Signal Transduction is a well-illustrated, coherent look at cellular signaling processes. Beginning with the basics, it explains how cells respond to external cues, hormones, growth factors, cytokines, cell surfaces, etc., and then shows how these inputs are integrated and coordinated. The extensive color artwork provides the reader with a clearer comprehension of key topics, and margin notes are incorporated to highlight milestones in the evolution of signal transduction. This book serves as an invaluable resource for advanced undergraduates, graduate researchers, and established scien
