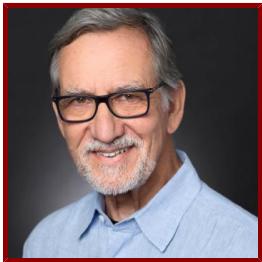


Stanford



James Spudich

Douglass M. and Nola Leishman Professor of Cardiovascular Disease, Emeritus
Biochemistry

 NIH Biosketch available Online

 Curriculum Vitae available Online

 Resume available Online

Bio

BIO

James Spudich, Douglass M. and Nola Leishman Professor of Cardiovascular Disease, is in the Department of Biochemistry at Stanford University School of Medicine. He received his B.S. in chemistry from the University of Illinois in 1963 and his Ph.D. in biochemistry from Stanford in 1968. He did postdoctoral work in genetics at Stanford and in structural biology at the MRC Laboratory in Cambridge, England. From 1971 to 1977 he was Assistant, Associate, and Full Professor in the Department of Biochemistry and Biophysics, University of California, San Francisco. In 1977 he was appointed Professor in the Department of Structural Biology at Stanford University. Spudich served as Chairman of the Department of Structural Biology from 1979-1984. Since 1992 he has been Professor in the Department of Biochemistry, and served as Chairman from 1994-1998. He has held a joint appointment as Professor in the Department of Developmental Biology since 1989. From 1998 to 2002, he was Co-Founder and first Director of the Stanford Interdisciplinary Program in Bioengineering, Biomedicine and Biosciences called Bio-X. At present he is also an Adjunct Professor at the National Center for Biological Sciences, Tata Institute of Fundamental Research and InStem in Bangalore, India.

Spudich has given more than 40 named lectureships and keynote addresses, including the First Annual Lecture of the series "The James Spudich AHA Research Committee Lecture," named in his honor; the Pauling Lecture, Stanford; the Paul Dudley White Lecture, Mass General Hospital of Harvard University; the DeWitt Stetten, Jr. Lecture, NIH; the Meyerhof Lecture, Heidelberg; the Keith R. Porter Lecture, ASCB; the Hans Neurath Lecture, University of Washington; the National Lecture, Biophysical Society; the Mayer Lecture, MIT; Plenary Lecture (shared with Aaron Klug), Madrid International Congress on Cell Biology; the Friday Evening Lecture, Woods Hole; and the Cori Lecture, Washington University.

Spudich was a recipient of a Guggenheim Fellowship in 1978. He was elected to the National Academy of Sciences in 1991. He is also a member of the American Academy of Arts and Sciences, and the American Association for the Advancement of Science. Spudich received the American Heart Association Basic Research Prize, the Alexander von Humboldt Research Award, the Biophysical Society Lifetime Research Career Award, the Lewis S. Rosenstiel Award for Outstanding Research Achievement in the Field of Basic Medical Studies, the American Chemical Society's Award for the Chemistry of Biological Processes, the Biophysics Society Award for Outstanding Investigator in the Field of Single Molecule Biology, the E.B. Wilson Medal, the Arthur Kornberg and Paul Berg Lifetime Achievement Award in Biomedical Sciences, the Wiley Prize in Biomedical Sciences, the Ahmed H. Zewail Award and the Massry Prize. In 2012, he received the Albert Lasker Basic Medical Research Award.

ACADEMIC APPOINTMENTS

- Professor Emeritus, Biochemistry
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)

- Member, Stanford Cancer Institute

ADMINISTRATIVE APPOINTMENTS

- Assistant Professor, Department of Biochemistry & Biophysics, University of California, San Francisco, (1971-1974)
- Associate Professor, Department of Biochemistry & Biophysics, University of California, San Francisco, (1974-1976)
- Professor, Department of Biochemistry and Biophysics, University of California, San Francisco, (1976-1977)
- Professor, Department of Structural Biology, Stanford University School of Medicine, (1977-1992)
- Chairman, Department of Structural Biology, Stanford University School of Medicine, (1979-1984)
- Professor, Department of Developmental Biology, Stanford University School of Medicine, (1989-2011)
- Professor, Department of Biochemistry, Stanford University School of Medicine, (1992- present)
- Chairman, Department of Biochemistry, Stanford University School of Medicine, (1994-1998)
- Co-Founder and first Director, Interdisciplinary Program, Bio-X, Stanford University, (1998-2002)
- Co-Founder, Cytokinetics, Inc, (1998- present)
- Co-Founder, MyoKardia, Inc., (2012- present)
- Co-Founder, Kainomyx, Inc., (2019- present)

HONORS AND AWARDS

- Alumni Achievement Award, University of Illinois (2018)
- Founders Award, Biophysical Society (2018)
- Inaugural ASCB Fellow, American Society for Cell Biology (2016)
- Liberal Arts and Sciences Alumni Achievement Award, University of Illinois (2015)
- Honorary Doctor of Sciences Degree, Guelph University, Guelph University (2014)
- Ahmed H. Zewail Award Gold Medal, Wayne State University (2013)
- Massry Prize, Massry Foundation (2013)
- Albert Lasker Basic Medical Research Award, Lasker Foundation (2012)
- Arthur Kornberg and Paul Berg Lifetime Achievement Award in Biomedical Sciences, Stanford University School of Medicine (2012)
- Wiley Prize in Biomedical Sciences, Rockefeller University (2012)
- E.B. Wilson Medal, The American Society for Cell Biology (2011)
- U.S. Genomics Award for Outstanding Investigator in the field of Single Molecule Biology, Biophysical Society (2006)
- Elected Fellow of the American Association for the Advancement of Science, the American Association for the Advancement of Science (2001)
- Elected Fellow of the American Academy of Arts and Sciences, the American Academy of Arts and Sciences (1997)
- 1997 Repligen Award in Chemistry of Biological Processes, Division of Biological Chemistry of the American Chemical Society (1996)
- Lewis S. Rosenstiel Award, Brandeis University (1996)
- Biophysical Society Lifetime Research Career Award, Biophysical Society (1995)
- External Scientific Member of the Max-Planck-Institute für Biochemie in Martinsried bei München, Max-Planck Society (1994)
- Alexander von Humboldt Research Award, Alexander von Humboldt Research Foundation (1991)
- American Heart Association Research Prize, National American Heart Association (1991)
- Elected Member of the National Academy of Sciences, the National Academy of Sciences (1991)
- NIH Merit Award, National Institutes of Health (1991)
- Named the "Douglass M. and Nola Leishman Professor of Cardiovascular Disease", Stanford University (1987 - present)

PROFESSIONAL EDUCATION

- B.S., University of Illinois , Chemistry (1963)
- Ph.D., Stanford University , Biochemistry (1968)
- Postdoctoral, Stanford University , Genetics (1969)
- Postdoctoral, Cambridge University, MRC LMB , Structural Biology (1971)

LINKS

- My Lab Site: <http://spudlab.stanford.edu/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our general research interest is the structure and function of molecular motors in vitro and in vivo, with emphasis on understanding the molecular basis of muscle contraction. Our major areas of specific interest are the molecular basis of energy transduction that leads to ATP-driven myosin movement on actin, the roles of the myosin family of molecular motors in eukaryotic cells, the regulation of actin and myosin interaction and their assembly states, and the biochemistry and regulation of the attachment of molecular motors to their corresponding cargo.

Our approaches include biochemical, genetic, biophysical and structural studies of actin, myosin, and associated proteins from eukaryotic cells. We have designed and developed in vitro assays for ATP-dependent movement of purified myosin on filaments reconstituted from purified actin. We have taken this assay to the single molecule level, using laser traps, total internal reflection fluorescence microscopy, and gold nanoparticle tracking. Myosin cloning and expression of mutagenized forms that are analyzed for altered functions is routine in our laboratory.

The detailed understanding we have developed of how myosin transduces the chemical energy of ATP hydrolysis into mechanical movement has led us to our current focus on human hypertrophic cardiomyopathy (HCM) caused by missense mutations in human β -cardiac myosin. Our goal is to elucidate the molecular basis of hypercontractility seen clinically resulting from HCM mutations. We postulated in 2015 that a majority of HCM mutations shift β -cardiac myosin heads from a sequestered off-state to an active on-state for interaction with actin, resulting in the hypercontractility seen clinically. This hypothesis is different from earlier prevailing views, and this viewing an old disease in a new light is the basis of all of our current research. We now have extensive evidence for this hypothesis using a combination of the various high-resolution technologies we have developed over the years as well as new approaches. Our work is now providing possible paths forward for therapeutic intervention for cardiomyopathy patients.

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Rama Reddy Goluguri, Neha Nandwani, Divya Pathak, Asmita Pawar

Doctoral Dissertation Co-Advisor (AC)

Ramon Lorenzo Labitigan

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biochemistry (Phd Program)
- Biophysics (Phd Program)

Publications

PUBLICATIONS

- **Hypertrophic cardiomyopathy mutations in the pliant and light chain-binding regions of the lever arm of human β -cardiac myosin have divergent effects on myosin function.** *eLife*
Morck, M. M., Bhowmik, D., Pathak, D., Dawood, A., Spudich, J., Ruppel, K. M.
2022; 11
- **Hypertrophic cardiomyopathy: Mutations to mechanisms to therapies.** *Frontiers in physiology*
Kawana, M., Spudich, J. A., Ruppel, K. M.
2022; 13: 975076
- **Hypertrophic cardiomyopathy beta-cardiac myosin mutation (P710R) leads to hypercontractility by disrupting super relaxed state.** *Proceedings of the National Academy of Sciences of the United States of America*
Vander Roest, A. S., Liu, C., Morck, M. M., Kooiker, K. B., Jung, G., Song, D., Dawood, A., Jhingran, A., Pardon, G., Ranjbarvaziri, S., Fajardo, G., Zhao, M., Campbell, et al
2021; 118 (24)
- **Single Residue Variation in Skeletal Muscle Myosin Enables Direct and Selective Drug Targeting for Spasticity and Muscle Stiffness.** *Cell ADVANCES*
Gyimesi, M., Horvath, A. I., Turos, D., Suthar, S. K., Penzes, M., Kurdi, C., Canon, L., Kikuti, C., Ruppel, K. M., Trivedi, D. V., Spudich, J. A., Lorincz, I., Rauscher, et al
2020
- **The hypertrophic cardiomyopathy mutations R403Q and R663H increase the number of myosin heads available to interact with actin** *SCIENCE ADVANCES*
Sarkar, S. S., Trivedi, D., Morck, M. M., Adhikari, A. S., Pasha, S. N., Ruppel, K. M., Spudich, J. A.
2020; 6 (14): eaax0069
- **The Myosin Family of Mechanoenzymes: From Mechanisms to Therapeutic Approaches.** *Annual review of biochemistry*
Trivedi, D. V., Nag, S., Spudich, A., Ruppel, K. M., Spudich, J. A.
2020
- **beta-Cardiac myosin hypertrophic cardiomyopathy mutations release sequestered heads and increase enzymatic activity.** *Nature communications*
Adhikari, A. S., Trivedi, D. V., Sarkar, S. S., Song, D., Kooiker, K. B., Bernstein, D., Spudich, J. A., Ruppel, K. M.
2019; 10 (1): 2685
- **Three perspectives on the molecular basis of hypercontractility caused by hypertrophic cardiomyopathy mutations** *PFLUGERS ARCHIV-EUROPEAN JOURNAL OF PHYSIOLOGY*
Spudich, J. A.
2019; 471 (5): 701–17
- **Three perspectives on the molecular basis of hypercontractility caused by hypertrophic cardiomyopathy mutations.** *Pflugers Archiv : European journal of physiology*
Spudich, J. A.
2019
- **The Myosin Mesa and Hypertrophic Cardiomyopathy: Mutations to Mechanisms to Therapies**
Spudich, J.
CELL PRESS.2019: 35A
- **On the Functional Assessment of Hypertrophic Cardiomyopathy-Causing Mutations in Human beta-Cardiac Myosin and the Role of Myosin Binding Protein-C**
Trivedi, D. V., Sarkar, S. S., Adhikari, A. S., Morck, M. M., Kooiker, K. B., Bernstein, D., Ruppel, K. M., Spudich, J. A.
CELL PRESS.2019: 466A–467A
- **Deciphering the super relaxed state of human beta-cardiac myosin and the mode of action of mavacamten from myosin molecules to muscle fibers** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Anderson, R. L., Trivedi, D. V., Sarkar, S. S., Henze, M., Ma, W., Gong, H., Rogers, C. S., Gorham, J. M., Wong, F. L., Morck, M. M., Seidman, J. G., Ruppel, K. M., Irving, et al

