

CURRICULUM VITAE

NAME: WILLIAM P. SCHILLING

DATE: October, 2011

PRESENT POSITION AND ADDRESS:

Professor
Department of Physiology and Biophysics
Case Western Reserve University
School of Medicine
Cleveland, OH

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EDUCATION:

1970 - 1974	Chemistry	B.S.	Chapman College, Orange, California
1974 - 1976	Biochemistry		California State University at Fullerton, and Orange County Medical Center
1976 - 1981	Pharmacology	Ph.D.	Medical University of South Carolina, Charleston, South Carolina

PROFESSIONAL AND TEACHING EXPERIENCE:

A. POSITIONS:

2003 - Present	Professor (Tenured) , Department of Physiology & Biophysics, Case Western Reserve University School of Medicine, Cleveland, Ohio
1996 - Present	Bioscientific Staff , Department of Medicine, Rammelkamp Center for Education and Research, MetroHealth Medical Center, Cleveland, Ohio
1996 - Present	Adjunct Staff , Department of Cell Biology, Cleveland Clinic Foundation, Cleveland, Ohio

- 1995 - 2003 **Associate Professor (Tenured)**, Department of Physiology & Biophysics, Case Western Reserve University School of Medicine, Cleveland, Ohio
- 1992 - 1995 **Director, Graduate Studies**, Department of Molecular Physiology & Biophysics, Baylor College of Medicine, Houston, Texas
- 1991 - 1995 **Associate Professor (Tenured)**, Department of Molecular Physiology & Biophysics, Baylor College of Medicine, Houston, Texas
- 1985 - 1990 **Assistant Professor**, Department of Molecular Physiology & Biophysics, Baylor College of Medicine, Houston, Texas
- 1984 - 1985 **Assistant Professor**, Department of Physiology & Biophysics, University of Texas Medical Branch, Galveston, Texas
- 1983 - 1984 **Research Instructor**, Department of Physiology & Biophysics, University of Texas Medical Branch, Galveston, Texas
- 1981 - 1983 **Research Associate**, Department of Pharmacology, Medical University of South Carolina, Charleston, South Carolina

B. TEACHING:

- 2006 - present **First Year Medical Curriculum**; Interactive Session, ~15 students/session; 8 contact hr; 5 sessions: *Signal Transduction: Classes of Hormone Receptors and Intracellular Signaling Pathways; Cardiac Contractility; Cardiac Action Potential; Cardiac Conduction; Action Potential Lab*
- 1997 - present **Phol 466**, Cell Signaling, Lecture: *Calcium signaling in non-excitabile cells* (6 contact hr.), Case Western Reserve University School of Medicine
- 2004 - present **Phol 468**, Membrane Physiology, 6 lectures: *Introduction to Membrane Physiology; Na⁺,K⁺-ATPase; Ca²⁺-ATPase; Na⁺,Ca²⁺-Exchanger; Excitation-Contraction Coupling; TRP Channels* (~9 contact hrs), Case Western Reserve University School of Medicine
- 1999 - 2006 **Core Medical Physiology**; Combined Basic Science/Clinical Small Group Conferences on *Calcium Homeostasis*; 20 students; (2 contact hr) Organized the basic science component. Case Western Reserve University School of Medicine
- 2001 - 2003 **Core Medical Physiology**; Small Group Conference on *Cardiac Electrophysiology*; 20 students; (1 contact hr), Case Western Reserve University School of Medicine

- 2002 - 2004 **Phol 468**, Membrane Physiology, Course Director, 3 lectures: *Introduction Membrane Physiology, Na/Ca Exchanger, Ion channels in non-excitabile cells* (~8 contact hrs), Case Western Reserve University School of Medicine
- 2001 - 2002 **Phol 514**, Introduction to Cardiopulmonary Physiology, Lecture: *Excitation/Contraction Coupling* (1.5 contact hr.), Case Western Reserve University School of Medicine
- 1997 - 2002 **Phol 518**, Integrative approaches to cardiovascular research, Lectures: *Endothelium and vascular function* (3 contact hr.), Case Western Reserve University School of Medicine.
- 1996 - 1997 **Horizons in Biomedical Science**, Undergraduate Minority Summer Program, Lecture: *Receptor-operated Ca²⁺ Channels* (1 contact hr), Case Western Reserve University School of Medicine
- 1989 - 1991 **Core Medical Physiology**, Lectures: *Membrane Physiology I thru V; The Vascular Endothelium*. Pathophysiological Correlation: *Heart Failure*, (6 contact hr.), Baylor College of Medicine
- 1987 - 1992 **Cell Regulation, Signal transduction, and Ion Channels** (Graduate Elective), Lectures: *Intracellular Signaling Mechanisms, Carrier Kinetics, Na,K-ATPase pump, Na,Ca-Exchanger*, (7.5 contact hr.), Baylor College of Medicine
- 1986 - 1989 **Core Medical Physiology**, Lectures: *Regulation of Food Intake; Salivation, Chewing and Swallowing; The Stomach; The Pancreas*, (4 contact hr.), Baylor College of Medicine
- 1980 - 1983 **Core Medical Pharmacology 601**, Laboratory exercise on isolated rabbit heart preparation, (3 contact hr.), Medical University of South Carolina, Charleston, South Carolina
- 1982 - 1983 **Core Medical Pharmacology 601**, Small Group Conference on Cardiac Drugs, (1 contact hr) Medical University of South Carolina, Charleston, South Carolina
- 1983 **Core Dental Pharmacology 621**, Lecture: *Drugs of Abuse*, (1 contact hr), Medical University of South Carolina, Charleston, South Carolina
- 1979 - 1982 **Core Dental Pharmacology 621**, Lecture: *Antiarrhythmic Agents*, (1 contact hr) Medical University of South Carolina, Charleston, South Carolina
- 1980 **Core Dental Pharmacology 621**, Lecture: *Local Anesthetics*, (1 contact hr) Medical University of South Carolina, Charleston, South Carolina
- 1983 **Cardiovascular Pharmacology** (Graduate Elective; ~40 contact hr), Medical University of South Carolina, Charleston, South Carolina

