Curriculum Vitae

James A. Spudich, Ph.D.
Douglass M. and Nola Leishman Professor of Cardiovascular Disease
Department of Biochemistry
Stanford University School of Medicine

EDUCATION

1963	University of Illinois, *Chemistry*	Dept of Biochemistry	B.S.
1968	Stanford University, *Biochemistry*	Dept of Biochemistry	Ph.D.
1968-1969	Stanford University, *Molecular Genetics*	Dept of Biological Sciences	Postdoctoral
1969-1971	Cambridge University, *Structural Biology*	MRC Lab of Mol Biol	Postdoctoral

PROFESSIONAL EXPERIENCE

2012	Co-Founder, MyoKardia, Inc.
2011-present	Adjunct Professor, Institute of Stem Cell Biology and Regenerative Medicine (inStem), Bangalore, India
2005-present	Adjunct Professor, National Centre for Biological Sciences (NCBS) of the Tata Institute of Fundamental Research (TIFR), Bangalore, India; and TIFR, Bombay, India
1998-2002	Co-Founder and first Director, Interdisciplinary Program in Bioengineering, Biomedicine and Biosciences – Bio-X, Stanford University
1998	Co-Founder, Cytokinetics, Inc.
1992-present	Professor, Dept of Biochemistry, Stanford University School of Medicine (Chairman from 1994-1998)
1989-2011	Professor, Dept of Developmental Biology, Stanford University School of Medicine
1977-1992	Professor, Dept of Structural Biology, Stanford University School of Medicine (Chairman from 1979-1984)
1976-1977	Professor, Dept of Biochemistry and Biophysics, UCSF, San Francisco
1974-1976	Associate Professor, Dept of Biochemistry and Biophysics, UCSF, San Francisco
1971-1974	Assistant Professor, Dept of Biochemistry and Biophysics, UCSF, San Francisco

RESEARCH 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 ß-cardiac myosin. Our goal is to elucidate the molecular basis of hyper-contractility seen clinically resulting from HCM mutations. We postulated in 2015 that a majority of HCM mutations shift ß-cardiac myosin heads from a sequestered off-state to an active on-state for interaction with actin, resulting in the hyper-contractility 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.

HONORS

University of Illinois Alumni Achievement Award	2018
Biophysical Society Founders Award	2018
Inaugural ASCB Fellow	2016
Liberal Arts and Sciences Alumni Achievement Award, University of Illinois	2015
Honorary Doctor of Sciences Degree, Guelph University	2014
Massry Prize	2013
Ahmed H. Zewail Award Gold Medal	2013
Albert Lasker Basic Medical Research Award	2012
Wiley Prize in Biomedical Sciences	2012
Arthur Kornberg and Paul Berg Lifetime Achievement Award in Biomedical Sciences	2012
E.B. Wilson Medal, The American Society for Cell Biology (ASCB)	2011
Biophysical Society Award for Outstanding Investigator, Single Molecule Biology	2005
Elected Fellow of the American Association for the Advancement of Science	2001
Elected Fellow of the American Academy of Arts and Sciences	1997
Repligen Award, Division of Biological Chemistry of the American Chemical Society	1996
Rosenstiel Award for Outstanding Research Achievement in the Field of Basic Medical Studies	1996
Biophysical Society Lifetime Research Career Award	1995
External Member of the Max-Planck-Institute für Biochemie in Martinsried bei München	1994
NIH Merit Award	1991
Alexander von Humboldt Research Award	1991
Elected Member of the National Academy of Sciences	1991
American Heart Association Basic Research Prize	1991
Named the "Douglass M. and Nola Leishman Professor of Cardiovascular Disease"	1987
Guggenheim Fellow	1978
Dreyfus Teaching and Research Scholar	1976
Newhouse Foundation Fellow	1965

NAMED & KEYNOTE LECTURES

Vanderbilt Flexner Discovery Lecture	2017
Plenary Lecture, 25th Anniversary National Centre for Cell Biology, TIFR, Bangalore	2017
Keynote Lecture for the David L. Lacey Award, Amgen	2016
Keynote Address, Keystone Symposium, Heart Failure: Genetics, Genomics & Epigenetics	2016
Keynote Lecture, Annual Biophysics Meeting, Motility Subgroup	2016