2018; 115 (35): EB143–EB152

● **Controlling load-dependent kinetics of beta-cardiac myosin at the single-molecule level.** *Nature structural & molecular biology*

Liu, C., Kawana, M., Song, D., Ruppel, K. M., Spudich, J. A.
2018; 25 (6): 505–14

● **The myosin mesa and the basis of hypercontractility caused by hypertrophic cardiomyopathy mutations.** *Nature structural & molecular biology*

Nag, S., Trivedi, D. V., Sarkar, S. S., Adhikari, A. S., Sunitha, M. S., Sutton, S., Ruppel, K. M., Spudich, J. A.
2017; 24 (6): 525–533

● **Hypertrophic cardiomyopathy and the myosin mesa: viewing an old disease in a new light.** *Biophysical reviews*

Trivedi, D. V., Adhikari, A. S., Sarkar, S. S., Ruppel, K. M., Spudich, J. A.
2017

● **Multidimensional structure-function relationships in human beta-cardiac myosin from population-scale genetic variation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Homburger, J. R., Green, E. M., Caleshu, C., Sunitha, M. S., Taylor, R. E., Ruppel, K. M., Metpally, R. P., Colan, S. D., Michels, M., Day, S. M., Olivotto, I., Bustamante, C. D., Dewey, et al
2016; 113 (24): 6701–6706

● **A small-molecule inhibitor of sarcomere contractility suppresses hypertrophic cardiomyopathy in mice** *SCIENCE*

Green, E. M., Wakimoto, H., Anderson, R. L., Evanchik, M. J., Gorham, J. M., Harrison, B. C., Henze, M., Kawas, R., Oslo, J. D., Rodriguez, H. M., Song, Y., Wan, W., Leinwand, et al
2016; 351 (6273): 617–621

● **Effects of hypertrophic and dilated cardiomyopathy mutations on power output by human beta-cardiac myosin** *JOURNAL OF EXPERIMENTAL BIOLOGY*

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, et al
2016; 219 (2): 161–167

● **Ensemble force changes that result from human cardiac myosin mutations and a small-molecule effector.** *Cell reports*

Aksel, T., Choe Yu, E., Sutton, S., Ruppel, K. M., Spudich, J. A.
2015; 11 (6): 910–920

● **The myosin mesa and a possible unifying hypothesis for the molecular basis of human hypertrophic cardiomyopathy** *BIOCHEMICAL SOCIETY TRANSACTIONS*

Spudich, J. A.
2015; 43: 64–72

● **Harmonic force spectroscopy measures load-dependent kinetics of individual human β-cardiac myosin molecules.** *Nature communications*

Sung, J., Nag, S., Mortensen, K. I., Vestergaard, C. L., Sutton, S., Ruppel, K., Flyvbjerg, H., Spudich, J. A.
2015; 6: 7931–?

● **Hypertrophic and Dilated Cardiomyopathy: Four Decades of Basic Research on Muscle Lead to Potential Therapeutic Approaches to These Devastating Genetic Diseases** *BIOPHYSICAL JOURNAL*

Spudich, J. A.
2014; 106 (6): 1236–1249

● **One path to understanding energy transduction in biological systems** *NATURE MEDICINE*

Spudich, J. A.
2012; 18 (10): 1478–1482

● **The power stroke of myosin VI and the basis of reverse directionality** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Bryant, Z., Altman, D., Spudich, J. A.
2007; 104 (3): 772–777

● **Characterization of the one-head bound intermediate that occurs as myosin V walks on actin** *51st Annual Meeting of the Biophysical Society*

Dunn, A. R., Spudich, J. A.
CELL PRESS.2007: 190A–190A

- **Single molecule high-resolution colocalization of Cy3 and Cy5 attached to macromolecules measures intramolecular distances through time** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Churchman, L. S., Okten, Z., Rock, R. S., Dawson, J. F., Spudich, J. A.
2005; 102 (5): 1419-1423
- **A FRET-based sensor reveals large ATP hydrolysis-induced conformational changes and three distinct states of the molecular motor myosin** *CELL*
Shih, W. M., Gryczynski, Z., Lakowicz, J. R., Spudich, J. A.
2000; 102 (5): 683-694
- **The neck region of the myosin motor domain acts as a lever arm to generate movement** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Uyeda, T. Q., ABRAMSON, P. D., Spudich, J. A.
1996; 93 (9): 4459-4464
- **SINGLE MYOSIN MOLECULE MECHANICS - PICONEWTON FORCES AND NANOMETER STEPS** *NATURE*
Finer, J. T., Simmons, R. M., Spudich, J. A.
1994; 368 (6467): 113-119
- **MYOSIN SUBFRAGMENT-1 IS SUFFICIENT TO MOVE ACTIN-FILAMENTS INVITRO** *NATURE*
Toyoshima, Y. Y., Kron, S. J., McNally, E. M., NIEBLING, K. R., Toyoshima, C., Spudich, J. A.
1987; 328 (6130): 536-539
- **DISRUPTION OF THE DICTYOSTELIUM MYOSIN HEAVY-CHAIN GENE BY HOMOLOGOUS RECOMBINATION** *SCIENCE*
DeLozanne, A., Spudich, J. A.
1987; 236 (4805): 1086-1091
- **Myosin Subfragment-1 is Sufficient to Move Actin Filaments In Vitro** *Myosin Subfragment-1 is Sufficient to Move Actin Filaments In Vitro*
Toyoshima, Y. Y., et al
1987; 328: 536-539
- **FLUORESCENT ACTIN-FILAMENTS MOVE ON MYOSIN FIXED TO A GLASS-SURFACE** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Kron, S. J., Spudich, J. A.
1986; 83 (17): 6272-6276
- **MOVEMENT OF MYOSIN-COATED BEADS ON ORIENTED FILAMENTS RECONSTITUTED FROM PURIFIED ACTIN** *NATURE*
Spudich, J. A., Kron, S. J., Sheetz, M. P.
1985; 315 (6020): 584-586
- **CYTOSKELETAL ELEMENTS OF CHICK-EMBRYO FIBROBLASTS REVEALED BY DETERGENT EXTRACTION** *JOURNAL OF SUPRAMOLECULAR STRUCTURE*
Brown, S., Levinson, W., Spudich, J. A.
1976; 5 (2): 119-130
- **First-in-class drug candidate (MPH-220) efficiently improves spastic gait disorders by selective inhibition of fast skeletal muscle myosin-2**
Gyimesi, M., Horvath, A. I., Turos, D., Suthar, S., Penzes, M., Canon, L., Kikuti, C., Ruppel, K., Trivedi, D. V., Spudich, J. A., Rauscher, A. A., Kovacs, M., Komoly, et al
CELL PRESS.2022: 291A
- **Understanding the molecular basis of HCM-causing mutations in cardiac myosin and cardiac myosin binding protein-C**
Pathak, D., Nandwani, N., Ruppel, K., Spudich, J. A.
CELL PRESS.2022: 255A
- **Allosteric destabilization of the super-relaxed state of cardiac myosin by hypertrophic cardiomyopathy-causing mutations**
Nandwani, N., Bhowmik, D., Dawood, A., Ruppel, K., Spudich, J. A.
CELL PRESS.2022: 292A
- **Altered Cardiac Energetics and Mitochondrial Dysfunction in Hypertrophic Cardiomyopathy.** *Circulation*
Ranjbarvaziri, S., Kooiker, K. B., Ellenberger, M., Fajardo, G., Zhao, M., Vander Roest, A. S., Woldeyes, R. A., Koyano, T. T., Fong, R., Ma, N., Tian, L., Traber, G. M., Chan, et al

2021

● **Nanomechanical Phenotypes in Cardiac Myosin-Binding Protein C Mutants That Cause Hypertrophic Cardiomyopathy.** *ACS nano*

Suay-Corredora, C., Pricolo, M. R., Velazquez-Carreras, D., Pathak, D., Nandwani, N., Pimenta-Lopes, C., Sanchez-Ortiz, D., Urrutia-Irazabal, I., Vilches, S., Dominguez, F., Frisso, G., Monserrat, L., Garcia-Pavia, et al
2021

● **Molecular Mechanisms and Cellular Models of Hypertrophic Cardiomyopathy: Insights from a Surprising Mutation**

Vander Roest, A. S., Liu, C., Kooiker, K. B., Morck, M. M., Pruitt, B., Campbell, K. S., Ruppel, K., Spudich, J. A., Bernstein, D.
CELL PRESS.2021: 253A

● **Hypertrophic Cardiomyopathy, a Disease of Altered Cardiac Energetics**

Ranjbarvaziri, S., Ellenberger, M., Kooiker, K., Fajardo, G., Zhao, M., Schroer, A., Woo, Y. Y., Ruppel, K. M., Spudich, J. A., Snyder, M., Contrepois, K., Bernstein, D.
LIPPINCOTT WILLIAMS & WILKINS.2020

● **Study of Hcm Causing beta-Cardiac Myosin Mutations Located at Different Structurally Significant Regions of the Myosin-Head**

Bhowmik, D., Nandwani, N., Ruppel, K., Liu, C., Spudich, J. A.
CELL PRESS.2020: 435A

● **Functional Comparison of Homologous Mutations in Human Beta, Perinatal, and Embryonic Muscle Myosin Isoforms**

Karabina, A., Liu, C., Spudich, J. A., Leinwand, L. A.
CELL PRESS.2020: 433A

● **Uncovering the Molecular and Structural Basis of Hypertrophic Cardiomyopathy-Causing Mutations in Myosin and Myosin Binding Protein-C**

Nandwani, N., Trivedi, D. V., Sarkar, S. S., Morck, M., Ruppel, K., Spudich, J. A.
CELL PRESS.2020: 435A

● **Hypertrophic Cardiomyopathy Mutations With Opposite Effects on [latin sharp s]-myosin Biomechanics Show Similar Structural and Biomechanical Phenotypes in Human Induced Pluripotent Stem Cell Derived Cardiomyocytes (hipsc-cms)**

Schroer, A., Jung, G., Kooiker, K., Adhikari, A., Song Linda, Liu Chao, Ruppel, K., Wu Sean, Pruitt, B., Spudich, J., Bernstein, D.
LIPPINCOTT WILLIAMS & WILKINS.2019

● **Myosin motor domains carrying mutations implicated in early or late onset hypertrophic cardiomyopathy have similar properties.** *The Journal of biological chemistry*

