

CURRICULUM VITAE

Thomas Dean Pollard

Personal

Born July 7, 1942 in Pasadena, CA

Married to Patricia Snowden February 7, 1964

Children: Katherine Snowden Pollard, born 1972, Daniel Avery Pollard, born 1975

Education

1964 B.A., cum laude. Pomona College

1968 M.D., cum laude. Harvard Medical School

Academic Career

1968-69 Medical internship, Massachusetts General Hospital, Boston

1969-72 Staff Associate, Laboratory of Biochemistry, Section on Biochemistry and Ultrastructure, National Heart and Lung Institute, Bethesda, MD

1972-75 Assistant Professor of Anatomy, Harvard Medical School

1975-78 Associate Professor of Anatomy, Harvard Medical School

1977-96 Bayard Halsted Professor and Director, Department of Cell Biology and Anatomy, The Johns Hopkins University School of Medicine

1984 Visiting Scientist, Medical Research Council Laboratory of Molecular Biology, Cambridge, U.K.

1996-00 President, The Salk Institute for Biological Studies

1996-01 Professor, The Salk Institute for Biological Studies

1997-01 Adjunct Professor of Biology, of Bioengineering and of Chemistry and Biochemistry, University of California San Diego

2001-05 Eugene Higgins Professor of Molecular Cellular & Developmental Biology and of Cell Biology, Yale University

2003-05 Professor of Molecular Biophysics and Biochemistry, Yale University

2004-10 Chair, Department of Molecular Cellular and Developmental Biology

2006- Sterling Professor of Molecular Cellular & Developmental Biology and of Cell Biology and of Molecular Biophysics & Biochemistry, Yale University

2010-14 Dean, Yale Graduate School of Arts and Sciences (cognizant Dean of the Faculty for the Natural and Social Sciences)

Honors

1965 F.S. Jennings Memorial Prize for freshman English writing, Pomona College

1968 Alpha Omega Alpha Honor Society, Harvard Medical School

1974-78 USPHS Research Career Development Award

1981 Member, Baltimore Road Runners Club team that set the world record in the 100-man 100-mile relay (stood until 1997)

1984 Guggenheim Fellowship

1984 Winston Churchill Overseas Fellow, Churchill College, Cambridge, England

1988-98 MERIT Award, National Institute of General Medical Science

1990 Fellow, American Academy of Arts and Sciences

1992 Fellow, National Academy of Sciences of the United States

1993 Fellow, American Association for the Advancement of Science

1996 Rosenstiel Award, Brandeis University (jointly with James Spudich)

- 1997 Public Service Award, Biophysical Society
- 1997 Fellow, American Academy of Microbiology
- 1999 Fellow, Biophysical Society
- 1999 Member, Institute of Medicine
- 2004 E.B. Wilson Medal, American Society for Cell Biology
- 2005 Honorary Doctor of Science, Pomona College
- 2006 Gairdner International Award in Biomedical Sciences
- 2008 Honorary Doctor of Science, University of Miami
- 2010 Public Service Award, American Society for Cell Biology
- 2010 Associate Member, European Molecular Biology Organization
- 2013 Honorary Doctor of Science, Ohio State University

Named Lectures

- 1985 Harden Lecture, Biochemical Society (U.K.)
- 1989 Keith R. Porter Lecture, American Society for Cell Biology
- 1998 Bashour Lecture, University of Texas Southwestern Medical School
- 1999 Selkurt Lecture, University of Indiana Medical School
- 2000 Ricketts Lecture, University of Chicago
- 2000 Jon Singer Lecture, San Diego Cell Biology Association
- 2001 Lynch Lectures, University of Notre Dame
- 2001 Naidorf Lecture, Columbia University
- 2002 Pepe Lecture, University of Pennsylvania
- 2005 Alma Howard Lecture, McGill University
- 2006 Stower Lectures, University of California Davis
- 2006 Erlanger-Gasser Lecture, Washington University, St. Louis
- 2006 Director's Lecture, National Institutes of Health
- 2007 Pomerat Lecture, University of Texas Medical Branch, Galveston
- 2009 Calbiochem Lectures, University of California San Diego
- 2010 Harold Beams Lecture, University of Iowa
- 2011 Hewson Swift Lecture, University of Chicago
- 2011 Camillo Benzo Lectureship, Upstate Medical University, Syracuse
- 2012 Donald Casper Lecture, Florida State University
- 2013 Paul Doty Lecture, Harvard University
- 2014 Woody Lecture, Colorado State University
- 2014 Smith Freeman Lecture, Northwestern University School of Medicine