Cori Lecture, Washington University	2013
Albert Szent-Györgyi Lecture, Eötvös University, Budapest, Hungary	2012
Plenary Lecture, European Cytoskeletal Forum, Pecs, Hungary	2012
Pauling Lecture, Stanford University	2009
Maggie & Nick DeWolf Public Lecture, Wheeler Opera House, Aspen, Colorado	2009
Fred Fay Memorial Lecture, University of Massachusetts Medical School	2008
Carlson Lecture, Department of Biophysics, Johns Hopkins	2008
D. Allan Harmon Endowed Lecture, Oklahoma Medical Research Foundation	2008
Plenary Lecture, Conference on Traffic and Granular Flow, Orsay	2007
Keynote Lecture, 4th conference on Foundations of Nanoscience, Snow Bird, UT	2007
Eran Karmon Memorial Lecture, Biophysics, University of California, Berkeley	2006
The Kensal E. Van Holde Lectureship, Woods Hole	2005
Keynote Address, Molecular Biology of Cardiac Disease, Keystone	2004
The First Annual Cell Biology Discovery Lecture, Johns Hopkins	2004
Keynote Address, Lurie Comprehensive Cancer Center Annual Basic Science Colloquium	2003
Keynote Speaker, Cell and Developmental Biology Conference, M.D. Anderson Cancer Center	2002
Keynote Address, Molecular Biology of the Heart, Keystone	2002
Paul Dudley White Lecture, Mass General Hospital of Harvard University	2001
Keynote Lecture, American Society Biomechanics	2001
Plenary Lecture, ASBMB Annual Meeting	2001
Carl Vestling Lecture, University of Iowa	2001
The Lansdowne Lectures, University of Victoria	2001
The Dean's Lecture, University of California, San Francisco	2001
Keynote Lecture, ESF/EMBO Conference on Frontiers of Cellular Microbiol and Cell Biology	2000
Plenary Lecture, Whitehead Symposium XVIII	2000
DuPont Lavoisier Lecture	2000
Edison Lecture, University of Notre Dame	2000
Charles Yanofsky Lecture, Stanford	1999
DeWitt Stetten, Jr. Lecture, NIH	1999
Meyerhof Lecture, Heidelberg	1999
Annual Robert E. Davies Distinguished Lecture	1998
Keith R. Porter Lecture, The American Society for Cell Biology	1998
Hans Neurath Lecture, University of Washington	1998
Irvin Isenberg Memorial Lecture	1996
John S. Colter Lecture in Biochemistry	1995
National Lecture, Biophysical Society	1995
Mayer Lecture, MIT	1995
First Annual Frank Pepe Lecture, University of Pennsylvania	1993
Plenary Lecture, Madrid International Congress on Cell Biology	1992
Clayton S. White Lecture, Oklahoma Medical Research Foundation	1991
Frontiers in Biological Sciences Lecture, Case Western Reserve University	1991
University Cincinnati Distinquished Lecture	1991
Friday Evening Lecture, Woods Hole	1990
Public Symposium Special Lecture, Tokyo	1989
First Annual Lecture of series named "The James Spudich AHA Research Committee Lecture"	1989
Lucille P. Markey Distinguished Speaker, UCLA	1989
Bayer Lecture, Yale	1988