Vera, C. D., Johnson, C. A., Walklate, J. n., Adhikari, A. n., Svcevic, M. n., Mijailovich, S. M., Combs, A. C., Langer, S. J., Ruppel, K. M., Spudich, J. A., Geeves, M. A., Leinwand, L. A.
2019

● **Dilated cardiomyopathy myosin mutants have reduced force-generating capacity** *JOURNAL OF BIOLOGICAL CHEMISTRY*

Ujfalusi, Z., Vera, C. D., Mijailovich, S. M., Svcevic, M., Yu, E., Kawana, M., Ruppel, K. M., Spudich, J. A., Geeves, M. A., Leinwand, L. A.
2018; 293 (23): 9017–29

● **Mechanobiology of Myosin Mutations and Myofibril Remodeling in iPSC-Cardiomyocytes**

Schroer, A., Kooiker, K., Adhikari, A., Ruppel, K., Bernstein, D., Spudich, J., Pruitt, B.
CELL PRESS.2018: 496A–497A

● **A Molecular Approach to Understand the Super-Relaxed State of Myosin Observed in Cardiac Muscle**

Sarkar, S. S., Trivedi, D. V., Morck, M. M., Adhikari, A. S., Ruppel, K. M., Spudich, J. A.
CELL PRESS.2018: 141A

● **Impact of Hypertrophic Cardiomyopathy Mutations and the Role of Myosin Binding Protein-C on the Sequestered State of Myosin**

Trivedi, D. V., Sarkar, S. S., Morck, M. M., Adhikari, A. A., Ruppel, K. M., Spudich, J. A.
CELL PRESS.2018: 317A

● **Controlling Cardiac Contractility at the Single Molecule Level**

Liu, C., Song, D. L., Kawana, M., Ruppel, K. M., Spudich, J. A.
CELL PRESS.2018: 37A

● **SETD3 is an actin histidine methyltransferase that prevents primary dystocia.** *Nature*

Wilkinson, A. W., Diep, J. n., Dai, S. n., Liu, S. n., Ooi, Y. S., Song, D. n., Li, T. M., Horton, J. R., Zhang, X. n., Liu, C. n., Trivedi, D. V., Ruppel, K. M., Vilches-Moure, et al
2018

• **Molecular mechanisms and structural features of cardiomyopathy-causing troponin T mutants in the tropomyosin overlap region** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Gangadharan, B., Sunitha, M. S., Mukherjee, S., Chowdhury, R., Haque, F., Sekar, N., Sowdhamini, R., Spudich, J. A., Mercer, J. A.
2017; 114 (42): 11115–20

• **Biophysical properties of human β-cardiac myosin with converter mutations that cause hypertrophic cardiomyopathy.** *Science advances*

Kawana, M., Sarkar, S. S., Sutton, S., Ruppel, K. M., Spudich, J. A.
2017; 3 (2)

• **How to Measure Load-Dependent Kinetics of Individual Motor Molecules Without a Force-Clamp.** *Methods in enzymology*

Sung, J., Mortensen, K. I., Spudich, J. A., Flyvbjerg, H.
2017; 582: 1–29

• **Early-Onset Hypertrophic Cardiomyopathy Mutations Significantly Increase the Velocity, Force, and Actin-Activated ATPase Activity of Human beta-Cardiac Myosin** *CELL REPORTS*

Adhikari, A. S., Kooiker, K. B., Sarkar, S. S., Liu, C., Bernstein, D., Spudich, J. A., Ruppel, K. M.
2016; 17 (11): 2857–2864

• **How to Measure Separations and Angles Between Intramolecular Fluorescent Markers.** *Methods in enzymology*

Mortensen, K. I., Sung, J., Spudich, J. A., Flyvbjerg, H.
2016; 581: 147–185

• **Effects of hypertrophic and dilated cardiomyopathy mutations on power output by human #-cardiac myosin.** *The Journal of experimental biology*

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, et al
2016; 219 (Pt 2): 161–7

• **Optimized measurements of separations and angles between intra-molecular fluorescent markers** *NATURE COMMUNICATIONS*

Mortensen, K. I., Sung, J., Flyvbjerg, H., Spudich, J. A.
2015; 6

• **Contractility parameters of human β-cardiac myosin with the hypertrophic cardiomyopathy mutation R403Q show loss of motor function.** *Science advances*

Nag, S., Sommese, R. F., Ujfalusi, Z., Combs, A., Langer, S., Sutton, S., Leinwand, L. A., Geeves, M. A., Ruppel, K. M., Spudich, J. A.
2015; 1 (9)

• **A mitochondria-anchored isoform of the actin-nucleating spire protein regulates mitochondrial division** *ELIFE*

Manor, U., Bartholomew, S., Golani, G., Christenson, E., Kozlov, M., Higgs, H., Spudich, J., Lippincott-Schwartz, J.
2015; 4

• **Mechanical coordination in motor ensembles revealed using engineered artificial myosin filaments** *NATURE NANOTECHNOLOGY*

Hariadi, R. F., Sommese, R. F., Adhikari, A. S., Taylor, R. E., Sutton, S., Spudich, J. A., Sivaramakrishnan, S.
2015; 10 (8): 696–700

• **Harmonic force spectroscopy measures load-dependent kinetics of individual human beta-cardiac myosin molecules** *NATURE COMMUNICATIONS*

Sung, J., Nag, S., Mortensen, K. I., Vestergaard, C. L., Sutton, S., Ruppel, K., Flyvbjerg, H., Spudich, J. A.
2015; 6

• **Ensemble Force Changes that Result from Human Cardiac Myosin Mutations and a Small-Molecule Effector** *CELL REPORTS*

Aksel, T., Yu, E. C., Sutton, S., Ruppel, K. M., Spudich, J. A.
2015; 11 (6): 910–920

• **Mechanistic Heterogeneity in Contractile Properties of alpha-Tropomyosin (TPM1) Mutants Associated with Inherited Cardiomyopathies** *JOURNAL OF BIOLOGICAL CHEMISTRY*

Gupte, T. M., Haque, F., Gangadharan, B., Sunitha, M. S., Mukherjee, S., Anandhan, S., Rani, D. S., Mukundan, N., Jambekar, A., Thangaraj, K., Sowdhamini, R., Sommese, R. F., Nag, et al
2015; 290 (11): 7003–7015

- **Establishing disease causality for a novel gene variant in familial dilated cardiomyopathy using a functional in-vitro assay of regulated thin filaments and human cardiac myosin.** *BMC medical genetics*
Pan, S., Sommese, R. F., Sallam, K. I., Nag, S., Sutton, S., Miller, S. M., Spudich, J. A., Ruppel, K. M., Ashley, E. A.
2015; 16 (1): 97-?
- **Observation of correlated X-ray scattering at atomic resolution.** *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*
Mendez, D., Lane, T. J., Sung, J., Sellberg, J., Levard, C., Watkins, H., Cohen, A. E., Soltis, M., Sutton, S., Spudich, J., Pande, V., Ratner, D., Doniach, et al
2014; 369 (1647)
- **Effects of Troponin T Cardiomyopathy Mutations on the Calcium Sensitivity of the Regulated Thin Filament and the Actomyosin Cross-Bridge Kinetics of Human beta-Cardiac Myosin** *PLOS ONE*
Sommese, R. F., Nag, S., Sutton, S., Miller, S. M., Spudich, J. A., Ruppel, K. M.
2013; 8 (12)
- **Memories of Hugh E. Huxley (1924-2013).** *Molecular biology of the cell*
Spudich, J.
2013; 24 (18): 2769-71
- **Molecular consequences of the R453C hypertrophic cardiomyopathy mutation on human beta-cardiac myosin motor function** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Sommese, R. F., Sung, J., Nag, S., Sutton, S., Deacon, J. C., Choe, E., Leinwand, L. A., Ruppel, K., Spudich, J. A.
2013; 110 (31): 12607-12612
- **Single-molecule fluorescence imaging of processive myosin with enhanced background suppression using linear zero-mode waveguides (ZMWs) and convex lens induced confinement (CLIC)** *OPTICS EXPRESS*
Elting, M. W., Leslie, S. R., Churchman, L. S., Korlach, J., McFaul, C. M., Leith, J. S., Levene, M. J., Cohen, A. E., Spudich, J. A.
2013; 21 (1): 1189-1202
- **Future Challenges in Single-Molecule Fluorescence and Laser Trap Approaches to Studies of Molecular Motors** *DEVELOPMENTAL CELL*
Elting, M. W., Spudich, J. A.
2012; 23 (6): 1084-1091
- **Cell-Intrinsic Functional Effects of the alpha-Cardiac Myosin Arg-403-Gln Mutation in Familial Hypertrophic Cardiomyopathy** *BIOPHYSICAL JOURNAL*
Chuan, P., Sivaramakrishnan, S., Ashley, E. A., Spudich, J. A.
2012; 102 (12): 2782-2790
- **The myosin superfamily at a glance** *JOURNAL OF CELL SCIENCE*
Hartman, M. A., Spudich, J. A.
2012; 125 (7): 1627-1632
- **Colocalization of fluorescent probes: accurate and precise registration with nanometer resolution.** *Cold Spring Harbor protocols*
Churchman, L. S., Spudich, J. A.
2012; 2012 (2): 141-149
- **Single-molecule high-resolution colocalization of single probes.** *Cold Spring Harbor protocols*
Churchman, L. S., Spudich, J. A.
2012; 2012 (2): 242-245
- **Integrative structural modelling of the cardiac thin filament: energetics at the interface and conservation patterns reveal a spotlight on period 2 of tropomyosin.** *Bioinformatics and biology insights*
Margaret Sunitha, S., Mercer, J. A., Spudich, J. A., Sowdhamini, R.
2012; 6: 203-223
- **Structural and functional insights on the Myosin superfamily.** *Bioinformatics and biology insights*
Syamaladevi, D. P., Spudich, J. A., Sowdhamini, R.
2012; 6: 11-21
- **Systematic control of protein interaction using a modular ER/K alpha-helix linker** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Sivaramakrishnan, S., Spudich, J. A.

2011; 108 (51): 20467-20472

● **Molecular motors: forty years of interdisciplinary research** *MOLECULAR BIOLOGY OF THE CELL*

Spudich, J. A.

2011; 22 (21): 3936-3939

● **The optical trapping dumbbell assay for nonprocessive motors or motors that turn around filaments.** *Cold Spring Harbor protocols*

Spudich, J. A., Rice, S. E., Rock, R. S., Purcell, T. J., Warrick, H. M.

2011; 2011 (11): 1372-1374

● **Optical traps to study properties of molecular motors.** *Cold Spring Harbor protocols*

Spudich, J. A., Rice, S. E., Rock, R. S., Purcell, T. J., Warrick, H. M.

2011; 2011 (11): 1305-1318

● **Attachment of anti-GFP antibodies to microspheres for optical trapping experiments.** *Cold Spring Harbor protocols*

Spudich, J. A., Rice, S. E., Rock, R. S., Purcell, T. J., Warrick, H. M.

2011; 2011 (11): 1370-1371

● **Proteomics approach to study the functions of Drosophila myosin VI through identification of multiple cargo-binding proteins** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Finan, D., Hartman, A., Spudich, J. A.

2011; 108 (14): 5566-5571

● **Nucleotide Pocket Thermodynamics Measured by EPR Reveal How Energy Partitioning Relates Myosin Speed to Efficiency** *JOURNAL OF MOLECULAR BIOLOGY*

Purcell, T. J., Naber, N., Franks-Skiba, K., Dunn, A. R., Eldred, C. C., Berger, C. L., Malnasi-Csizmadia, A., Spudich, J. A., Swank, D. M., Pate, E., Cooke, R.