Professional Activities

- 1973-76 Instructor, Physiology Course, Marine Biological Laboratory, Woods Hole
- 1974 Instructor, Workshop on Cell Motility, Friday Harbor Lab, University of Washington
- 1975 Co-organizer, Meeting on Cell Motility, Cold Spring Harbor Laboratory
- 1975-80 Member, NIGMS Cellular and Molecular Basis of Disease Review Committee
- 1976-77 Member, Executive Committee, American Society for Cell Biology
- 1976-79 Member, Council, American Society for Cell Biology
- 1977-80 Member, Council, Biophysical Society
- 1982 Chairman, Local Arrangements, Meeting of the American Society for Cell Biology
- 1984-85 Program Chairman, 1985 Annual Meeting of the American Society for Cell Biology
- 1984-86 Member, Council, the Association of Anatomy Chairmen
- 1984-97 Member, Selection Committee for Lucille P. Markey Charitable Trust Scholars

1984-88 Member, Molecular Cytology Study Section, NIH; Chair, 1986-88
 1985-86 Panel on Cell Biology, National Research Council
 1986-88 Committee on Research Opportunities in Biology, National Research Council
 1987-88 President, American Society for Cell Biology
 1987-93 Overseers' Committee for the Division of Medical Sciences, Harvard University
 1987-90 Council, Biophysical Society
 1989-93 Director, Physiology Course, Marine Biological Laboratory, Woods Hole
 1990-93 Member, Commission on Life Sciences, National Research Council
 1990- Member, Public Policy Committee, American Society for Cell Biology
 1990- Board Member, Coalition for Life Sciences (formerly Joint Steering Committee for Public Policy)
 1990-97 Trustee, Marine Biological Laboratory, Woods Hole
 1991-97 Member, Howard Hughes Medical Institute Scientific Review Board
 1991-95 Member, Coordinating Council for Education, National Research Council
 1991-96 External Advisor NSF Science and Technology Center, Carnegie Mellon University
 1992-93 President, Biophysical Society
 1993-98 Chairman, Commission on Life Sciences, National Research Council
 1994-98 Council, National Institute of General Medical Sciences
 1995 Co-organizer, Keystone Meeting on Molecular Motors, Taos, NM
 1995- National Coordinator, Congressional Liaison Committee of the JSC/Coalition for Life Science
 1995-97 Member, Class Membership Committee, National Academy of Sciences
 1995-99 Chair, Public Policy Committee, Biophysical Society
 1996- Chair's Advisory Committee, Joint Steering Committee for Public Policy
 1996-99 Member, Electorate Nominating Committee, Section on Medical Science, American Association for the Advancement of Science
 1997-98 Member, Council Scientific Planning Subcommittee, NHGRI, NIH
 1997-01 Member, Board of Advisors, San Diego Science and Technology Council
 1997-01 Member, Selection Committee Hollaender Award, National Academy of Sciences
 1998-02 Member, Interdisciplinary Grants Committee, Packard Foundation
 1998-01 Member, Medical Advisory Board, Howard Hughes Medical Institute
 1998- Member, Scientific Advisory Board, Cytokinetics, Inc., South San Francisco, CA
 1999-01 Member, Board of Directors, California Healthcare Institute
 2001-02 Member, Strategic Planning Committee, Marine Biological Laboratory
 2000-03 Chair, Class II- 2 Nominating Committee, American Academy of Arts and Sciences
 2002 Organizer, Keystone Meeting on Neural Pathfinding, Taos, NM
 2002-08 Member, Public Policy Committee, Biophysical Society
 2002-04 Member, Committee on Nominations, American Association for the Advancement of Science
 2002-05 Chair, Class II, Biological Sciences, National Academy of Sciences
 2002-03 Member, Membership Committee, American Academy of Arts and Sciences
 2003-06 Member, Science, Technology and Law Panel, National Academy of Sciences
 2003 Overseers' Committee, Department of Molecular and Cellular Biology, Harvard
 2003- Member, Advisory Committee National Resource for Cell Analysis and Modeling, University of Connecticut Health Center
 2004-07 Chair, Annual Fund, Marine Biological Laboratory, Woods Hole
 2005 Chair, Search Committee for Executive Director, American Society for Cell Biology