MEMBERSHIPS & EXTRAMURAL POSITIONS

Member, Management Board, TIFR Centre for Interdisciplinary Sciences, Hyderabad	2012-
Member, The Advisory Board of the Bioengineering Program, Santa Clara University	2011-2013
Chairman, ASCB International Affairs Committee	2010-2013
Member, The Scientific Advisory Board of the Mechanobiology Institute, Singapore	2010-2012
Member, Stanford Cancer Center, the Molecular Therapeutics Research Program	2009-
Member, ASCB Half-Century Fund Committee	2008-
Member, Stanford Cardiovascular Research Institute Executive and Steering Committee	2008-
Member, The international Scientific Advisory Board of the Curie Institute, Paris	2008-2013
Member, ASCB International Affairs Committee	2006-2009
Member, National Center for Biological Sciences Advisory Board, Bangalore	2000-2008
Member, Max Planck Institute Advisory Board, Dortmund	1997-2000
External Member, Max-Planck-Institute für Biochemie, Martinsried bei München	1994-
Member, Carnegie Mellon Advisory Board	1992
Principal Center Scientist, Stanford AHA Bugher Center Grant in Molecular Biology	1991-1996
Chairman, Searle Scholars Program Advisory Committee	1990
President, The American Society for Cell Biology	1989
Chairman Scientific Program Steering Committee, National American Heart Association	1988-1989
Council, American Society for Cell Biology	1987
Member, Searle Scholars Program Advisory Committee	1986-1990
Member, Research Committee National American Heart Association	1984-1989
Member, American Society of Biological Chemistry and Molecular Biology	1971-
Member, The American Society for Cell Biology	1972-
Member, Biophysical Society	1975-

EDITORIAL ACTIVITIES

Editor, PLoS Biology	2012-2014
Editor, Cell	2009-2016
Monitoring Editor, Proceedings National Academy of Sciences, USA	2000-
Senior Editor, Annual Review of Cell and Developmental Biology	1994-1998
Associate Editor, Molecular Biology of the Cell	1991-1996
Associate Editor, Cell Motility and the Cytoskeleton	1985-1991
Associate Editor, Annual Review of Cell Biology	1984-1994
Editorial Board, Journal of Cell Biology	1982-1984
Editor, Journal of Muscle Research and Cell Motility	1980-1985
Editorial Board, Journal of Biological Chemistry	1978-1981

Editor: "The Cytoskeleton", a volume for Annual Reviews, Inc., 1996.

Editor: "Molecular Genetic Approaches to Protein Structure and Function: Applications to Cell and Developmental Biology", Alan R. Liss, Inc., 1989.

Editor: "*Dictyostelium discoideum*: Molecular Approaches to Cell Biology", a volume for Methods in Cell Biology, published under the auspices of the American Society for Cell Biology (Les Wilson, editor of series), Vol. 28, 1987.

OTHER

Instructor:	Developmental Biology Hopkins Marine Station, Summer 1986
Instructor:	Physiology: Cell and Molecular Biology Course Marine Biological Laboratory, Woods Hole, MA, Summers 1984-1986, 2006

