1. Record Nr. UNINA9910299704603321

Autore	Okeyo Kennedy Omondi
Titolo	Innovative Approaches to Cell Biomechanics : From Cell Migration to On-Chip Manipulation / / by Kennedy Omondi Okeyo, Hiromi Miyoshi, Taiji Adachi
Pubbl/distr/stampa	Tokyo : , : Springer Japan : , : Imprint : Springer, , 2015
ISBN	4-431-55163-8
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (201 p.)
Collana	Frontiers of Biomechanics, , 2199-8515 ; ; 1
Disciplina	571.4 571538 610.28 612 612.028 620
Soggetti	Biomedical engineering Regenerative medicine Tissue engineering Biophysics Biological physics Human physiology Biomedical Engineering and Bioengineering Regenerative Medicine/Tissue Engineering Biological and Medical Physics, Biophysics Human Physiology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Actin Cytoskeletal Structure in Migrating Cells -- Actin Cytoskeleton Generates Mechanical Forces for Cell Migration -- Multi-scale Mechanochemical Interactions between Cell Membrane and Actin Filaments -- Actin Network Flow and Turnover are coupled in Migrating Cells -- Mechanical Strain is involved in Actin Network Reorganization -- Actin Network Dynamics is Regulated by Actomyosin Interactions --

Biophysical Interactions between Cells and Extracellular Matrix -- Cell Migration in Engineered Micro-/Nano-environments with Controlled Physical Properties -- Engineered Biomaterial for Cell Manipulation.

Sommario/riassunto

This book covers topics on mechanosensing, mechanotransduction, and actin cytoskeletal dynamics in cell motility. It will contribute to a better understanding of how cells functionally adapt to their mechanical environment as well as highlighting fundamental concepts for designing material niches for cell manipulation. With topics from multidisciplinary fields of the life sciences, medicine, and engineering, the book is the first of its kind, providing comprehensive, integrated coverage of innovative approaches to cell biomechanics. It provides a valuable resource for seniors and graduate students studying cell biomechanics, and is also suitable for researchers interested in the application of methods and strategies in connection with the innovative approaches discussed. Each section of the book has been supplemented with concrete examples and illustrations to facilitate understanding even for readers unfamiliar with cell biomechanics.