- 2006-14 Member, Board of Scientific Advisers, The Jane Coffin Child Memorial Fund for Medical Research
- 2006-10 Member, Board of Directors, American Association for the Advancement of Science
- 2006- College of Reviewers for the Canada Research Chairs Program
- 2006-07 Member, Women in Cell Biology Committee, American Society for Cell Biology
- 2007-10 Chair, Public Policy Committee, American Society for Cell Biology
- 2008- Member, Advisory Board for Q-Bio Conference
- 2008-09 Member, National Steering Committee: Vision and Change Conference on Undergraduate Biology Education for the 21st Century, AAAS/NSF
- 2009-11 Member, Advisory Board, Image Library of the American Society for Cell Biology
- 2010- Member, ARISE II report committee, American Academy of Arts and Sciences
- 2011- Member, Nominations Committee, American Association for the Advancement of Science
- 2012 Member, E.B. Wilson Medal selection committee, American Society for Cell Biology
- 2012 Member, Richard Lounsbery Award Committee, National Academy of Sciences
- 2012 Member, External Review Committee of the Whitman Center, Marine Biological Laboratory, Woods Hole, MA
- 2013 Member, External Review Committee, Department of Molecular Biology and Biochemistry, Wesleyan University

Editorial Boards

- 1976-81 Editorial Board, Cell Biology-International Reports
- 1977-82 Editorial Board, Journal of Cell Biology
- 1978-82 Editorial Board, Journal of Submicroscopic Cytology
- 1980-94 Editorial Board, Cell Motility and the Cytoskeleton
- 1980-88 Editorial Board, Journal of Muscle Research and Cell Motility
- 1981-93 Editorial Board, Microscopy Research and Technique
- 1982-91 Associate Editor, Journal of Cell Biology
- 1982-93 Associate Editor, Annual Review of Biophysics
- 1988- Editorial Board, Current Opinion in Cell Biology
- 1991- Editorial Board, Current Biology
- 1991-05 Associate Editor, Molecular Biology of the Cell
- 1994-97 Editorial Board, Protein Profile
- 1995- Editorial Board, Trends in Biochemical Sciences
- 1996-98 Editorial Board, Proceedings of the National Academy of Sciences
- 2001- Editorial Board, Cell Motility and the Cytoskeleton; now Cytoskeleton
- 2001-05 Highlights Advisor, Nature Reviews Molecular Cell Biology
- 2005- Senior Editor, Molecular Biology of the Cell
- 2008- Editorial Board, Cellular and Molecular Bioengineering
- 2008- Editorial Board, Cell Health and Cytoskeleton
- 2009- Editorial Board, Cytoskeleton
- 2010- Editorial Board, Bioarchitecture

Johns Hopkins Medical School

- 1977-96 Member, Advisory Board of the Medical Faculty
- 1977-96 Member, First Year Medical Student Promotion Committee
- 1981-85 Member, Professorial Promotions Committee
- 1984-87 Member, Johns Hopkins Medical Institutions Centennial Steering Committee

- 1991-93 Member, Strategic Planning Steering Committee
- 1992-96 Coordinator, First Year Medical School Curriculum
- 1993-96 Founding Director, Graduate Program in Cellular and Molecular Medicine