PUBLICATIONS

1. Hastings, J.W., Spudich, J.A., Malnic, G. (1963). The Influence of Aldehyde Chain Length upon the Relative Quantum Yield of the Bioluminescent Reaction of Achromobacter fischeri. J Biol Chem. 238:3100-3105.
2. Spudich, J.A., Hastings, J.W. (1963). Inhibition of the Bioluminescent Oxidation of Reduced Flavin Mononucleotide by 2-Decenal. J Biol Chem. 238:3106-3108.
3. Falaschi, A., Spudich, J.A., Kornberg, A. (1965). Deoxyribonucleic Acid Polymerase and Related Enzymes in Spores of Bacillus subtilis. In Spores III, L.L. Campbell and H.O. Halvorson, editors (American Society for Microbiology: Ann Arbor, Michigan), pp. 88-96.
4. Hastings, J.W., Gibson, Q.H., Friedland, J., Spudich, J.A. (1966). Molecular Mechanisms in Bacterial Bioluminescence: On Energy Storage Intermediates and the Role of Aldehyde in the Reaction. In Bioluminescence in Progress, F.H. Johnson and Y. Haneda, editors (Princeton University Press: Princeton, New Jersey), pp. 151-186.
5. Spudich, J.A., Kornberg, A. (1968). Biochemical Studies of Bacterial Sporulation and Germination. VI. Origin of Spore Proteins. J Biol Chem. 243:4588-4599.
6. Spudich, J.A., Kornberg, A. (1968). Biochemical Studies of Bacterial Sporulation and Germination. VII. Protein Turnover during Sporulation of Bacillus subtilis. J Biol Chem. 243:4600-4605.
7. Bonsen, P.P.M., Spudich, J.A., Nelson, D.L., Kornberg, A. (1969). Biochemical Studies of Bacterial Sporulation and Germination. XII. A Sulfonic Acid as a Major Sulfur Compound of Bacillus subtilis Spores. J Bacteriol. 98:62-68.
8. Spudich, J.A., Kornberg, A. (1969). Biochemical Studies of Bacterial Sporulation and Germination. XIII. Adenylate Kinase of Vegetative Cells and Spores of Bacillus subtilis. J Bacteriol. 98:69-74.
9. Nelson, D.L., Spudich, J.A., Bonsen, P.P.M., Bertsch, L.L., Kornberg, A. (1969). Biochemical Studies of Sporulation and Germination. XVI. Small Molecules in Spores. In Spores IV (American Society for Microbiology: Ann Arbor, Michigan), pp. 59-71.
10. Spudich, J.A. (1970). Biochemical Studies of Spore Core and Coat Protein Synthesis. J Appl Bact. 33:25-33.
11. Spudich, J.A., Horn, V., Yanofsky, C. (1970). On the Production of Deletions in the Chromosome of Escherichia coli. J Mol Biol. 53:49-67.
12. Spudich, J.A., Watt, S. (1971). Regulation of skeletal muscle contraction. I. Biochemical Studies of the Interaction of the Tropomyosin-Troponin Complex with Actin and the Proteolytic Fragments of Myosin. J Biol Chem. 246:4866-4871.
13. Spudich, J.A., Huxley, H.E., Finch, J. (1972). Regulation of Skeletal Muscle Contraction. II. Structural Studies of the Interaction of the Tropomyosin-Troponin Complex with Actin. J Mol Biol. 72:619-632.
14. Spudich, J.A., Lin, S. (1972). Cytochalasin B, Its Interaction with Actin and Actomyosin from Striated Muscle. Proc Natl Acad Sci USA. 69:442-446.
15. Spudich, J.A. (1973). Effects of Cytochalasin B on Actin Filaments. Cold Spring Harbor Symp Quant Biol. 37:585-594.
16. Lin, S., Lin, D.C., Spudich, J.A., Kun, E. (1973). Inhibition of Mitochondrial Contraction by Cytochalasin B. FEBS Lett. 37:241-243.