2011; 407 (1): 79-91

● **Biochemistry. Molecular motors, beauty in complexity.** *Science*

Spudich, J. A.

2011; 331 (6021): 1143-1144

● **Detailed Tuning of Structure and Intramolecular Communication Are Dispensable for Processive Motion of Myosin VI** *BIOPHYSICAL JOURNAL*

Elting, M. W., Bryant, Z., Liao, J., Spudich, J. A.

2011; 100 (2): 430-439

● **Robust Mechanosensing and Tension Generation by Myosin VI** *JOURNAL OF MOLECULAR BIOLOGY*

Chuan, P., Spudich, J. A., Dunn, A. R.

2011; 405 (1): 105-112

● **Principles of Unconventional Myosin Function and Targeting** *ANNUAL REVIEW OF CELL AND DEVELOPMENTAL BIOLOGY, VOL 27*

Hartman, M. A., Finan, D., Sivaramakrishnan, S., Spudich, J. A.

2011; 27: 133-155

● **HCM and DCM causing mutations affect the velocity and force producing capacity of human beta-cardiac myosin** *Annual Meeting of the American-Society-for-Cell-Biology (ASCB)*

Ruppel, K., Choe, E., Elting, M. W., Sung, J., Shaklee, P., Sutton, S., Leinwand, L. A., Spudich, J. A.

AMER SOC CELL BIOLOGY.2011

● **Helicity of short E-R/K peptides** *PROTEIN SCIENCE*

Sommese, R. F., Sivaramakrishnan, S., Baldwin, R. L., Spudich, J. A.

2010; 19 (10): 2001-2005

● **Determinants of Myosin II Cortical Localization during Cytokinesis** *CURRENT BIOLOGY*

Uehara, R., Goshima, G., Mabuchi, I., Vale, R. D., Spudich, J. A., Griffis, E. R.

2010; 20 (12): 1080-1085

● **Optimized localization analysis for single-molecule tracking and super-resolution microscopy** *NATURE METHODS*

Mortensen, K. I., Churchman, L. S., Spudich, J. A., Flyvbjerg, H.

2010; 7 (5): 377-U59

- **Contribution of the myosin VI tail domain to processive stepping and intramolecular tension sensing** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Dunn, A. R., Chuan, P., Bryant, Z., Spudich, J. A.
2010; 107 (17): 7746-7750
- **Myosin VI: an innovative motor that challenged the swinging lever arm hypothesis** *NATURE REVIEWS MOLECULAR CELL BIOLOGY*
Spudich, J. A., Sivaramakrishnan, S.
2010; 11 (2): 128-137
- **Functional diversity among a family of human skeletal muscle myosin motors** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Resnickow, D. I., Deacon, J. C., Warrick, H. M., Spudich, J. A., Leinwand, L. A.
2010; 107 (3): 1053-1058
- **SINGLE-MOLECULE DUAL-BEAM OPTICAL TRAP ANALYSIS OF PROTEIN STRUCTURE AND FUNCTION** *METHODS IN ENZYMOLOGY, VOL 475: SINGLE MOLECULE TOOLS, PT B*
Sung, J., Sivaramakrishnan, S., Dunn, A. R., Spudich, J. A.
2010; 475: 321-375
- **Combining Single-Molecule Optical Trapping and Small-Angle X-Ray Scattering Measurements to Compute the Persistence Length of a Protein ER/K alpha-Helix** *BIOPHYSICAL JOURNAL*
Sivaramakrishnan, S., Sung, J., Ali, M., Doniach, S., Flyvbjerg, H., Spudich, J. A.
2009; 97 (11): 2993-2999
- **Insights into Human beta-Cardiac Myosin Function from Single Molecule and Single Cell Studies** *JOURNAL OF CARDIOVASCULAR TRANSLATIONAL RESEARCH*
Sivaramakrishnan, S., Ashley, E., Leinwand, L., Spudich, J. A.
2009; 2 (4): 426-440
- **Coupled myosin VI motors facilitate unidirectional movement on an F-actin network** *JOURNAL OF CELL BIOLOGY*
Sivaramakrishnan, S., Spudich, J. A.
2009; 187 (1): 53-60
- **Engineered Myosin VI Motors Reveal Minimal Structural Determinants of Directionality and Processivity** *JOURNAL OF MOLECULAR BIOLOGY*
Liao, J., Elting, M. W., Delp, S. L., Spudich, J. A., Bryant, Z.
2009; 392 (4): 862-867
- **Dynamics of myosin, microtubules, and Kinesin-6 at the cortex during cytokinesis in Drosophila S2 cells** *JOURNAL OF CELL BIOLOGY*
Vale, R. D., Spudich, J. A., Griffis, E. R.
2009; 186 (5): 727-738
- **Velocity, Processivity, and Individual Steps of Single Myosin V Molecules in Live Cells** *BIOPHYSICAL JOURNAL*
Pierobon, P., Achouri, S., Courty, S., Dunn, A. R., Spudich, J. A., Dahan, M., Cappello, G.
2009; 96 (10): 4268-4275
- **Dynamic Organization of Gene Loci and Transcription Compartments in the Cell Nucleus** *BIOPHYSICAL JOURNAL*
Spudich, J. A.
2008; 95 (11): 5003-5004
- **Dynamic charge interactions create surprising rigidity in the ER/K alpha-helical protein motif** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Sivaramakrishnan, S., Spink, B. J., Sim, A. Y., Doniach, S., Spudich, J. A.
2008; 105 (36): 13356-13361
- **Long single alpha-helical tail domains bridge the gap between structure and function of myosin VI** *NATURE STRUCTURAL & MOLECULAR BIOLOGY*
Spink, B. J., Sivaramakrishnan, S., Lipfert, J., Doniach, S., Spudich, J. A.
2008; 15 (6): 591-597
- **Molecular motors: A surprising twist in myosin VI translocation** *CURRENT BIOLOGY*
Spudich, J. A.

2008; 18 (2): R68-R70

● **Predicting allosteric communication in myosin via a pathway of conserved residues** *JOURNAL OF MOLECULAR BIOLOGY*

Tang, S., Liao, J., Dunn, A. R., Altman, R. B., Spudich, J. A., Schmidt, J. P.
2007; 373 (5): 1361-1373

● **The localization of inner centromeric protein (INCENP) at the cleavage furrow is dependent on Kif12 and involves interactions of the N terminus of INCENP with the actin cytoskeleton** *MOLECULAR BIOLOGY OF THE CELL*

Chen, Q., Lakshmikanth, G. S., Spudich, J. A., De Lozanne, A.
2007; 18 (9): 3366-3374

● **PHYS 589-Dissecting the reverse power stroke of myosin VI**

Liao, J., Bryant, Z., Delp, S. L., Spudich, J. A.
AMER CHEMICAL SOC.2007

● **PHYS 631-Tracking single myosin molecules with high temporal resolution and low applied load**

Dunn, A. R., Spudich, J. A.
AMER CHEMICAL SOC.2007

● **Precise positioning of myosin VI on Endocytic vesicles in vivo** *PLOS BIOLOGY*

Altman, D., Goswami, D., Hasson, T., Spudich, J. A., Mayor, S.
2007; 5 (8): 1712-1722

● **Identification of a minimal myosin Va binding site within an intrinsically unstructured domain of melanophilin** *JOURNAL OF BIOLOGICAL CHEMISTRY*

Geething, N. C., Spudich, J. A.
2007; 282 (29): 21518-21528

● **Dynamics of the unbound head during myosin V processive translocation** *NATURE STRUCTURAL & MOLECULAR BIOLOGY*

Dunn, A. R., Spudich, J. A.
2007; 14 (3): 246-248

● **Extending the absorbing boundary method to fit dwell-time distributions of molecular motors with complex kinetic pathways** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Liao, J., Spudich, J. A., Parker, D., Delp, S. L.
2007; 104 (9): 3171-3176

● **Rho Kinase's Role in Myosin Recruitment to the Equatorial Cortex of Mitotic Drosophila S2 Cells Is for Myosin Regulatory Light Chain Phosphorylation** *PLOS ONE*

Dean, S. O., Spudich, J. A.
2006; 1 (2)

● **Molecular motors take tension in stride** *CELL*

Spudich, J. A.
2006; 126 (2): 242-244

● **A non-Gaussian distribution quantifies distances measured with fluorescence localization techniques** *BIOPHYSICAL JOURNAL*

Churchman, L. S., Flyvbjerg, H., Spudich, J. A.
2006; 90 (2): 668-671

● **A force-dependent state controls the coordination of processive myosin V** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Purcell, T. J., Sweeney, H. L., Spudich, J. A.
2005; 102 (39): 13873-13878

● **Distinct pathways control recruitment and maintenance of myosin II at the cleavage furrow during cytokinesis** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Dean, S. O., Rogers, S. L., Stuurman, N., Vale, R. D., Spudich, J. A.
2005; 102 (38): 13473-13478

● **A flexible domain is essential for the large step size and processivity of myosin VI** *MOLECULAR CELL*

Rock, R. S., Ramamurthy, B., Dunn, A. R., Beccafico, S., Rami, B. R., Morris, C., Spink, B. J., Franzini-Armstrong, C., Spudich, J. A., Sweeney, H. L.

2005; 17 (4): 603-609

- **A mitotic kinesin-like protein required for normal karyokinesis, myosin localization to the furrow, and cytokinesis in *Dictyostelium*** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Lakshmikanth, G. S., Warrick, H. M., Spudich, J. A.

2004; 101 (47): 16519-16524

- **Two important polymers cross paths** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Spudich, J. A.

2004; 101 (45): 15825-15826

- **Dictyostelium myosin bipolar thick filament formation: Importance of charge and specific domains of the myosin rod** *PLOS BIOLOGY*

Hostetter, D., Rice, S., Dean, S., Altman, D., McMahon, P. M., Sutton, S., Tripathy, A., Spudich, J. A.

2004; 2 (11): 1880-1892

- **Myosin VI walks hand-over-hand along actin** *NATURE STRUCTURAL & MOLECULAR BIOLOGY*

Okten, Z., Churchman, L. S., Rock, R. S., Spudich, J. A.

2004; 11 (9): 884-887

- **Mechanics and regulation of cytokinesis** *CURRENT OPINION IN CELL BIOLOGY*

Robinson, D. N., Spudich, J. A.

2004; 16 (2): 182-188

- **The mechanism of myosin VI translocation and its load-induced anchoring** *CELL*

Altman, D., Sweeney, H. L., Spudich, J. A.

2004; 116 (5): 737-749

- **Structure of an F-actin trimer disrupted by gelsolin and implications for the mechanism of severing** *JOURNAL OF BIOLOGICAL CHEMISTRY*

Dawson, J. F., Sablin, E. P., Spudich, J. A., Fletterick, R. J.

2003; 278 (2): 1229-1238

- **Building and using optical traps to study properties of molecular motors** *BIOPHOTONICS, PT B*

Rice, S. E., Purcell, T. J., Spudich, J. A.

2003; 361: 112-133

- **Role of the lever arm in the processive stepping of myosin V** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Purcell, T. J., Morris, C., Spudich, J. A., Sweeney, H. L.

2002; 99 (22): 14159-14164

- **How does ATP hydrolysis control actin's associations?** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Sablin, E. P., Dawson, J. F., VanLoock, M. S., Spudich, J. A., Egelman, E. H., Fletterick, R. J.

2002; 99 (17): 10945-10947

- **Differential localization in cells of myosin II heavy chain kinases cytokinesis and polarized migration** *BMC CELL BIOLOGY*

Liang, W. C., Licate, L. S., Warrick, H. M., Spudich, J. A., Egelhoff, T. T.

