

1. Record Nr.	UNINA9910830208803321
Titolo	Molecular motors [[electronic resource] /] / edited by Manfred Schliwa
Pubbl/distr/stampa	Weinheim, : Wiley-VCH, c2003
ISBN	1-280-55859-8 9786610558599 3-527-60565-7 3-527-60150-3
Descrizione fisica	1 online resource (606 p.)
Altri autori (Persone)	SchliwaM <1945-> (Manfred)
Disciplina	572.8 574.87
Soggetti	Molecular biology Biochemistry
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 and index.
Nota di contenuto	Molecular Motors; Preface; Contents; List of Contributors; Part 1 Basic Principles of Motor Design; 1 The Myosin Superfamily: An Overview; 1.1 An Introduction to the Myosin Superfamily; 1.2 Functional Properties of Myosins; 1.2.1 Directionality and Processivity; 1.2.2 Protein Motifs Found in Myosins; 1.2.3 Myosin Regulation; 1.3 Diverse Functions for Myosins; 1.3.1 Non-muscle Contractile Structures; 1.3.2 Cell Motility and Adhesion; 1.3.3 Organelle/Cellular Component Transport; 1.3.4 Maintenance of Actin-rich Extensions; 1.3.5 Membrane Trafficking; 1.3.6 Signal Transduction 1.4 Myosins in Disease1.4.1 Griscelli Syndrome; 1.4.2 Roles for Myosins in Hearing; 1.5 New Myosins and Myosin Functions on the Horizon; 1.6 Conclusions; References; 2 Dynein Motors: Structure, Mechanochemistry and Regulation; 2.1 Introduction; 2.2 Structural Organization of the Motor, Cargo-binding and Regulatory Components; 2.2.1 Heavy Chains; 2.2.2 Intermediate Chains; 2.2.3 Light Intermediate Chains; 2.2.4 The LC8 Light Chain Class; 2.2.5 The Tctex1/Tctex2 Light Chain Class; 2.2.6 The LC7/roadblock Light Chain Class; 2.2.7 Heavy Chain-associated Regulatory Light Chains 2.2.7.1 Light chain 12.2.7.2 Calmodulin-related light chains; 2.2.7.3

Thioredoxins; 2.2.7.4 p29 (cAMP-dependent phosphoprotein); 2.2.8 Light Chains Associated with Inner Arms I2/3; 2.3 Mechanochemistry and Motility; 2.4 Dynein Deficiencies and Disease; 2.5 Conclusions; References; 3 Kinesin Superfamily Proteins; 3.1 Introduction; 3.2 The Kinesin Superfamily Proteins; 3.3 N-Kinesins; 3.3.1 N-1 Kinesins; 3.3.2 N-2 Kinesins; 3.3.3 N-3 Kinesins; 3.3.3.1 The Unc104/KIF1 family; 3.3.3.2 The KIF13 family; 3.3.3.3 The KIF16 family; 3.3.4 N-4 Kinesins; 3.3.4.1 The KIF3 family; 3.3.4.2 The Osm3/KIF17 family; 3.3.5 N-5 Kinesins; 3.3.6 N-6 Kinesins; 3.3.6.1 The CHO1/KIF23 family; 3.3.6.2 The KIF20/Rab6 kinesin family; 3.3.7 N-7 Kinesins; 3.3.8 N-8 Kinesins; 3.3.8.1 The Kid/KIF22 family; 3.3.8.2 The KIF18 family; 3.3.9 N-9 Kinesins; 3.3.10 N-10 Kinesins; 3.3.11 N-11 Kinesins; 3.4 M-Kinesins; 3.5 C-Kinesins; 3.5.1 C-1 Kinesins; 3.5.2 C-2 Kinesins; 3.6 Orphans; 3.7 Cargoes of KIFs; Specificity and Redundancy; 3.8 Recognition and Binding to Cargoes; 3.9 How to Determine the Direction of Transport; References; 4 The Bacterial Flagellar Motor; 4.1 Introduction; 4.2 Structure; 4.2.1 Propeller and Drive-shaft; 4.2.2 Rotor; 4.2.3 Stator; 4.2.4 Rotor-Stator Interactions; 4.3 Function; 4.3.1 Motor Driven by H(+) and Na(+) Ion Flux; 4.3.2 Torque versus Speed; 4.3.3 Independent Torque Generators; 4.3.4 Proton Motive Force, Sodium-motive Force, Ion Flux; 4.3.5 Reversibility; 4.3.6 Steps?; 4.4 Models; 4.4.1 Conceptual Models; 4.4.2 Kinetic Models; 4.5 Summary; References; 5 F(1)-Motor of ATP Synthase; 5.1 Introduction; 5.2 ATP Synthase; 5.3 F(1)-Motor; 5.4 Imaging of Rotation of F(1)-Motor; 5.5 High-speed Imaging of F(1) Rotation; 5.6 New Crystal Structure for the F(1)-Motor; 5.7 Catalysis and Rotation of F(1)-Motor

Sommario/riassunto

The latest knowledge on molecular motors is vital for the understanding of a wide range of biological and medical topics: cell motility, organelle movement, virus transport, developmental asymmetry, myopathies, and sensory defects are all related to the function or malfunction of these minute molecular machines. Since there is a vast amount of information on motor mechanisms and potential biomedical and nanobiotechnological applications, this handbook fulfills the need for a collection of current research results on the functionality, regulation, and interactions of cytoskeletal, DNA, and rota