17. Lin, S., Santi, D.V., Spudich, J.A. (1974). Biochemical Studies on the Mode of Action of Cytochalasin B. Preparation of [^{3}H] Cytochalasin B and Studies of Its Binding to Cells. J Biol Chem. 249:2268-2274.
18. Clarke, M., Spudich, J.A. (1974). Biochemical and Structural Studies of Actomyosin-Like Proteins from Nonmuscle Cells. I. Isolation and Characterization of Myosin from Amoebae of Dictyostelium discoideum. J Mol Biol. 86:209-222.
19. Spudich, J.A. (1974). Biochemical and Structural Studies of Actomyosin-Like Proteins from Nonmuscle Cells. II. Purification, Properties, and Membrane Association of Actin from Amoebae of Dictyostelium discoideum. J Biol Chem. 249:6013-6020.
20. Lin, S., Spudich, J.A. (1974). Biochemical Studies on the Mode of Action of Cytochalasin B. Cytochalasin B Binding to Red Cell Membrane in Relation to Glucose Transport. J Biol Chem. 249:5778-5783.
21. Lin, S., Spudich, J.A. (1974). Binding of Cytochalasin B to a Red Cell Membrane Protein. Biochem Biophys Res Commun. 61:1471-1476.
22. Spudich, J.A., Clarke, M. (1974). The Contractile Proteins of Dictyostelium discoideum. J Supramol Struct. 2:150-162.
23. Lin, S., Spudich, J.A. (1974). On the Molecular Basis of Action of Cytochalasin B. J Supramol Struct. 2:728-736.
24. Clarke, M., Schatten, G., Mazia, D., Spudich, J.A. (1975). Visualization of Actin Fibers Associated with the Cell Membrane in Amoebae of Dictyostelium discoideum. Proc Natl Acad Sci USA. 72:1758-1762.
25. Spudich, J.A., Cooke, R. (1975). Supramolecular Forms of Actin from Amoebae of Dictyostelium discoideum. J Biol Chem. 250:7485-7491.
26. Cooke, R., Clarke, M., von Wedel, R., Spudich, J.A. (1976). Supra-Molecular Forms of Dictyostelium Actin. In Cell Motility, Cold Spring Harbor Conference on Cell Proliferation, Vol. 3, R. Goldman, T. Pollard, and J. Rosenbaum, editors (Cold Spring Harbor Laboratory: Cold Spring Harbor, New York), pp. 575-587.
27. Mockrin, S.C., Spudich, J.A. (1976). Calcium Control of Actin-Activated Myosin ATPase from Dictyostelium discoideum. Proc Natl Acad Sci USA. 73:2321-2325.
28. Brown, S., Levinson, W., Spudich, J.A. (1976). Cytoskeletal Elements of Chick Embryo Fibroblasts Revealed by Detergent Extraction. J Supramol Struct. 5:119-130.
29. Rubenstein, P., Spudich, J.A. (1977). Actin Microheterogeneity in Chick Embryo Fibroblasts. Proc Natl Acad Sci USA. 74:120-123.
30. Uyemura, D.G., Brown, S.S., Spudich, J.A. (1978). Biochemical and Structural Characterization of Actin from Dictyostelium discoideum. J Biol Chem. 253:9088-9096.
31. Stewart, P.R., Spudich, J.A. (1979). Structural States of Dictyostelium Myosin. J Supramol Struct. 12:1-14.
32. Stewart, P.R., Spudich, J.A. (1979). Dictyostelium Myosin: Effect of RNA on Its Aggregation Properties. In Motility in Cell Function, F. Pepe, editor (Academic Press: New York), pp. 359-361.
33. Spudich, J.A., Amos, L.A. (1979). Structure of Actin Filament Bundles from Microvilli of Sea Urchin Eggs. J Mol Biol. 129:319-331.

34. Spudich, J.A., Spudich, A., Amos, L.A. (1979). Actin from the Cortical Layer of Sea Urchin Eggs before and after Fertilization. In Cell Motility: Molecules and Organization, S. Hatano, H. Ishikawa, and H. Sato, editors (University of Tokyo Press: Tokyo), pp. 165-187.

35. Spudich, A., Spudich, J.A. (1979). Actin in Triton-Treated Cortical Preparations of Unfertilized and Fertilized Sea Urchin Eggs. J Cell Biol. 82:212-226.

36. Brown, S.S., Spudich, J.A. (1979). Nucleation of Polar Actin Filament Assembly by a Positively-Charged Surface. J Cell Biol. 80:499-504.

37. Brown, S.S. Spudich, J.A. (1979). Cytochalasin Inhibits the Rate of Elongation of Actin Filament Fragments. J Cell Biol. 83:657-662.

38. Simpson, P., Spudich, J.A. (1980). ATP-Driven Steady-State Exchange of Monomeric and Filamentous Actin from Dictyostelium discoideum. Proc Natl Acad Sci USA. 77:4610-4613.

39. Kuczmarski, E.R., Spudich, J.A. (1980). Regulation of Myosin Self-Assembly: Phosphorylation of Dictyostelium Heavy Chain Inhibits Thick Filament Formation. Proc Natl Acad Sci USA. 77:7292-7296.

40. Mabuchi, I., Spudich, J.A. (1980). Purification and Properties of Soluble Actin from Sea Urchin Eggs. J Biochem. 87:785-802.

41. Brown, S.S., Spudich, J.A. (1980). The Mechanism of Action of Cytochalasin: Evidence That It Binds to Actin Filament Ends. J Cell Biol. 88:487-491.

42. Peltz, G., Kuczmarski, E.R., Spudich, J.A. (1981). Dictyostelium Myosin: Characterization of Chymotryptic Fragments and Localization of the Heavy Chain Phosphorylation Site. J Cell Biol. 89:104-108.

43. Taylor, D.L., Reidler, J., Spudich, J.A., Stryer, L. (1981). Detection of Actin Assembly by Fluorescence Energy Transfer. J Cell Biol. 89:362-367.