2002; 3

- **Dynacortin is a novel actin bundling protein that localizes to dynamic actin structures** *JOURNAL OF BIOLOGICAL CHEMISTRY*

Robinson, D. N., Ocon, S. S., Rock, R. S., Spudich, J. A.

2002; 277 (11): 9088-9095

- **Quantitation of the distribution and flux of myosin-II during cytokinesis** *BMC CELL BIOLOGY*

Robinson, D. N., Cavet, G., Warrick, H. M., Spudich, J. A.

2002; 3

- **Myosin VI is a processive motor with a large step size** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Rock, R. S., Rice, S. E., Wells, A. L., Purcell, T. J., Spudich, J. A., Sweeney, H. L.

2001; 98 (24): 13655-13659

- **The myosin relay helix to converter interface remains intact throughout the actomyosin ATPase cycle** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Shih, W. M., Spudich, J. A.
2001; 276 (22): 19491-19494
- **The myosin swinging cross-bridge model** *NATURE REVIEWS MOLECULAR CELL BIOLOGY*
Spudich, J. A.
2001; 2 (5): 387-392
- **Single molecule mechanics and the myosin family of molecular motors**
Spudich, J. A., Shih, W., Murphy, C., Mehta, A., Rock, R., Rief, M.
FEDERATION AMER SOC EXP BIOL.2001: A165–A165
- **A myosin II mutation uncouples ATPase activity from motility and shortens step size** *NATURE CELL BIOLOGY*
Murphy, C. T., Rock, R. S., Spudich, J. A.
2001; 3 (3): 311-315
- **A myosin-II mutation uncouples ATPase activity from motility and shortens step size**
Murphy, C. T., Rock, R. S., Spudich, J. A.
CELL PRESS.2001: 199A–199A
- **In vitro assays of processive myosin motors** *METHODS*
Rock, R. S., Rief, M., Mehta, A. D., Spudich, J. A.
2000; 22 (4): 373-381
- **Characterization of dynacortin, a genetic link between equatorial contractility and global shape control.**
Robinson, D. N., Spudich, J. A.
AMER SOC CELL BIOLOGY.2000: 563A–563A
- **TGF-beta 1 signaling inhibition by a rationally designed HIV TAT-Smad7 fusion protein that causes inhibitory Smad7 translocation**
Lee, F. H., Hostetter, D. R., Zhang, Y., Tan, J. L., DiChiara, M. R., Spudich, J. A., Carter, A. J., Yeung, A. C., Yock, P. G., Cooke, J. P., Topper, J. N.
LIPPINCOTT WILLIAMS & WILKINS.2000: 41–41
- **Dynacortin, a genetic link between equatorial contractility and global shape control discovered by library complementation of a Dictyostelium discoideum cytokinesis mutant** *JOURNAL OF CELL BIOLOGY*
Robinson, D. N., Spudich, J. A.
2000; 150 (4): 823-838
- **Myosin-V stepping kinetics: A molecular model for processivity** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Rief, M., Rock, R. S., Mehta, A. D., Mooseker, M. S., Cheney, R. E., Spudich, J. A.
2000; 97 (17): 9482-9486
- **Towards a molecular understanding of cytokinesis** *TRENDS IN CELL BIOLOGY*
Robinson, D. N., Spudich, J. A.
2000; 10 (6): 228-237
- **Variable surface loops and myosin activity: Accessories to a motor** *JOURNAL OF MUSCLE RESEARCH AND CELL MOTILITY*
Murphy, C. T., Spudich, J. A.
2000; 21 (2): 139-151
- **Mutational analysis of phosphorylation sites in the Dictyostelium myosin II tail: disruption of myosin function by a single charge change** *FEBS LETTERS*
Nock, S., Liang, W. C., Warrick, H. M., Spudich, J. A.
2000; 466 (2-3): 267-272
- **Myosin V is a processive actin-based motor**
Mehta, A. D., Rock, R. S., Rief, M., Spudich, J. A., Mooseker, M. S., Cheney, R. E.
CELL PRESS.2000: 272A–272A
- **A structural model for phosphorylation control of Dictyostelium myosin II thick filament assembly** *JOURNAL OF CELL BIOLOGY*
Liang, W. C., Warrick, H. M., Spudich, J. A.

1999; 147 (5): 1039-1047

● **Dynacortin, a genetic link between the global cortical tension generating system of RacE and coronin and the equatorial cortical tension generating system of cortexillin I and myosin II.**

Robinson, D. N., Spudich, J. A.

AMER SOC CELL BIOLOGY.1999: 133A-133A

● **Single molecule mechanical studies of myosin V**

Mehta, A. D., Rock, R., Rief, M., Spudich, J., Mooseker, M., Cheney, R.

AMER SOC CELL BIOLOGY.1999: 163A-163A

● **Myosin-V is a processive actin-based motor NATURE**

Mehta, A. D., Rock, R. S., Rief, M., Spudich, J. A., Mooseker, M. S., Cheney, R. E.

1999; 400 (6744): 590-593

● **Biomechanics, one molecule at a time JOURNAL OF BIOLOGICAL CHEMISTRY**

Mehta, A. D., Rief, M., Spudich, J. A.

1999; 274 (21): 14517-14520

● **The sequence of the myosin 50-20K loop affects myosin's affinity for actin throughout the actin-myosin ATPase cycle and its maximum ATPase activity BIOCHEMISTRY**

Murphy, C. T., Spudich, J. A.

1999; 38 (12): 3785-3792

● **Specialized conservation of surface loops of myosin: Evidence that loops are involved in determining functional characteristics JOURNAL OF MOLECULAR BIOLOGY**

Goodson, H. V., Warrick, H. M., Spudich, J. A.

1999; 287 (1): 173-185

● **Single-molecule biomechanics with optical methods SCIENCE**

Mehta, A. D., Rief, M., Spudich, J. A., Smith, D. A., Simmons, R. M.

1999; 283 (5408): 1689-1695

● **Myosin II localization during cytokinesis occurs by a mechanism that does not require its motor domain PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA**

Zang, J. H., Spudich, J. A.

1998; 95 (23): 13652-13657

● **Genetic analysis of Dictyostelium cytokinesis.**

Robinson, D. N., Spudich, J. A.

AMER SOC CELL BIOLOGY.1998: 400A-400A

● **Kinetic analysis of "uncoupled" mutant myosins**

Murphy, C. T., Spudich, J. A.

AMER SOC CELL BIOLOGY.1998: 144A-144A

● **MLCK-A, an unconventional myosin light chain kinase from Dictyostelium, is activated by a cGMP-dependent pathway PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA**

Silveira, L. A., Smith, J. L., Tan, J. L., Spudich, J. A.

1998; 95 (22): 13000-13005

● **Direct regulation of myosin by nitric oxide**

Tan, J. L., Heidecker, W., Cohen, J. D., Fowler, M. B., Spudich, J. A.

LIPPINCOTT WILLIAMS & WILKINS.1998: 682-82

● **Nucleotide-dependent conformational change near the fulcrum region in Dictyostelium myosin II PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA**

Liang, W. C., Spudich, J. A.

1998; 95 (22): 12844-12847

● **Kinetic characterization of myosin head fragments with long-lived myosin center dot ATP states BIOCHEMISTRY**

- Friedman, A. L., Geeves, M. A., Manstein, D. J., Spudich, J. A.
1998; 37 (27): 9679-9687
- **Single molecule biochemistry using optical tweezers** *FEBS LETTERS*
Mehta, A. D., Pullen, K. A., Spudich, J. A.
1998; 430 (1-2): 23-27
 - **Conditional loss-of-myosin-II-function mutants reveal a position in the tail that is critical for filament nucleation** *MOLECULAR CELL*
Moores, S. L., Spudich, J. A.
1998; 1 (7): 1043-1050
 - **Dictyostelium myosin 25-50K loop substitutions specifically affect ADP release rates** *BIOCHEMISTRY*
Murphy, C. T., Spudich, J. A.
1998; 37 (19): 6738-6744
 - **Cysteine engineering studies on Dictyostelium myosin II**
Shih, W. M., Spudich, J. A.
CELL PRESS.1998: A130-A130
 - **Single molecule myosin mechanics examined using optical tweezers**
Mehta, A. D., Spudich, J. A.
CELL PRESS.1998: A225-A225
 - **New strategies in site-specific immobilization of proteins on micro- and nanostructured surfaces**
Wagner, P., Nock, S., Heidecker, M., Shih, W., Ulman, N., Spudich, J. A.
CELL PRESS.1998: A295-A295
 - **Reflections of a lucid dreamer: Optical trap design considerations** *METHODS IN CELL BIOLOGY, VOL 55*
Mehta, A. D., Finer, J. T., Spudich, J. A.
1998; 55: 47-69
 - **Single myosin molecule mechanics** *Workshop on Molecular Biophysics of the Cytoskeleton - Microtubule Formation, Structure, Function, and Interactions*
Mehta, A. D., Spudich, J. A.
JAI PRESS INC.1998: 229-270
 - **Use of optical traps in single-molecule study of nonprocessive biological motors** *MOLECULAR MOTORS AND THE CYTOSKELETON, PT B*
Mehta, A. D., Finer, J. T., Spudich, J. A.
1998; 298: 436-459
 - **On the role of myosin-II in cytokinesis: Division of Dictyostelium cells under adhesive and nonadhesive conditions** *MOLECULAR BIOLOGY OF THE CELL*
Zang, J. H., Cavet, G., Sabry, J. H., Wagner, P., Moores, S. L., Spudich, J. A.
1997; 8 (12): 2617-2629
 - **Myosin heavy chain phosphorylation sites regulate myosin localization during cytokinesis in live cells** *MOLECULAR BIOLOGY OF THE CELL*
Sabry, J. H., Moores, S. L., Ryan, S., Zang, J. H., Spudich, J. A.
1997; 8 (12): 2605-2615
 - **The role of the 50-20K loop in myosin function**
Murphy, C. T., Spudich, J. A.
AMER SOC CELL BIOLOGY.1997: 916-916
 - **Cold-sensitive mutants G680V and G691C of Dictyostelium myosin II confer dramatically different biochemical defects** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Patterson, B., Ruppel, K. M., Wu, Y., Spudich, J. A.
1997; 272 (44): 27612-27617
 - **Reversible, site-specific immobilization of polyarginine-tagged fusion proteins on mica surfaces** *FEBS LETTERS*
Nock, S., Spudich, J. A., Wagner, P.
1997; 414 (2): 233-238