Yale University

- 2001- Member, Center for Structural Biology
- 2001-02 Chair, MCDB Faculty Search Committee
- 2002-03 Member, Scholar Awards Committee
- 2002 Member, Committee on Tenure and Appointments in the Division of Physical Sciences and Engineering
- 2002-04 Member, Biological Sciences Division Advisory Committee
- 2002-04 Member, University Budget Committee
- 2002-04 Member, Capital Projects Subcommittee of the University Budget Committee 2002-
- 2002-04 Chair, MCDB Building Committee
- 2002-10 Member, MCDB Executive Committee
- 2002-06 Co-director, Graduate Track in Molecular Cell Biology Genetics and Development
- 2002-06 Member, Executive Committee, Combined Program in the Biological and Biomedical Sciences
- 2002-03 Member, Molecular Biophysics and Biochemistry Faculty Search Committee
- 2002-03 Member, Inquiry Committee regarding a misconduct accusation
- 2004- Member, Steering Committee for MCDB Building
- 2004-10 Chair, Department of Molecular Cellular and Developmental Biology
- 2004-10 Member, Faculty Council, Yale Institute for Biospheric Studies
- 2004-10 Member, Science and Engineering Chairs Committee
- 2004-10 Member, Basic Science Chairs Committee
- 2004-05 Member, Basic Science Subcommittee of the Yale School of Medicine Strategic Planning Committee
- 2005 Member, Dean's Search Committee, Morse College
- 2005- Co-organizer, Yale Science Forum
- 2007-08 Organizer, Science and Engineering Chairs Committee
- 2009-10 Member, Search Committee for Director of the Yale Cancer Biology Institute
- 2009-10 Member, University Budget Committee
- 2010 Chair, Search Committee for Dean of the Graduate School of Arts and Sciences
- 2010- Chair, Committee on Access of Scholarly Publications
- 2010-14 Member, Faculty of Arts and Science Steering Committee
- 2010-14 Member, Arts Area Advisory Committee
- 2011-12 Member, Policy and Strategy Board, Yale Climate and Energy Institute
- 2012-14 Member, Academic Review Committee
- 2014-16 Member, Systems Biology Institute Advisory Committee

Teaching Awards

- 1979 W. Barry Wood Award for Excellence in Teaching - Johns Hopkins Medical Student Society
- 1982 Certificate of Excellence in Teaching - Johns Hopkins Medical Student Society
- 1986 Certificate of Excellence in Teaching - Johns Hopkins Medical Student Society
- 1988 W. Barry Wood Award for Excellence in Teaching - Johns Hopkins Medical Student Society

- 1989 W. Barry Wood Award for Excellence in Teaching - Johns Hopkins Medical Student Society
1993 Certificate of Excellence in Teaching - Johns Hopkins Medical Student Society
1994 Certificate of Excellence in Teaching - Johns Hopkins Medical Student Society
1994 Johns Hopkins Alumni Association Teaching Award

Memberships

American Society for Biochemistry and Molecular Biology
American Society for Cell Biology
Biophysical Society
Marine Biological Laboratory, Woods Hole

