<<信号转导手册>>

图书基本信息

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内容概要

Ralph
A.Bradshaw编著的《信号转导手册(1细胞内外信号转导机制原著第2版导读版)(精)》包含350个章节，全面涵盖细胞信号转导领域。
内容包括：细胞内外信号转导机制，蛋白质磷酸化和去磷酸化，钙离子信号转导、脂质介导的第二信使，蛋白质互作、环化核苷酸，G蛋白、发育生物学中的信号转导，转录与翻译：细胞核与细胞质事件．细胞内功能区隔信号转导、胞间和细胞基质间的相互作用、疾病病理学。

《信号转导手册(1细胞内外信号转导机制原著第2版导读版)(精)》是生物学实验室不可或缺的工具用书，适用于生物化学与分子生物学、细胞生物学等相关专业的高年级本科生、研究生．也可作为教师的教学和科研参考书，亦可供生物医学、药理学、免疫学及相关领域的研究人员参考。

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书籍目录

章节摘录

Mechanistic Features of Cell-Surface Adhesion Receptors Living cells constantly interact with their environment.Asa consequence, a number of sensory systems have evolvedfor the collection, processing, and integration ot a remark-able range of environmental stimuli arising from cell-celland cell-substrate interactions.For instance, developmentaland morphological processes in higher eukaryotes rely onthe orchestrated migration of cells in response to specificphysical and chemical cues；T cell activation relies on thelocalization and comDartmentalization of cell-adhesion andsignaling molecules；and adherent cells must respond to avariety of intracellular and extracellular mechanical forces.All of these processes rely on the engagement ot spemhc cell-surface receptors with the appropriate extracellularligand to report on the immediate physical environment bytransducing extracellular signals across the plasma mem-brane.This review examines the diversity of mechanismsthought to be involved in adhesion and signaling and high-1ights some of the shared principles that must be consideredfor all signaling pathways utilizing cell-surface receptors. MECHANOSENSORY MECHAN ISMS The ability to detect and respond to alterations in applied mechanical force is required for a number of cellular and developmental functions.This is particularly critical for adherent cells that directly contact the extracellular matrixfECM） and are subject to considerable physical deforma-tion.For example, sheer forces associated with blood flow are maior determinants of arterial tone and vascular reorgan-ization.At the cellular level , morphology and orientation are optimized to minimize mechanical stress and damage asso-ciated with variations in flow-related forces（see, for exam-ple, （1-31）.Similarly,fibroblasts must be highly responsive Handbook of Cell Signaling, Three-Volume Set 2 ed-Copyright 0 2010 Elsevier Inc All rights reservedto the mechanical forces associated with alterations in theECM（reviewed in 141）. Considerable evidence points to focal adhesions, thesites of cell-substrate contact, as the sensors of mechanicalforce.Central to focal adhesion assembly and function arethe integrins.a family of α - β heterodimeric transmembraneglycoproteins that provide essential adhesive functions forcell migration and the establishment and maintenance of nor-mal tissue architecture.At least 18 α and 8 β chains allow forthe formation of multiple integrin heterodimers that are ableto display a spectrum of specificities for cell-surface adhesion molecules and for a range of ECM components , includingLaminin, collagen, and fibronectin.The integrin cytoplas-mic domains bind a variety of scaffolding and actin regula-tory proteins.which in tum recruit a large number of adaptor and signaling molecules.These physical links couple theintegrins to the downstream activation of numerous sxgnal-ing molecules, including MAP kinase, focal adhesion kinase, Src.and P13-kinase（see, for example, （4, 51）.Furthermore , integrin affinity is modulated by the activation state of the particular cell in question.

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