- **Single myosin molecule mechanics: Nanometer steps, piconewton forces, millisecond kinetics, and stiffness of elastic elements measured with a dual-beam laser trap.**
Spudich, J. A., Mehta, A.
FEDERATION AMER SOC EXP BIOL.1997: A855–A855
- **Detection of single-molecule interactions using correlated thermal diffusion** *Colloquium on Genetics and the Origin of Species*
Mehta, A. D., Finer, J. T., Spudich, J. A.
NATL ACAD SCIENCES.1997: 7927–31
- **Phenotypically selected mutations in myosin's actin binding domain demonstrate intermolecular contacts important for motor functions** *BIOCHEMISTRY*
Giese, K. C., Spudich, J. A.
1997; 36 (28): 8465-8473
- **Site-specific immobilization of biomolecules on micro- and nanofabricated gold and silicon surfaces.**
Wagner, P., Spudich, A., Ulman, N., Chidsey, C. E., Spudich, J. A.
CELL PRESS.1997: MP452–MP452
- **Correlated motion of actin filament segments on either side of a single attached crossbridge.**
Mehta, A. D., Spudich, J. A.
CELL PRESS.1997: WAMJ1–WAMJ1
- **Probing conformational changes in myosin during the ATPase cycle.**
Liang, W. C., Shih, W., Spudich, J. A.
CELL PRESS.1997: MPMA7–MPMA7
- **Bioreactive self-assembled monolayers on hydrogen-passivated Si(111) as a new class of atomically flat substrates for biological scanning probe microscopy** *JOURNAL OF STRUCTURAL BIOLOGY*
Wagner, P., Nock, S., Spudich, J. A., VOLKMUTH, W. D., Chu, S., Cicero, R. L., Wade, C. P., Linford, M. R., Chidsey, C. E.
1997; 119 (2): 189–201
- **Single molecule myosin mechanics measured using optical trapping** *NATO Advanced Study Institute on Structure and Function of Interacting Protein Domains in Signal and Energy Transduction*
Mehta, A. D., Spudich, J. A.
SPRINGER-VERLAG BERLIN.1997: 247–259
- **Cysteine engineering studies on Dictyostelium myosin II**
Shih, W. M., Liang, W. C., Spudich, J. A.
AMER SOC CELL BIOLOGY.1996: 1139–1139
- **The role of nonconserved surface loops in myosin function**
Murphy, C. T., Uyeda, T. Q., Spudich, J. A.
AMER SOC CELL BIOLOGY.1996: 1141–1141
- **Activation of Dictyostelium myosin light chain kinase a by phosphorylation of Thr166** *EMBO JOURNAL*
Smith, J. L., Silveira, L. A., Spudich, J. A.
1996; 15 (22): 6075-6083
- **Myosin light chain kinase (MLCK) gene disruption in Dictyostelium: A role for MLCK-A in cytokinesis and evidence for multiple MLCKs** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Smith, J. L., Silveira, L. A., Spudich, J. A.
1996; 93 (22): 12321-12326
- **The Dictyostelium dual-specificity kinase splA is essential for spore differentiation** *DEVELOPMENT*
Nuckolls, G. H., Osherov, N., Loomis, W. F., Spudich, J. A.
1996; 122 (10): 3295-3305
- **Structure-function studies of the myosin motor domain: Importance of the 50-kDa cleft** *MOLECULAR BIOLOGY OF THE CELL*
Ruppel, K. M., Spudich, J. A.
1996; 7 (7): 1123-1136

- **Synthetic lethality screen identifies a novel yeast myosin I gene (MYO5): Myosin I proteins are required for polarization of the actin cytoskeleton** *JOURNAL OF CELL BIOLOGY*
Goodson, H. V., Anderson, B. L., Warrick, H. M., Pon, L. A., Spudich, J. A.
1996; 133 (6): 1277-1291
- **Cold-sensitive mutations of Dictyostelium myosin heavy chain highlight functional domains of the myosin motor** *GENETICS*
Patterson, B., Spudich, J. A.
1996; 143 (2): 801-810
- **Quantitative measurements of force and displacement using an optical trap** *BIOPHYSICAL JOURNAL*
Simmons, R. M., Finer, J. T., Chu, S., Spudich, J. A.
1996; 70 (4): 1813-1822
- **Detection of sub-8-nm movements of kinesin by high-resolution optical-trap microscopy** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Coppin, C. M., Finer, J. T., Spudich, J. A., Vale, R. D.
1996; 93 (5): 1913-1917
- **Myosin dynamics in live Dictyostelium cells** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Moores, S. L., Sabry, J. H., Spudich, J. A.
1996; 93 (1): 443-446
- **Structure-function analysis of the motor domain of myosin** *ANNUAL REVIEW OF CELL AND DEVELOPMENTAL BIOLOGY*
Ruppel, K. M., Spudich, J. A.
1996; 12: 543-573
- **A NOVEL POSITIVE SELECTION FOR IDENTIFYING COLD-SENSITIVE MYOSIN-II MUTANTS IN DICTYOSTELIUM** *GENETICS*
Patterson, B., Spudich, J. A.
1995; 140 (2): 505-515
- **MYOSIN STRUCTURE-FUNCTION - A COMBINED MUTAGENESIS-CRYSTALLOGRAPHY APPROACH** *CURRENT OPINION IN STRUCTURAL BIOLOGY*
Ruppel, K. M., Lorenz, M., Spudich, J. A.
1995; 5 (2): 181-186
- **Measurement of the isometric force exerted by a single kinesin molecule.** *Biophysical journal*
Coppin, C. M., Finer, J. T., Spudich, J. A., Vale, R. D.
1995; 68 (4): 242S-244S
- **MEASUREMENT OF THE ISOMETRIC FORCE EXERTED BY A SINGLE KINESIN MOLECULE** *7th Biophysical Discussions on Molecular Motors - Structure, Mechanics and Energy Transduction*
Coppin, C. M., Finer, J. T., Spudich, J. A., Vale, R. D.
BIOPHYSICAL SOCIETY.1995: S242-S244
- **CHARACTERIZATION OF SINGLE ACTIN-MYOSIN INTERACTIONS** *7th Biophysical Discussions on Molecular Motors - Structure, Mechanics and Energy Transduction*
Finer, J. T., Mehta, A. D., Spudich, J. A.
BIOPHYSICAL SOCIETY.1995: S291-S297
- **Characterization of single actin-myosin interactions.** *Biophysical journal*
Finer, J. T., Mehta, A. D., Spudich, J. A.
1995; 68 (4): 291S-296S
- **MYOSIN MOTOR FUNCTION - STRUCTURAL AND MUTAGENIC APPROACHES** *CURRENT OPINION IN CELL BIOLOGY*
Ruppel, K. M., Spudich, J. A.
1995; 7 (1): 89-93
- **IDENTIFICATION AND MOLECULAR CHARACTERIZATION OF A YEAST MYOSIN-I** *CELL MOTILITY AND THE CYTOSKELETON*
Goodson, H. V., Spudich, J. A.
1995; 30 (1): 73-84

- **Myosin structure and function** *Cold Spring Harbor Symposia on Quantitative Biology - Protein Kinesis: The Dynamics of Protein Trafficking and Stability*
Spudich, J. A., Finer, J., Simmons, B., Ruppel, K., Patterson, B., Uyeda, T.
COLD SPRING HARBOR LAB PRESS, PUBLICATIONS DEPT.1995: 783–791
- **MOW MOLECULAR MOTORS WORK** *NATURE*
Spudich, J. A.
1994; 372 (6506): 515-518
- **MOLECULAR-GENETIC TRUNCATION ANALYSIS OF FILAMENT ASSEMBLY AND PHOSPHORYLATION DOMAINS OF DICTYOSTELIUM MYOSIN HEAVY-CHAIN** *JOURNAL OF CELL SCIENCE*
Lee, R. J., Egelhoff, T. T., Spudich, J. A.
1994; 107: 2875-2886
- **STAGE-SPECIFIC REQUIREMENT FOR MYOSIN-II DURING DICTYOSTELIUM DEVELOPMENT** *DEVELOPMENT*
Springer, M. L., Patterson, B., Spudich, J. A.
1994; 120 (9): 2651-2660
- **ROLE OF HIGHLY CONSERVED LYSINE-130 OF MYOSIN MOTOR DOMAIN - IN-VIVO AND IN-VITRO CHARACTERIZATION OF SITE-SPECIFICALLY MUTATED MYOSIN** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Ruppel, K. M., Uyeda, T. Q., Spudich, J. A.
1994; 269 (29): 18773-18780
- **ENZYMATIC-ACTIVITIES CORRELATE WITH CHIMERIC SUBSTITUTIONS AT THE ACTIN-BINDING FACE OF MYOSIN** *NATURE*
Uyeda, T. Q., Ruppel, K. M., Spudich, J. A.
1994; 368 (6471): 567-569
- **FUNCTIONAL-ANALYSIS OF A CARDIAC MYOSIN ROD IN DICTYOSTELIUM-DISCOIDEUM** *CELL MOTILITY AND THE CYTOSKELETON*
LEBLANCSTRACESKI, J. M., Fukui, Y., Sohn, R. L., Spudich, J. A., Leinwand, L. A.
1994; 27 (4): 313-326
- **A FUNCTIONAL RECOMBINANT MYOSIN-II LACKING A REGULATORY LIGHT-CHAIN BINDING-SITE** *SCIENCE*
Uyeda, T. Q., Spudich, J. A.
1993; 262 (5141): 1867-1870
- **DICTYOSTELIUM MYOSIN HEAVY-CHAIN PHOSPHORYLATION SITES REGULATE MYOSIN FILAMENT ASSEMBLY AND LOCALIZATION IN-VIVO** *CELL*
Egelhoff, T. T., Lee, R. J., Spudich, J. A.
1993; 75 (2): 363-371
- **THE UNCONVENTIONAL MYOSIN ENCODED BY THE MYOA GENE PLAYS A ROLE IN DICTYOSTELIUM MOTILITY** *MOLECULAR BIOLOGY OF THE CELL*
Titus, M. A., Wessels, D., Spudich, J. A., Soll, D.
1993; 4 (2): 233-246
- **MOLECULAR EVOLUTION OF THE MYOSIN FAMILY - RELATIONSHIPS DERIVED FROM COMPARISONS OF AMINO-ACID-SEQUENCES** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Goodson, H. V., Spudich, J. A.
1993; 90 (2): 659-663
- **IN-VITRO METHODS FOR MEASURING FORCE AND VELOCITY OF THE ACTIN-MYOSIN INTERACTION USING PURIFIED PROTEINS** *METHODS IN CELL BIOLOGY, VOL 39*
Warrick, H. M., Simmons, R. M., Finer, J. T., Uyeda, T. Q., Chu, S., Spudich, J. A.
1993; 39: 1-21
- **A DICTYOSTELIUM MYOSIN-II LACKING A PROXIMAL 58-KDA PORTION OF THE TAIL IS FUNCTIONAL INVITRO AND INVIVO** *MOLECULAR BIOLOGY OF THE CELL*
KUBALEK, E. W., Uyeda, T. Q., Spudich, J. A.
1992; 3 (12): 1455-1462