Patent

1990 United States Patent 4,915,917 Glow discharge unit

Publications - Original Research

1. Pomerat, C.M., Rounds, D.E., Raiborn, C.W. and Pollard, T.D. (1964) Observations on newborn rat dorsal root ganglia in vitro following gamma irradiation. In: "Response of the nervous system to ionizing irradiation" (Haley and Snider, eds.), Little, Brown and Company, pp. 175-200.
2. Ito, S., Shihman Chang, R. and Pollard, T.D. (1969) Cytoplasmic distribution of DNA in a strain of Hartmannellid amoeba. *J. Protozool.* 16:638-645.
3. Pollard, T.D., Shelton, E., Weihing, R.R. and Korn, E.D. (1970) Ultrastructural characterization of F-actin isolated from *Acanthamoeba castellanii* and identification of cytoplasmic filaments as F-actin by reaction with rabbit muscle heavy meromyosin. *J. Mol. Biol.* 51:91-97.
4. Pollard, T.D. and Ito, S. (1970) Cytoplasmic filaments of *Amoeba proteus*. I. The role of filaments in consistency changes and movements. *J. Cell Biol.* 46:267-289.
5. Pollard, T.D. and Weiss, I.W. (1970) Acute tubular necrosis in a patient with march hemoglobinuria. *New Eng. J. Med.* 283:803.
6. Pollard, T.D. and Korn, E.D. (1971) Filaments of *Amoeba proteus*. II. Binding of heavy meromyosin by thin filaments in motile cytoplasmic extracts. *J. Cell Biol.* 48:216-219.
7. Stossel, T.P., Pollard, T.D., Mason, R.J. and Vaughan, M. (1971) Isolation and properties of phagocytic vesicles from polymorphonuclear leukocytes. *J. Clin. Invest.* 50:1745-1757.
8. Adelstein, R.S., Pollard, T.D. and Kuehl, W.M. (1971) Isolation and characterization of myosin and two myosin fragments from human blood platelets. *Proc. Natl. Acad. Sci. USA* 68:2703-2707.
9. Stossel, T.P., Mason, R.J., Pollard, T.D. and Vaughan, M. (1972) Isolation and properties of phagocytic vesicles. II. Alveolar macrophages. *J. Clin. Invest.* 50:605-614.
10. Adelstein, R.S., Conti, M.A., Johnson, G.S., Pastan, I. and Pollard, T.D. (1972) Isolation and characterization of myosin from cloned mouse fibroblasts. *Proc. Natl. Acad. Sci. USA* 69:3693-3697.
11. Pollard, T.D. and Korn, E.D. (1973) The contractile proteins of *Acanthamoeba castellanii*. *Cold Spring Harbor Symposium on Quantitative Biology* 37:573-583.
12. Pollard, T.D. and Korn, E.D. (1973) Electron microscopic identification of actin associated with isolated amoeba membranes. *J. Biol. Chem.* 248:448-450.
13. Pollard, T.D., Eisenberg, E., Korn, E.D. and Kielley, W.W. (1973) Inhibition of Mg^{++} -ATPase of actin-activated *Acanthamoeba* myosin by muscle troponin tropomyosin: implications for the mechanism of control of amoeba motility and muscle contraction. *Biochem. Biophys. Res. Comm.* 51:693-698.
14. Pollard, T.D. and Korn, E.D. (1973) *Acanthamoeba* myosin. I. Isolation from *Acanthamoeba castellanii* of an enzyme similar to muscle myosin. *J. Biol. Chem.* 248:4682-4690.
15. Pollard, T.D. and Korn, E.D. (1973) *Acanthamoeba* myosin. II. Interaction with actin and with a new cofactor protein required for actin activation of Mg^{++} ATPase activity. *J. Biol. Chem.* 248:4691-4697.

