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Nota di contenuto	Cell Migrationin Development and Disease; Contents; Preface; List of Contributors; Color Plates; I Cell Shape Modulations and Cell Surface-Nucleus Connections: Prerequisites for Cell Migration; 1 Functional Phases in Cell Attachment and Spreading; 1.1 Introduction; 1.2 Fibroblast Spreading on Matrices; 1.3 Summary of Spreading Process; 1.3.1 Steps in Cell Spreading; 1.3.1.1 Basal Motility Phase (Cells in Suspension); 1.3.1.2 Adhesion to the Surface; 1.3.1.3 Initiation of Actin Assembly and Spreading (Rate-limiting Step); 1.3.1.4 Continued Spreading; 1.3.1.5 Transition to Fully Spread State 1.3.2 Binding to Rigid Matrices Causes Strengthening of Cytoskeleton-Integrin Linkages1.3.2.1 Initial Binding of Fibronectin Multimers at the Leading Edge and Over Actin Cables; 1.3.2.2 Force-dependent Activation of the ECM-Integrin Complexes; 1.3.2.3 Additional Steps in the Spreading Process; 1.3.3 MTs and Motility; 1.3.4 Conclusion; 1.4 References; 2 Polarized Cell Motility: Microtubules Show the Way; 2.1 Introduction; 2.1.1 The Vasiliev Conundrum; 2.1.2 Cell Polarity and Adhesion; 2.2 Microtubules Meet the Actin Cytoskeleton at Focal

Adhesions

2.3 Microtubule Targeting Promotes Focal Adhesion Turnover2.4 Contractility, the Functional Link; 2.5 Kinesin and Signal Transmission; 2.6 Tip Complexes Meet Adhesion Complexes; 2.7 Focal Adhesions Influence Microtubule Dynamics; 2.8 Actin Talks Back: Tension and Microtubule Guidance; 2.9 Conclusions and Perspectives; 2.10 Acknowledgments; 2.11 References; 3 Mechanisms of Eukaryotic Chemotaxis; 3.1 Chemotaxis is a Fundamental Cellular Response; 3.2 Directional Sensing Occurs Downstream of G Protein Activation and Upstream of the Accumulation of PI(3,4,5)P(3)

3.3 Input-Output Relationships Reveal Gradient Amplification in Polarized and Unpolarized Cells3.4 Increase in Local PI(3,4,5)P(3) Precedes Actin Polymerization Responses; 3.5 Positive Feedback and the Actin Cytoskeleton May Stabilize Directional Sensing and Establish Polarity; 3.6 References; 4 Dual Location Proteins: Communication Between Cell Adhesions and the Nucleus; 4.1 Introduction; 4.2 LIM Protein Family; 4.2.1 Zyxin Subfamily; 4.2.1.1 Zyxin; 4.2.1.2 LPP (Lipoma-Prefered Partner); 4.2.1.3 Trip6; 4.2.1.4 WTIP (Wilms Tumor protein 1 Interaction Protein); 4.2.1.5 Ajuba

4.2.2 Paxillin Subfamily4.2.2.1 Paxillin; 4.2.2.2 Hic-5; 4.3 MAGUK Protein Family; 4.3.1 ZO-1; 4.3.2 ZO-2; 4.3.3 CASK; 4.4 Armadillo Repeat Protein Family; 4.4.1 -catenin Armadillo Repeat Subfamily; 4.4.1.1 -catenin; 4.4.1.2 Plakoglobin; 4.4.2 p120 Armadillo Repeat Subfamily; 4.4.2.1 p120; 4.4.2.2 ARVCF; 4.4.2.3 Plakophilins; 4.5 Other Proteins - Symplekin; 4.6 Dual Location; 4.6.1 Sequestration of Transcriptional Regulators; 4.6.2 mRNA Localization; 4.6.3 Scaffolding; 4.7 Conclusion; 4.8 Acknowledgments; 4.9 References; II Classical Examples of Cell Migration in Development

5 Cell Migration During Zebrafish Gastrulation

Sommario/riassunto

Cell Migration matches nearly all research areas in cell and developmental biology, genetics, and biomedicine. The field shows radical progress powered by the combination of new genomic tools, cell labeling techniques and the incorporation of new model systems. This is the first book to comprehensively cover cell migration from the identification of molecular mechanisms to the understanding of certain pathological disorders and cancer development.