- **MEMBRANE-BOUND DICTYOSTELIUM MYOSIN HEAVY-CHAIN KINASE - A DEVELOPMENTALLY REGULATED SUBSTRATE-SPECIFIC MEMBER OF THE PROTEIN-KINASE-C FAMILY** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Ravid, S., Spudich, J. A.
1992; 89 (13): 5877-5881
- **YEAST ACTIN-FILAMENTS DISPLAY ATP-DEPENDENT SLIDING MOVEMENT OVER SURFACES COATED WITH RABBIT MUSCLE MYOSIN** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Kron, S. J., Drubin, D. G., Botstein, D., Spudich, J. A.
1992; 89 (10): 4466-4470
- **CONTROL OF NONMUSCLE MYOSINS BY PHOSPHORYLATION** *ANNUAL REVIEW OF BIOCHEMISTRY*
Tan, J. L., Ravid, S., Spudich, J. A.
1992; 61: 721-759
- **Molecular genetic approaches to the cytoskeleton in Dictyostelium.** *Current opinion in genetics & development*
Patterson, B., Ruppel, K. M., Spudich, J. A.
1991; 1 (3): 378-382
- **CHARACTERIZATION AND BACTERIAL EXPRESSION OF THE DICTYOSTELIUM MYOSIN LIGHT CHAIN KINASE cDNA - IDENTIFICATION OF AN AUTOINHIBITORY DOMAIN** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Tan, J. L., Spudich, J. A.
1991; 266 (24): 16044-16049
- **QUANTIZED VELOCITIES AT LOW MYOSIN DENSITIES IN AN INVITRO MOTILITY ASSAY** *NATURE*
Uyeda, T. Q., Warrick, H. M., Kron, S. J., Spudich, J. A.
1991; 352 (6333): 307-311
- **MOLECULAR-GENETICS OF CELL-MIGRATION - DICTYOSTELIUM AS A MODEL SYSTEM** *TRENDS IN GENETICS*
Egelhoff, T. T., Spudich, J. A.
1991; 7 (5): 161-166
- **SPATIAL AND TEMPORAL CONTROL OF NONMUSCLE MYOSIN LOCALIZATION - IDENTIFICATION OF A DOMAIN THAT IS NECESSARY FOR MYOSIN FILAMENT DISASSEMBLY INVIVO** *JOURNAL OF CELL BIOLOGY*
Egelhoff, T. T., Brown, S. S., Spudich, J. A.
1991; 112 (4): 677-688
- **AN APPROACH TO RECONSTITUTING MOTILITY OF SINGLE MYOSIN MOLECULES** *WORKSHOP ON MOTOR PROTEINS*
Kron, S. J., Uyeda, T. Q., Warrick, H. M., Spudich, J. A.
COMPANY OF BIOLOGISTS LTD.1991: 129-133
- **ASSAYS FOR ACTIN SLIDING MOVEMENT OVER MYOSIN-COATED SURFACES** *METHODS IN ENZYMOLOGY*
Kron, S. J., Toyoshima, Y. Y., Uyeda, T. Q., Spudich, J. A.
1991; 196: 399-416
- **MOLECULAR GENETIC TOOLS FOR STUDY OF THE CYTOSKELETON IN DICTYOSTELIUM** *METHODS IN ENZYMOLOGY*
Egelhoff, T. T., Titus, M. A., Manstein, D. J., Ruppel, K. M., Spudich, J. A.
1991; 196: 319-334
- **MANIPULATION AND EXPRESSION OF MOLECULAR MOTORS IN DICTYOSTELIUM-DISCOIDEUM** *WORKSHOP ON MOTOR PROTEINS*
Manstein, D. J., Ruppel, K. M., KUBALEK, L., Spudich, J. A.
COMPANY OF BIOLOGISTS LTD.1991: 63-65
- **GENETICALLY ENGINEERED TRUNCATED MYOSIN IN DICTYOSTELIUM - THE CARBOXYL-TERMINAL REGULATORY DOMAIN IS NOT REQUIRED FOR THE DEVELOPMENTAL CYCLE** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
OHALLORAN, T. J., Spudich, J. A.
1990; 87 (20): 8110-8114
- **THE MYOSIN STEP SIZE - MEASUREMENT OF THE UNIT DISPLACEMENT PER ATP HYDROLYZED IN AN INVITRO ASSAY** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

- Toyoshima, Y. Y., Kron, S. J., Spudich, J. A.
1990; 87 (18): 7130-7134
- **DICTYOSTELIUM MYOSIN LIGHT CHAIN KINASE - PURIFICATION AND CHARACTERIZATION** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Tan, J. L., Spudich, J. A.
1990; 265 (23): 13818-13824
 - **MYOSIN STEP SIZE - ESTIMATION FROM SLOW SLIDING MOVEMENT OF ACTIN OVER LOW-DENSITIES OF HEAVY-MEROMYOSIN** *JOURNAL OF MOLECULAR BIOLOGY*
Uyeda, T. Q., Kron, S. J., Spudich, J. A.
1990; 214 (3): 699-710
 - **SUBTILISIN CLEAVAGE OF ACTIN INHIBITS INVITRO SLIDING MOVEMENT OF ACTIN-FILAMENTS OVER MYOSIN** *JOURNAL OF CELL BIOLOGY*
SCHWYTER, D. H., Kron, S. J., Toyoshima, Y. Y., Spudich, J. A., Reisler, E.
1990; 111 (2): 465-470
 - **DEVELOPMENTALLY REGULATED PROTEIN-TYROSINE KINASE GENES IN DICTYOSTELIUM-DISCOIDEUM** *MOLECULAR AND CELLULAR BIOLOGY*
Tan, J. L., Spudich, J. A.
1990; 10 (7): 3578-3583
 - **PURIFICATION OF A FUNCTIONAL RECOMBINANT MYOSIN FRAGMENT FROM DICTYOSTELIUM-DISCOIDEUM** *ANNALS OF THE NEW YORK ACADEMY OF SCIENCES*
Ruppel, K. M., Egelhoff, T. T., Spudich, J. A.
1990; 582: 147-155
 - **Molecular genetics: a key to the cytoskeleton's closet.** *Current opinion in cell biology*
Titus, M. A., Warrick, H. M., Spudich, J. A.
1990; 2 (1): 116-120
 - **Molecular genetics: a key to the cytoskeleton's closet** *CURRENT OPINION IN CELL BIOLOGY*
Titus, M. A., Warrick, H. M., Spudich, J. A.
1990; 2 (1): 116-120
 - **STRUCTURE AND FUNCTION OF THE CYTOSKELETON OF A DICTYOSTELIUM MYOSIN-DEFECTIVE MUTANT** *JOURNAL OF CELL BIOLOGY*
Fukui, Y., DeLozanne, A., Spudich, J. A.
1990; 110 (2): 367-378
 - **COMPLEMENTATION OF MYOSIN NULL MUTANTS IN DICTYOSTELIUM-DISCOIDEUM BY DIRECT FUNCTIONAL SELECTION** *DEVELOPMENTAL BIOLOGY*
Egelhoff, T. T., Manstein, D. J., Spudich, J. A.
1990; 137 (2): 359-367
 - **EXPRESSION OF DICTYOSTELIUM MYOSIN TAIL SEGMENTS IN ESCHERICHIA-COLI - DOMAINS REQUIRED FOR ASSEMBLY AND PHOSPHORYLATION** *JOURNAL OF CELL BIOLOGY*
OHALLORAN, T. J., Ravid, S., Spudich, J. A.
1990; 110 (1): 63-70
 - **PURIFICATION OF A FUNCTIONAL RECOMBINANT MYOSIN FRAGMENT FROM DICTYOSTELIUM-DISCOIDEUM** *WORKSHOP ON CYTOKINESIS : MECHANISMS OF FURROW FORMATION DURING CELL DIVISION*
Ruppel, K. M., Egelhoff, T. T., Spudich, J. A.
NEW YORK ACAD SCIENCES.1990: 147-155
 - **EXPRESSION AND CHARACTERIZATION OF A FUNCTIONAL MYOSIN HEAD FRAGMENT IN DICTYOSTELIUM-DISCOIDEUM** *SCIENCE*
Manstein, D. J., Ruppel, K. M., Spudich, J. A.
1989; 246 (4930): 656-658
 - **IN PURSUIT OF MYOSIN FUNCTION** *CELL REGULATION*
Spudich, J. A.

1989; 1 (1): 1-11

• **MULTIPLE ACTIN-BASED MOTOR GENES IN DICTYOSTELIUM CELL REGULATION**

Titus, M. A., Warrick, H. M., Spudich, J. A.

1989; 1 (1): 55-63

• **CAPPING OF SURFACE-RECEPTORS AND CONCOMITANT CORTICAL TENSION ARE GENERATED BY CONVENTIONAL MYOSIN NATURE**

Pasternak, C., Spudich, J. A., Elson, E. L.

1989; 341 (6242): 549-551

• **BIDIRECTIONAL MOVEMENT OF ACTIN-FILAMENTS ALONG TRACKS OF MYOSIN HEADS NATURE**

Toyoshima, Y. Y., Toyoshima, C., Spudich, J. A.

1989; 341 (6238): 154-156

• **MYOSIN HEAVY-CHAIN KINASE FROM DEVELOPED DICTYOSTELIUM CELLS - PURIFICATION AND CHARACTERIZATION JOURNAL OF BIOLOGICAL CHEMISTRY**

Ravid, S., Spudich, J. A.

1989; 264 (25): 15144-15150

• **INTERMOLECULAR VERSUS INTRAMOLECULAR INTERACTIONS OF DICTYOSTELIUM MYOSIN - POSSIBLE REGULATION BY HEAVY-CHAIN PHOSPHORYLATION JOURNAL OF CELL BIOLOGY**

Pasternak, C., Flicker, P. F., Ravid, S., Spudich, J. A.

1989; 109 (1): 203-210

• **HYGROMYCIN RESISTANCE AS A SELECTABLE MARKER IN DICTYOSTELIUM-DISCOIDEUM MOLECULAR AND CELLULAR BIOLOGY**

Egelhoff, T. T., Brown, S. S., Manstein, D. J., Spudich, J. A.

1989; 9 (5): 1965-1968

• **LINKAGE ANALYSIS OF THE MYOSIN HEAVY-CHAIN GENE IN DICTYOSTELIUM-DISCOIDEUM USING A MUTATION GENERATED BY HOMOLOGOUS RECOMBINATION MOLECULAR AND GENERAL GENETICS**

Welker, D. L., DeLozanne, A., Spudich, J. A.

1989; 216 (2-3): 498-502

• **GENE REPLACEMENT IN DICTYOSTELIUM - GENERATION OF MYOSIN NULL MUTANTS EMBO JOURNAL**

Manstein, D. J., Titus, M. A., DeLozanne, A., Spudich, J. A.

1989; 8 (3): 923-932

• **CHEMOATTRACTANT-ELICITED TRANSLOCATION OF MYOSIN IN MOTILE DICTYOSTELIUM CELL MOTILITY AND THE CYTOSKELETON**

Nachmias, V. T., Fukui, Y., Spudich, J. A.

1989; 13 (3): 158-169

• **COEXPRESSION AND ASSEMBLY OF MYOSIN HEAVY-CHAIN AND MYOSIN LIGHT CHAIN IN ESCHERICHIA-COLI PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA**

McNally, E. M., Goodwin, E. B., Spudich, J. A., Leinwand, L. A.

1988; 85 (19): 7270-7273

• **Codon preference in Dictyostelium discoideum. Nucleic acids research**

Warrick, H. M., Spudich, J. A.

1988; 16 (14A): 6617-6635

• **CODON PREFERENCE IN DICTYOSTELIUM-DISCOIDEUM NUCLEIC ACIDS RESEARCH**

Warrick, H. M., Spudich, J. A.

1988; 16 (14): 6617-6635

• **SIGNAL TRANSDUCTION, CHEMOTAXIS, AND CELL-AGGREGATION IN DICTYOSTELIUM-DISCOIDEUM CELLS WITHOUT MYOSIN HEAVY-CHAIN DEVELOPMENTAL BIOLOGY**

Peters, D. J., Knecht, D. A., Loomis, W. F., DeLozanne, A., Spudich, J., VANHAASTERT, P. J.