44. Pardee, J.D., Spudich, J.A. (1982). Mechanism of K^+-Induced Actin Assembly. J Cell Biol. 93:648-654.

45. Brown, S.S., Yamamoto, K., Spudich, J.A. (1982). A 40,000-Dalton Protein from Dictyostelium discoideum Affects Assembly Properties of Actin in a Ca^{2+}-Dependent Manner. J Cell Biol. 93:205-210.

46. Spudich, J.A., Pardee, J.D., Simpson, P.A., Yamamoto, K., Kuczmarski, E.R., Stryer, L. (1982). Actin and Myosin: Control of Filament Assembly. Phil Trans R Soc. London B. 299:247-261.

47. Pardee, J.D., Simpson, P.A., Stryer, L., Spudich, J.A. (1982). Actin Filaments Undergo Limited Subunit Exchange in Physiological Salt Conditions. J Cell Biol. 94:316-324.

48. Spudich, A., Giffard, R.G., Spudich, J.A. (1982). Molecular Aspects of Cortical Actin Filament Formation upon Fertilization. Cell Differentiation 11:281-284.

49. Yamamoto, K., Pardee, J.D., Reidler, J., Stryer, L., Spudich, J.A. (1982). The Mechanism of Interaction of Dictyostelium Severin with Actin Filaments. J Cell Biol. 95:711-719.

50. Giffard, R.G., Spudich, J.A., Spudich, A. (1983). Ca^{2+}-Sensitive Isolation of a Cortical Actin Matrix from Dictyostelium Amoebae. J Musc Res Cell Motility. 4:115-131.

51. Sheetz, M.P., Spudich, J.A. (1983). Movement of Myosin-Coated Fluorescent Beads on Actin Cables In Vitro. Nature 303:31-35.

52. Sheetz, M.P., Spudich, J.A. (1983). Movement of Myosin-Coated Structures on Actin Cables. Cell Motility 3:485-489.

53. Giffard, R.G., Weeds, A.G., Spudich, J.A. (1984). Ca^{2+}-Dependent Binding of Severin to Actin: A One-To-One Complex is Formed. J Cell Biol. 98:1796-1803.

54. Simpson, P.A., Spudich, J.A., Parham, P. (1984). Monoclonal Antibodies Prepared Against Dictyostelium Actin: Characterization and Interactions with Actin. J Cell Biol. 99:287-295.

55. Wang, L.-L., Spudich, J.A. (1984). A 45,000-Mol-Wt Protein from Unfertilized Sea Urchin Eggs Severs Actin Filaments in a Calcium-Dependent Manner and Increases the Steady-State Concentration of Nonfilamentous Actin. J Cell Biol. 99:844-851.

56. Sheetz, M.P., Chasan, R., Spudich, J.A. (1984). ATP-Dependent Movement In Vitro: Characterization of a Quantitative Assay. J Cell Biol. 99:1867-1871.

57. Peltz, G., Spudich, J.A., Parham, P. (1985). Monoclonal Antibodies Against Seven Sites on the Head and Tail of Dictyostelium Myosin. J Cell Biol. 100:1016-1023.

58. Flicker, P.F., Peltz, G., Sheetz, M.P., Parham, P., Spudich, J.A. (1985). Site Specific Inhibition of Myosin-Mediated Motility In Vitro by Monoclonal Antibodies. J Cell Biol. 100:1024-1030.

59. Spudich, J.A., Kron, S.J., Sheetz, M.P. (1985). Movement of Myosin-Coated Beads on Oriented Filaments Reconstituted from Purified Actin. Nature. 315:584-586.

60. De Lozanne, A., Lewis, M., Spudich, J.A., Leinwand, L.A. (1985). Cloning and Characterization of a Nonmuscle Myosin Heavy Chain cDNA. Proc Natl Acad Sci USA. 82:6807-6810.

61. Berlot, C.H., Spudich, J.A., Devreotes, P.N. (1985). Chemoattractant-Elicited Increases in Myosin Phosphorylation in Dictyostelium. Cell. 43:307-314.

