

SPECIAL ISSUE

MUSCLE: MOLECULES TO MOTION

EDITED BY

Stan L. Lindstedt and Hans H. Hoppeler



Cover: Myosin binding protein-C (part of which is shown schematically in multicolored cartoon form) is one of the most interesting regulatory elements of skeletal and cardiac muscle. It binds to the actin-tropomyosin complex (binding shown is purely schematic), where it is thought to regulate contraction. It also binds to myosin, where it is thought to play a regulatory role. A portion of the myosin catalytic domain termed the myosin mesa has been speculated to be involved in some manner (pp. 161-167). Image assembled in PyMol by James Spudich and Margaret Sunitha.

- INSIDE JEB**
- 129 Muscle revisited
Knight, K.
- EDITORIAL**
- 134 Expanding knowledge of contracting muscle
Lindstedt, S. L. and Hoppeler, H. H.
- THE CYTOSKELETON**
- 135 The sarcomeric cytoskeleton: from molecules to motion
Gautel, M. and Djinović-Carugo, K.
- 146 Nebulin, a multi-functional giant
Chu, M., Gregorio, C. C. and Pappas, C. T.
- 153 Non-crossbridge stiffness in active muscle fibres
Colombini, B., Nocella, M. and Bagni, M. A.
- MECHANISMS OF MUSCLE CONTRACTION AND EXCITATION-CONTRACTION COUPLING**
- 161 Effects of hypertrophic and dilated cardiomyopathy mutations on power output by human β -cardiac myosin
Spudich, J. A., Aksel, T., Bartholomew, S. R., Nag, S., Kawana, M., Yu, E. C., Sarkar, S. S., Sung, J., Sommese, R. F., Sutton, S., Cho, C., Adhikari, A. S., Taylor, R., Liu, C., Trivedi, D. and Ruppel, K. M.
- 168 Myosin isoforms and the mechanochemical cross-bridge cycle
Walklate, J., Ujfalusi, Z. and Geeves, M. A.
- 175 Bridging the myoplasmic gap II: more recent advances in skeletal muscle excitation-contraction coupling
Bannister, R. A.
- ECCENTRIC CONTRACTIONS**
- 183 Skeletal muscle tissue in movement and health: positives and negatives
Lindstedt, S. L.
- 189 Eccentric contraction: unraveling mechanisms of force enhancement and energy conservation
Nishikawa, K.
- 197 Neural control of lengthening contractions
Duchateau, J. and Enoka, R. M.
- MUSCLE PLASTICITY**
- 205 Molecular networks in skeletal muscle plasticity
Hoppeler, H.
- 214 Effects of skeletal muscle energy availability on protein turnover responses to exercise
Smiles, W. J., Hawley, J. A. and Camera, D. M.
- 226 Skeletal muscle mass and composition during mammalian hibernation
Cotton, C. J.
- 235 Muscle memory and a new cellular model for muscle atrophy and hypertrophy
Gundersen, K.
- METABOLISM AND TISSUE CROSS-TALK**
- 243 Mitochondria to motion: optimizing oxidative phosphorylation to improve exercise performance
Conley, K. E.
- 250 Metabolic fuel kinetics in fish: swimming, hypoxia and muscle membranes
Weber, J.-M., Choi, K., Gonzalez, A. and Omlin, T.
- 259 The role of gp130 receptor cytokines in the regulation of metabolic homeostasis
Cron, L., Allen, T. and Febbraio, M. A.
- MUSCLE IN MOTION**
- 266 Contribution of elastic tissues to the mechanics and energetics of muscle function during movement
Roberts, T. J.
- 276 Muscle structural assembly and functional consequences
Narici, M., Franchi, M. and Maganaris, C.
- 285 Locomotion as an emergent property of muscle contractile dynamics
Biewener, A. A.