16. Stossel, T.P. and Pollard, T.D. (1973) Myosin in polymorphonuclear leukocytes. *J. Biol. Chem.* 248:8288-8294.
17. Orkin, R.W., Pollard, T.D. and Hay, E.D. (1973) SDS gel analysis of muscle proteins in embryonic cells. *Devel. Biol.* 35:388-394.
18. Burns, R.G. and Pollard, T.D. (1974) A dynein-like protein from brain. *FEBS Letters* 40:274-280.
19. Pollard, T.D., Thomas, S.M. and Niederman, R. (1974) Human platelet myosin. I. Purification by a rapid method applicable to other non-muscle cells. *Anal. Biochem.* 60:258-266.
20. Niederman, R. and Pollard, T.D. (1975) Human platelet myosin. II. In vitro assembly of myosin and structure of myosin filaments. *J. Cell Biol.* 67:72-92.
21. Pollard, T.D. (1975) Electron microscopy of synthetic myosin filaments. Evidence for cross-bridge flexibility and copolymer formation. *J. Cell Biol.* 67:93-104.
22. Woodrum, D.T., Rich, S.A. and Pollard, T.D. (1975) Evidence for biased bidirectional polymerization of actin using heavy meromyosin prepared by an improved method. *J. Cell Biol.* 67:231-237.
23. Pollard, T.D. (1976) The role of actin in the temperature dependent gelation and contraction of extracts of *Acanthamoeba*. *J. Cell Biol.* 68:579-601.
24. Fujiwara, K. and Pollard, T.D. (1976) Fluorescent antibody localization of myosin in the cytoplasmic, cleavage furrow and mitotic spindle of human cells. *J. Cell Biol.* 71:848-875.
25. Pollard, T.D., Fujiwara, K., Handin, R. and Weiss, G. (1976) Contractile proteins in platelet activation and contraction. *Annals N.Y. Acad. Sci.* 283:218-236.
26. Schreiner, G.F., Fujiwara, K., Pollard, T.D. and Unanue, E.R. (1977) Redistribution of myosin accompanying capping of surface Ig. *J. Exp. Med.* 145:1393-1398.
27. Fujiwara, K. and Pollard, T.D. (1978) Simultaneous localization of myosin and tubulin in human tissue culture cells by double antibody staining. *J. Cell Biol.* 77:182-195.
28. Maupin-Szamier, P. and Pollard, T.D. (1978) Actin filament destruction by osmium tetroxide. *J. Cell Biol.* 77:837-852.
29. Herman, I. and Pollard, T.D. (1978) Actin localization in fixed, dividing cells stained with fluorescent heavy meromyosin. *Exp. Cell Research* 114:15-25.
30. Pollard, T.D., Stafford, W.F., III and Porter, M.E. (1978) Characterization of a second myosin from *Acanthamoeba castellanii*. *J. Biol. Chem.* 253:4798-4808.
31. Griffith, L.M. and Pollard, T.D. (1978) Evidence for actin filament-microtubule interaction mediated by microtubule-associated proteins. *J. Cell Biol.* 78:958-965.
32. Fujiwara, K., Porter, M.E. and Pollard, T.D. (1978) Alpha-actinin localization in the cleavage furrow during cytokinesis. *J. Cell Biol.* 79:268-275.
33. Braun, J., Fujiwara, K., Pollard, T.D. and Unanue, E.R. (1978) Two distinct mechanisms for redistribution of lymphocyte surface macromolecules. I. Relationship to cytoplasmic myosin. *J. Cell Biol.* 79:408-418.

34. Braun, J., Fujiwara, K., Pollard, T.D. and Unanue, E.R. (1978) Two distinct mechanisms for redistribution of lymphocyte surface macromolecules. II. Contrasting effects of local anesthetics and a calcium ionophore. *J. Cell Biol.* 79:419-426.
35. Mooseker, M.S., Pollard, T.D. and Fujiwara, K. (1978) Characterization and localization of myosin in the brush border of intestinal epithelial cells. *J. Cell Biol.* 79:444-453.
36. Herman, I.M. and Pollard, T.D. (1979) Comparison of purified anti-actin and fluorescent-heavy meromyosin staining patterns in dividing cells. *J. Cell Biol.* 80:509-520.
37. MacLean-Fletcher, S. and Pollard, T.D. (1980) Viscometric analysis of the gelation of *Acanthamoeba* extracts and purification of two gelation factors. *J. Cell Biol.* 85:414-428.
38. MacLean-Fletcher, S. and Pollard, T.D. (1980) Mechanism of action of cytochalasin B on actin. *Cell* 20:329-341.
39. MacLean-Fletcher, S. and Pollard, T.D. (1980) Identification of a factor in conventional muscle actin preparations which inhibits actin filament self-association. *Biochem. Biophys. Res. Comm.* 96:18-27.
40. Isenberg, G.H., Aebi, U. and Pollard, T.D. (1980) An actin binding protein from *Acanthamoeba* regulates actin filament polymerization and interactions. *Nature* 288:455-459.
41. Aebi, U., Smith, P.R., Isenberg, G.H. and Pollard, T.D. (1980) Structure of crystalline actin sheets. *Nature* 288:296-298.
42. Herman, I.M. and Pollard, T.D. (1981) Electron microscopic localization of cytoplasmic myosin with ferritin-labeled antibodies. *J. Cell Biol.* 88:346-351.
43. Pollard, T.D. and Mooseker, M.S. (1981) Direct measurement of actin polymerization rate constants by electron microscopy of actin filaments nucleated by isolated microvillus cores. *J. Cell Biol.* 88:654-659.
44. Pollard, T.D. (1981) Purification of a calcium-sensitive actin gelation protein from *Acanthamoeba*. *J. Biol. Chem.* 256:7666-7670.
45. Herman, I.M., Crisona, N.J. and Pollard, T.D. (1981) Relation between cell activity and the distribution of cytoplasmic actin and myosin. *J. Cell Biol.* 90:84-91.
46. Aebi, U., Fowler, W.E., Isenberg, G.H., Pollard, T.D. and Smith, P.R. (1981) Crystalline actin sheets: their structure and polymorphism. *J. Cell Biol.* 91:340-351.
47. Tseng, P.C.-H. and Pollard, T.D. (1982) Mechanism of action of *Acanthamoeba* profilin. Demonstration of actin species specificity and regulation of micromolar concentrations of $MgCl_2$. *J. Cell Biol.* 94:213-218.
48. Griffith, L.M. and Pollard, T.D. (1982) Cross-linking of actin filament networks by self-association and actin-binding macromolecules. *J. Biol. Chem.* 257:9135-9142.
49. Griffith, L.M. and Pollard, T.D. (1982) The interaction of actin filaments with microtubules and microtubule-associated proteins. *J. Biol. Chem.* 257:9143-9151.
50. Mooseker, M.S., Pollard, T.D. and Wharton, K.A. (1982) Nucleated polymerization of actin from the membrane-associated ends of microvillar filaments in the intestinal brush border. *J. Cell Biol.* 95:223-233.