62. Sellers, J.R., Spudich, J.A., Sheetz, M.P. (1985). Light Chain Phosphorylation Regulates the Movement of Smooth Muscle Myosin on Actin Filaments. J Cell Biol. 101:1897-1902.

63. Kron, S.J., Spudich, J.A. (1985). Reconstitution of Actin-Myosin Movement In Vitro: Fluorescent Actin Filaments Move on Myosin Fixed to a Surface. In Actin: Structure and Functions, Proceedings of the 11th Taniguchi International Symposium, held November 11-16, 1985, Kyoto. T. Yanagida, editor. Pp. 214-221.

64. Kron, J., Spudich, J.A. (1986). Fluorescent Actin Filaments Move on Myosin Fixed to a Glass Surface. Proc Natl Acad Sci USA. 83:6272-6276.

65. Warrick, H.M., De Lozanne, A., Leinwand, L.A., Spudich, J.A. (1986). Conserved Protein Domains in a Myosin Heavy Chain Gene from Dictyostelium discoideum. Proc Natl Acad Sci USA. 83:9433-9437.

66. Berlot, C.H., Devreotes, P.N., Spudich, J.A. (1987). Chemoattractant-Elicited Increases in Dictyostelium Myosin Phosphorylation are Due to Changes in Myosin Localization and Increases in Kinase Activity. J Biol Chem. 262:3918-3926.

67. Hynes, T.R., Block, S.M., White, B.T., Spudich, J.A. (1987). Movement of Myosin Fragments In Vitro: Domains Involved in Force Production. Cell. 48:953-963.

68. Griffith, L.M., Downs, S.M., Spudich, J.A. (1987). Myosin Light Chain Kinase and Myosin Light Chain Phosphatase from Dictyostelium: Effects of Reversible Phosphorylation on Myosin Structure and Function. J Cell Biol. 104:1309-1323.

69. De Lozanne, A., Spudich, J.A. (1987). Disruption of the Dictyostelium Myosin Heavy Chain Gene by Homologous Recombination. Science. 236:1086-1091.

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71. De Lozanne, A., Berlot, C.H., Leinwand, L.A., Spudich, J.A. (1987). Expression in Escherichia coli of a Functional Dictyostelium Myosin Tail Fragment. J Cell Biol. 105:2999-3005.

72. Peters, D.J.M., Knecht, D.A., Loomis, W.F., De Lozanne, A., Spudich, J., Van Haastert, P.J.M. (1988). Signal Transduction, Chemotaxis, and Cell Aggregation in Dictyostelium discoideum Cells without Myosin Heavy Chain. Develop Biol. 128:158-163.

73. Wessels, D., Soll, D.R., Knecht, D., Loomis, W.F., De Lozanne, A., Spudich, J. (1988). Cell Motility and Chemotaxis in Dictyostelium Amebae Lacking Myosin Heavy Chain. Develop Biol. 128:164-177.

74. Warrick, H.M., Spudich, J.A. (1988). Codon Preference in Dictyostelium discoideum. Nucl Acids Res. 16:6617-6635.

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76. Curmi, P.M.G., Stone, D.B., Schneider, D.K., Spudich, J.A., Mendelson, R.A. (1988). Comparison of the Structure of Myosin Subfragment 1 Bound to Actin and Free in Solution. J Mol Biol. 203:781-798.

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79. Welker, D.L., De Lozanne, A., Spudich, J.A. (1989). Linkage Analysis of the Myosin Heavy Chain Gene in Dictyostelium discoideum using a Mutation Generated by Homologous Recombination. Mol Gen Genet. 216:498-502.

80. Nachmias, V.T., Fukui, Y., Spudich, J.A. (1989). Chemoattractant-Elicited Translocation of Myosin in Motile Dictyostelium. Cell Motil Cytoskeleton. 13:158-169.

81. Pasternak, C., Flicker, P.F., Ravid, S., Spudich, J.A. (1989). Intermolecular Versus Intramolecular Interactions of Dictyostelium Myosin: Possible Regulation by Heavy Chain Phosphorylation. J Cell Biol. 109:203-210.

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