

Muscle Biophysics

[DOWNLOAD HERE](#)

1;Muscle Biophysics;3 1.1;Copyright;4 1.2;Preface;5 1.2.1;References;6 1.3;Contents;9
1.4;Contributors;11 1.5;Striated Muscles: From Molecules to Cells;15 1.5.1;1 Striated Muscle
Organization;15 1.5.1.1;1.1 Single Muscle Fibers;16 1.5.1.2;1.2 Single Myofibrils and Sarcomeres;17
1.5.1.3;1.3 Single Filaments and Molecules;18 1.5.2;References;20 1.6;Contractile Performance of
Striated Muscle;21 1.6.1;1 Introduction;21 1.6.2;2 The Length Tension Relationship in Striated Muscle;23
1.6.3;3 The Force Velocity Relationship. Maximum Velocity of Shortening;26 1.6.4;4 The Slack Test
Method. Braking Force of Cross-Bridges at Negative Strain;31 1.6.5;5 Force Enhancement by Stretch;33
1.6.5.1;5.1 Force Enhancement During Stretch, Its Relation to Sarcomere Length and Myofilament Lattice
Width;34 1.6.5.2;5.2 Residual Force Enhancement After Stretch;37 1.6.6;6 Force Reduction After Loaded
Shortening;39 1.6.7;7 Deactivation by Active Shortening;41 1.6.8;8 Differences in Kinetic Properties
Along Individual Muscle Fibers;48 1.6.9;References;51 1.7;Energy Economy in the Actomyosin
Interaction: Lessons from Simple Models;55 1.7.1;1 Introduction;55 1.7.2;2 Lessons from a Two State
Model;57 1.7.3;3 Lessons from a Three State Model;62 1.7.4;4 Conclusions and Future Directions;66
1.7.5;References;67 1.8;A Strain-Dependency of Myosin Off-Rate Must Be Sensitive to Frequency to
Predict the B-Process of Sinusoidal Analysis;70 1.8.1;1 Introduction;71 1.8.2;2 Small Sinusoidal Length
Perturbation Analysis;72 1.8.3;3 Analytical Results;76 1.8.3.1;3.1 ODE Solution for Isometric Force and
C-Process;77 1.8.3.2;3.2 Simple Strain Dependency on Myosin Off-Rate;81 1.8.3.3;3.3 A Frequency
Dependency on the Strain-Dependence of Myosin Off-Rate;82 1.8.4;4 Discussion;85 1.8.5;References;86
1.9;Electron Microscopic Visualization of the Cross-Bridge Movement Coupled with ATP Hydrolysis in
Muscle Thick Filaments in Aque;89 1.9.1;1 Introduction;89 1.9.2;2 The EC System;91 1.9.2.1;2.1 Carbon
Sealing Film;91 1.9.2.2;2.2 The EC;91 1.9.3;3 Observation and Recording of Specimen Image;93
1.9.3.1;3.1 The Critical Incident Electron Dose to Impair Function of Contractile Proteins;93 1.9.3.2;3.2
Recording of Specimen Image;94 1.9.3.3;3.3 Application of ATP and ADP;95 1.9.3.4;3.4 Position Marking
of Individual Cross-Bridges;95 1.9.3.5;3.5 Data Analysis;96 1.9.4;4 Experiments with Myosin Paramyosin
Hybrid Filaments;96 1.9.4.1;4.1 Reasons to Use the Hybrid Filaments;96 1.9.4.2;4.2 Stability of the

Cross-Bridge Position in the Absence of ATP;97 1.9.4.3;4.3 ATP-Induced Cross-Bridge Movement;99 1.9.4.4;4.4 Interpretation of the Results Obtained;101 1.9.5;5 Experiments with Bipolar Thick Filaments Consisting of Rabbit Skeletal Muscle Myosin;102 1.9.5.1;5.1 Resumption of Experiments at JEOL Ltd;102 1.9.5.2;5.2 Problems with Bipolar Thick Filaments;102 1.9.5.3;5.3 Stability of the Cross-Bridge Position in the Absence of ATP;104 1.9.5.4;5.4 Amplitude of the ATP-Induced Cross-Bridge Movement;105 1.9.5.5;5.5 Reversal in the Direction of ATP-Induced Cross-Bridge Movement Across the Filament Bare Region;107 1.9.5.6;5.6 Reversibility of the ATP-Induced Cross-Bridge Movement;108 1.9.5.7;5.7 Interpretation of the Results Obtained;110 1.9.5.7.1;5.7.1 Relation to Previous Studies;110 1.9.5.7.2;5.7.2 Direct Evidence for the Cross-Bridge Recovery Stroke;110 1.9.5.7.3;5.7.3 Variation in the Amplitude of Cross-Bridge Movement;112 1.9.6;6 Future Prospects;112 1.9.7;References;113 1.10;Role of Titin in Skeletal Muscle Function and Disease;116 1.10.1;1 Introduction;116 1.10.2;2 Brief Overview of Titin s Layout;117 1.10.3;3 Modulation of Titin s Elasticity Through Isoform Diversity;117 1.10.4;4 Molecular Basis of Titin s Elasticity;119 1.10.5;5 Stretch-Release Force Hysteresis of Titin Molecules;122 1.10.6;6 Titin-Based Protein Complexes as Stress Sensors;122 1.10.7;7 Titin-Associated Skeletal Muscle Diseases;125 1.10.8;8 Summary;128 1 EAN/ISBN : 9781441963666 Publisher(s): Springer, Berlin, Springer Science & Business Media Discussed keywords: Biophysik Format: ePub/PDF Author(s): Rassier, Dilson E.

[DOWNLOAD HERE](#)

Similar manuals:

[Muscle Biophysics](#)