51. Pollard, T.D. (1982) Structure and polymerization of *Acanthamoeba* myosin-II filaments. *J. Cell Biol.* 95:816-825.
52. Maupin, P. and Pollard, T.D. (1983) Improved preservation and staining of HeLa cell actin filaments, clathrin-coated membranes, and other cytoplasmic structures by tannic acid-glutaraldehyde-saponin fixation. *J. Cell Biol.* 96:51-62.
53. Wong, A.J., Pollard, T.D. and Herman, I.M. (1983) Actin filament stress fibers in vascular endothelial cells *in vivo*. *Science* 219:867-869.
54. Dang, C.V., Yang, D.C.H. and Pollard, T.D. (1983) Association of methionyl-tRNA synthetase with detergent-insoluble components of the rough endoplasmic reticulum. *J. Cell Biol.* 96:1138-1147.
55. Cooper, J.A., Buhle, E.L., Jr., Walker, S.B., Tsong, T.Y. and Pollard, T.D. (1983) Kinetic evidence for a monomer activation step in actin polymerization. *Biochemistry* 22:2193-2202.
56. Cooper, J.A., Walker, S.B. and Pollard, T.D. (1983) Pyrene actin: documentation of the validity of a sensitive assay for actin polymerization. *J. Muscle Res. & Cell Motility* 4:253-262.
57. Selden, S.C. and Pollard, T.D. (1983) Phosphorylation of microtubule-associated proteins regulates their interaction with actin filaments. *J. Biol. Chem.* 258:7064-7071.
58. Smith, P.R., Fowler, W.E., Pollard, T.D. and Aebi, U. (1983) Structure of the actin molecule determined from electron micrographs of crystalline actin sheets with a tentative alignment of the molecule in the actin filament. *J. Mol. Biol.* 167:641-660.
59. Pollard, T.D. (1983) Measurement of rate constants for actin filament elongation in solution. *Anal. Biochem.* 134:406-412.
60. Tseng, P.C.-H., Runge, M.S., Cooper, J.A., Williams, J.C., Jr. and Pollard, T.D. (1984) Physical, immunochemical, and functional properties of *Acanthamoeba* profilin. *J. Cell Biol.* 98:214-221.
61. Pollard, T.D. and Weeds, A.G. (1984) The rate constant for ATP hydrolysis by polymerized actin. *FEBS Lett.* 170:94-98.
62. Kiehart, D.P. and Pollard, T.D. (1984) Stimulation of *Acanthamoeba* actomyosin ATPase activity by myosin-II polymerization. *Nature* 308:864-866.
63. Cooper, J.A., Blum, J.D. and Pollard, T.D. (1984) *Acanthamoeba castellanii* capping protein: Properties, mechanism of action, immunologic cross-reactivity, and localization. *J. Cell Biol.* 99:217-225.
64. Kiehart, D.P., Kaiser, D. and Pollard, T.D. (1984) Monoclonal antibodies demonstrate limited structural homology between myosin isozymes from *Acanthamoeba*. *J. Cell Biol.* 99:1002-1014.
65. Kiehart, D.P., Kaiser, D. and Pollard, T.D. (1984) Direct localization of monoclonal antibody-binding sites on *Acanthamoeba* myosin-II and inhibition of filament formation by antibodies that bind to specific sites on the myosin-II tail. *J. Cell Biol.* 99:1015-1023.
66. Kiehart, D.P. and Pollard, T.D. (1984) Inhibition of *Acanthamoeba* actomyosin-II ATPase activity and mechanochemical function by monoclonal antibodies. *J. Cell Biol.* 99:1024-1033.