1988; 128 (1): 158-163

• **CELL MOTILITY AND CHEMOTAXIS IN DICTYOSTELIUM AMEBAE LACKING MYOSIN HEAVY-CHAIN DEVELOPMENTAL BIOLOGY**

- Wessels, D., Soll, D. R., Knecht, D., Loomis, W. F., DeLozanne, A., Spudich, J.
1988; 128 (1): 164-177
- **EXPRESSION IN ESCHERICHIA-COLI OF A FUNCTIONAL DICTYOSTELIUM MYOSIN TAIL FRAGMENT** *JOURNAL OF CELL BIOLOGY*
DeLozanne, A., Berlot, C. H., Leinwand, L. A., Spudich, J. A.
1987; 105 (6): 2999-3005
 - **MOVEMENT OF MYOSIN FRAGMENTS INVITRO - DOMAINS INVOLVED IN FORCE PRODUCTION** *CELL*
Hynes, T. R., Block, S. M., White, B. T., Spudich, J. A.
1987; 48 (6): 953-963
 - **CHEMOATTRACTANT-ELICITED INCREASES IN DICTYOSTELIUM MYOSIN PHOSPHORYLATION ARE DUE TO CHANGES IN MYOSIN LOCALIZATION AND INCREASES IN KINASE-ACTIVITY** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Berlot, C. H., Devreotes, P. N., Spudich, J. A.
1987; 262 (8): 3918-3926
 - **MYOSIN STRUCTURE AND FUNCTION IN CELL MOTILITY** *ANNUAL REVIEW OF CELL BIOLOGY*
Warrick, H. M., Spudich, J. A.
1987; 3: 379-421
 - **INTRODUCTORY-REMARKS AND SOME BIOCHEMICAL CONSIDERATIONS** *METHODS IN CELL BIOLOGY*
Spudich, J. A.
1987; 28: 3-8
 - **CONSERVED PROTEIN DOMAINS IN A MYOSIN HEAVY-CHAIN GENE FROM DICTYOSTELIUM-DISCOIDEUM** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Warrick, H. M., DeLozanne, A., Leinwand, L. A., Spudich, J. A.
1986; 83 (24): 9433-9437
 - **MYOSIN MOVEMENT INVITRO - A QUANTITATIVE ASSAY USING ORIENTED ACTIN CABLES FROM NITELLA** *METHODS IN ENZYMOLOGY*
Sheetz, M. P., Block, S. M., Spudich, J. A.
1986; 134: 531-544
 - **MONOClonAL-ANTIBODIES AGAINST 7 SITES ON THE HEAD AND TAIL OF DICTYOSTELIUM MYOSIN** *JOURNAL OF CELL BIOLOGY*
Peltz, G., Spudich, J. A., Parham, P.
1985; 100 (4): 1016-1023
 - **LIGHT CHAIN PHOSPHORYLATION REGULATES THE MOVEMENT OF SMOOTH-MUSCLE MYOSIN ON ACTIN-FILAMENTS** *JOURNAL OF CELL BIOLOGY*
Sellers, J. R., Spudich, J. A., Sheetz, M. P.
1985; 101 (5): 1897-1902
 - **CLONING AND CHARACTERIZATION OF A NONMUSCLE MYOSIN HEAVY-CHAIN cDNA** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
DeLozanne, A., Lewis, M., Spudich, J. A., LEINWAD, L. A.
1985; 82 (20): 6807-6810
 - **CHEMOATTRACTANT-ELICITED INCREASES IN MYOSIN PHOSPHORYLATION IN DICTYOSTELIUM** *CELL*
Berlot, C. H., Spudich, J. A., Devreotes, P. N.
1985; 43 (1): 307-314
 - **SITE-SPECIFIC INHIBITION OF MYOSIN-MEDIATED MOTILITY INVITRO BY MONOClonAL-ANTIBODIES** *JOURNAL OF CELL BIOLOGY*
Flicker, P. F., Peltz, G., Sheetz, M. P., Parham, P., Spudich, J. A.
1985; 100 (4): 1024-1030
 - **CA-2+-DEPENDENT BINDING OF SEVERIN TO ACTIN - A ONE-TO-ONE COMPLEX IS FORMED** *JOURNAL OF CELL BIOLOGY*
Giffard, R. G., Weeds, A. G., Spudich, J. A.
1984; 98 (5): 1796-1803

- **MONOClonal-ANTIBODIES PREPARED AGAINST DICTYOSTELIUM ACTIN - CHARACTERIZATION AND INTERACTIONS WITH ACTIN** *JOURNAL OF CELL BIOLOGY*
Simpson, P. A., Spudich, J. A., Parham, P.
1984; 99 (1): 287-295
- **CA-2+-SENSITIVE ISOLATION OF A CORTICAL ACTIN MATRIX FROM DICTYOSTELIUM AMEBAS** *JOURNAL OF MUSCLE RESEARCH AND CELL MOTILITY*
Giffard, R. G., Spudich, J. A., Spudich, A.
1983; 4 (1): 115-131
- **MOVEMENT OF MYOSIN-COATED STRUCTURES ON ACTIN CABLES** *CELL MOTILITY AND THE CYTOSKELETON*
Sheetz, M. P., Spudich, J. A.
1983; 3 (5-6): 485-489
- **MOVEMENT OF MYOSIN-COATED FLUORESCENT BEADS ON ACTIN CABLES INVITRO** *NATURE*
Sheetz, M. P., Spudich, J. A.
1983; 303 (5912): 31-35
- **A 40,000-DALTON PROTEIN FROM DICTYOSTELIUM-DISCOIDEUM AFFECTS ASSEMBLY PROPERTIES OF ACTIN IN A CA-2+-DEPENDENT MANNER** *JOURNAL OF CELL BIOLOGY*
Brown, S. S., Yamamoto, K., Spudich, J. A.
1982; 93 (1): 205-210
- **DICTYOSTELIUM-DISCOIDEUM - METHODS AND PERSPECTIVES FOR STUDY OF CELL MOTILITY** *METHODS IN CELL BIOLOGY*
Spudich, J. A.
1982; 25: 359-364
- **MECHANISM OF K+-INDUCED ACTIN ASSEMBLY** *JOURNAL OF CELL BIOLOGY*
Pardee, J. D., Spudich, J. A.
1982; 93 (3): 648-654
- **PURIFICATION OF MUSCLE ACTIN** *METHODS IN CELL BIOLOGY*
Pardee, J. D., Spudich, J. A.
1982; 24: 271-289
- **PURIFICATION OF MUSCLE ACTIN** *METHODS IN ENZYMOLOGY*
Pardee, J. D., Spudich, J. A.
1982; 85: 164-181
- **Control of assembly of Dictyostelium myosin and actin filaments.** *Cold Spring Harbor symposia on quantitative biology*
Spudich, J. A., KuczmarSKI, E. R., Pardee, J. D., Simpson, P. A., Yamamoto, K., Stryer, L.
1982; 46: 553-561
- **ACTIN AND MYOSIN - CONTROL OF FILAMENT ASSEMBLY** *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY OF LONDON SERIES B-BIOLOGICAL SCIENCES*
Spudich, J. A., Pardee, J. D., Simpson, P. A., Yamamoto, K., KuczmarSKI, E. R., Stryer, L.
1982; 299 (1095): 247-261
- **ACTIN-FILAMENTS UNDERGO LIMITED SUBUNIT EXCHANGE IN PHYSIOLOGICAL SALT CONDITIONS** *JOURNAL OF CELL BIOLOGY*
Pardee, J. D., Simpson, P. A., Stryer, L., Spudich, J. A.
1982; 94 (2): 316-324
- **MECHANISM OF INTERACTION OF DICTYOSTELIUM SEVERIN WITH ACTIN-FILAMENTS** *JOURNAL OF CELL BIOLOGY*
Yamamoto, K., Pardee, J. D., REIDLER, J., Stryer, L., Spudich, J. A.
1982; 95 (3): 711-719
- **MOLECULAR ASPECTS OF CORTICAL ACTIN FILAMENT FORMATION UPON FERTILIZATION** *CELL DIFFERENTIATION*
Spudich, A., Giffard, R. G., Spudich, J. A.
1982; 11 (5-6): 281-284

- **DICTYOSTELIUM MYOSIN - CHARACTERIZATION OF CHYMOTRYPTIC FRAGMENTS AND LOCALIZATION OF THE HEAVY-CHAIN PHOSPHORYLATION SITE *JOURNAL OF CELL BIOLOGY***
Peltz, G., Kuczmarski, E. R., Spudich, J. A.
1981; 89 (1): 104-108
- **CONTROL OF ASSEMBLY OF DICTYOSTELIUM MYOSIN AND ACTIN-FILAMENTS *COLD SPRING HARBOR SYMPOSIA ON QUANTITATIVE BIOLOGY***
Spudich, J. A., Kuczmarski, E. R., Pardee, J. D., Simpson, P. A., Yamamoto, K., Stryer, L.
1981; 46: 553-561
- **MECHANISM OF ACTION OF CYTOCHALASIN - EVIDENCE THAT IT BINDS TO ACTIN FILAMENT ENDS *JOURNAL OF CELL BIOLOGY***
Brown, S. S., Spudich, J. A.
1981; 88 (3): 487-491
- **PURIFICATION OF A CA⁺⁺ SENSITIVE K-38 DALTON PROTEIN FROM DICTYOSTELIUM-DISCOIDEUM WHICH AFFECTS THE ASSEMBLY STATE OF ACTIN**
Brown, S. S., Spudich, J. A.
ROCKEFELLER UNIV PRESS.1980: A224-A224
- **ATP-DRIVEN STEADY-STATE EXCHANGE OF MONOMERIC AND FILAMENTOUS ACTIN FROM DICTYOSTELIUM-DISCOIDEUM *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA-BIOLOGICAL SCIENCES***
Simpson, P. A., Spudich, J. A.
1980; 77 (8): 4610-4613
- **REGULATION OF MYOSIN SELF-ASSEMBLY - PHOSPHORYLATION OF DICTYOSTELIUM HEAVY-CHAIN INHIBITS FORMATION OF THICK FILAMENTS *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA-BIOLOGICAL SCIENCES***
Kuczmarski, E. R., Spudich, J. A.
1980; 77 (12): 7292-7296
- **PURIFICATION AND PROPERTIES OF SOLUBLE ACTIN FROM SEA-URCHIN EGGS *JOURNAL OF BIOCHEMISTRY***
Mabuchi, I., Spudich, J. A.
1980; 87 (3): 785-802
- **NUCLEATION OF POLAR ACTIN FILAMENT ASSEMBLY BY A POSITIVELY CHARGED SURFACE *JOURNAL OF CELL BIOLOGY***
Brown, S. S., Spudich, J. A.
1979; 80 (2): 499-504
- **STRUCTURE OF ACTIN FILAMENT BUNDLES FROM MICROVILLI OF SEA-URCHIN EGGS *JOURNAL OF MOLECULAR BIOLOGY***
Spudich, J. A., Amos, L. A.
1979; 129 (2): 319-331
- **ACTIN IN TRITON-TREATED CORTICAL PREPARATIONS OF UNFERTILIZED AND FERTILIZED SEA-URCHIN EGGS *JOURNAL OF CELL BIOLOGY***
Spudich, A., Spudich, J. A.
1979; 82 (1): 212-226
- **CYTOCHALASIN INHIBITS THE RATE OF ELONGATION OF ACTIN FILAMENT FRAGMENTS *JOURNAL OF CELL BIOLOGY***
Brown, S. S., Spudich, J. A.
1979; 83 (3): 657-662
- **BIOCHEMICAL AND STRUCTURAL CHARACTERIZATION OF ACTIN FROM DICTYOSTELIUM-DISCOIDEUM *JOURNAL OF BIOLOGICAL CHEMISTRY***
UYEMURA, D. G., Brown, S. S., Spudich, J. A.
1978; 253 (24): 9088-9096
- **SUPRAMOLECULAR FORMS OF ACTIN FROM AMEBAS OF DICTYOSTELIUM-DISCOIDEUM *JOURNAL OF BIOLOGICAL CHEMISTRY***
Spudich, J. A., Cooke, R.
1975; 250 (18): 7485-7491