67. Pollard, T.D. (1984) Polymerization of ADP-actin. *J. Cell Biol.* 99:769-777.
68. Pollard, T.D. and Cooper, J.A. (1984) Quantitative analysis of the effect of *Acanthamoeba* profilin on actin filament nucleation and elongation. *Biochemistry* 23:6631-6641.
69. Pollard, T.D. (1984) Purification of a high molecular weight actin filament gelation protein from *Acanthamoeba* that shares antigenic determinants with vertebrate spectrins. *J. Cell Biol.* 99:1970-1980.
70. Wong, A.J., Kiehart, D.P. and Pollard, T.D. (1985) Myosin from human erythrocytes. *J. Biol. Chem.* 260:46-49.
71. Cooper, J.A. and Pollard, T.D. (1985) Effect of capping protein on the kinetics of actin polymerization. *Biochemistry*: 24:793-799.
72. Sato, M., Leimbach, G., Schwarz, W.H. and Pollard, T.D. (1985) Mechanical properties of actin. *J. Biol. Chem.* 260:8585-8592.
73. Cooper, J.A., Blum, J.D., Williams, R.C., Jr. and Pollard, T.D. (1986) Purification and characterization of actophorin, a new 15,000-dalton actin binding protein from *Acanthamoeba castellanii*. *J. Biol. Chem.* 261:477-485.
74. Kaiser, D.P., Sato, M.D., Ebert, R. and Pollard, T.D. (1986) Purification and characterization of two isoforms of *Acanthamoeba* profilin. *J. Cell Biol.* 102:221-226.
75. Selden, S.C. and Pollard, T.D. (1986) Interaction of actin filaments with microtubules is mediated by microtubule associated proteins and regulated by phosphorylation. *Ann. New York Acad. Sci.* 466:803-812.
76. Sato, M., Schwarz, W.H. and Pollard, T.D. (1986) *Acanthamoeba* profilin affects the mechanical properties of nonfilamentous actin. *J. Biol. Chem.* 261:10701-10706.
77. Adams, R.J. and Pollard, T.D. (1986) Propulsion of organelles isolated from *Acanthamoeba* along actin filaments by myosin-I. *Nature* 322:754-756.
78. Drenckhahn, D. and Pollard, T.D. (1986) Elongation of actin filaments is a diffusion-limited reaction at the barbed end and is accelerated by inert macromolecules. *J. Biol. Chem.* 261:12754-12758.
79. Magnus, K.A., Lattman, E.E., Sato, M. and Pollard, T.D. (1986) Crystallization of *Acanthamoeba* profilin-I. *J. Biol. Chem.* 261:13360-13361.
80. Maupin, P. and Pollard, T.D. (1986) Arrangement of actin filaments and myosin-like filaments in the contractile ring and actin-like filaments in the mitotic spindle of dividing HeLa cells. *J. Ultrastruct. Res.* 94:92-103.
81. Hagen, S.J., Kiehart, D.P., Kaiser, D.A. and Pollard, T.D. (1986) Characterization of monoclonal antibodies to *Acanthamoeba* myosin-I that cross-react with both myosin-II and low molecular weight nuclear proteins. *J. Cell Biol.* 103:2121-2128.
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