1979 - 1983 **Introduction of Principles and Practices of Pharmacology** (Undergraduate)
Lecture: *Physiology and Pharmacology of the Heart*, (2 contact hr) Medical
University of South Carolina, Charleston, South Carolina

C. **TRAINEES:**

John Drewe, Ph.D., Graduate Student, lab rotation, 1984.
Gretchen Hanson, Ph.D., Graduate Student, **Dissertation research**, 1987-1989.
Eva Strobl-Jager, M.D., Postdoctoral Associate, 1988.
Stephen J. Elliott, M.D., Research Fellow, 1987-1992
Rita Alevriadou, MS, Ph.D., Graduate Student, **Thesis research**, 1988
Ching-Fong Liao, Ph.D., Graduate Student, **Dissertation research**, 1989
Bill Ho, Graduate Student, lab rotation, 1988
David Rickman, Graduate Student, lab rotation, 1990
Olga A. Cabello, Ph.D., Graduate Student, **Dissertation research**, 1990-1993
Makoto Mo, M.D., Research Fellow, 1990
Kerry Stewart, M.D., Research Fellow, 1991
Yanfang Hu, Ph.D., Graduate Student, **Dissertation research**, 1992-1994
Xilin Chen, Ph.D., Postdoctoral Associate, 1992-1994
Ying Wu, Ph.D., Postdoctoral Associate, 1993-1994
Yanjie Dong, Ph.D., Postdoctoral Associate, 1994-1995.
Reynaldo Garcia, Ph.D., Postdoctoral Associate, 1996-1997
William Sinkin, Ph.D., Postdoctoral Associate, 1993-1997
Sun-Ah You, Ph.D., Postdoctoral Associate, 2000-2001
Brian Wisnosky, Graduate Student. **Dissertation Research**, 1999-2004
Monu Goel, Ph.D., Postdoctoral Associate, 1999-2003
Michelle Innocenti, Graduate Student, lab rotation, 2002
Steven Woltering, Undergraduate Student, Senior Project, 2003-2004
Yuka Maeno-Hikichi, Ph.D., Postdoctoral Associate, 2004-2005
Jeff Lock, Graduate Student, lab rotation, 2007
Krekwit Shinlapawittayatorn, Graduate Student, lab rotation, 2007
Jeff Lock, Graduate Student, **Dissertation Research**, 2008-present
Matt Cohen, Graduate Student, lab rotation, 2009-2010.

HONORS AND AWARDS:

1974 B.S., *Magna cum Laude* with Honors in Chemistry
1976 - 1981 NIH Pre-Doctoral Fellowships
1983 - 1984 Drug Science Foundation Scholar
1989 - 1994 American Heart Association Established Investigatorship
1994 Excellence in Graduate Education Award, Baylor College of Medicine

SOCIETY MEMBERSHIPS:

1984 - Present	Biophysical Society
1991 - 2007	American Association for the Advancement of Science
1993 - Present	American Physiological Society
1994 - Present	Society of General Physiologists

RESEARCH

A. AREAS OF RESEARCH INTERESTS:

1. Structure, Function, and Regulation of Mammalian TRPC Channels
2. Role of Ca²⁺ Channels in Oxidant Stress-induced Cell Death

B. CURRENT RESEARCH SUPPORT:

As Principal Investigator:

R01-HL097355 (Schilling) 09/01/09 – 08/30/12
NIH/NHLBI Annual Direct: \$250,000
Regulation of PMCA pump-channel by oxidant stress
This project will determine the molecular mechanisms associated with conversion of the PMCA pump into a Ca²⁺-permeable, non-selective cation channel induced by oxidant stress in vascular endothelial cells.

As Co-Investigator:

1R01-HL090886 (Kunze) 07/01/09 - 06/30/12
NIH/NHLBI Annual Direct: \$255,172
Mechanism of Homeostatic Plasticity in a Visceral Sensory Circuit
This project examines the synaptic mechanisms that lead to depressed transmission of chemosensory information in a model of chronic intermittent hypoxia

C. PAST RESEARCH SUPPORT (as Principal Investigator):

Guion Pool Keating Endowment for Research in Cardiology (BSRG); Dihydropyridine binding in isolated cardiac sarcolemma; Total Direct: \$10,000, Date: 1984.
AHA-Texas Affiliate Grant 85G-657, Dihydropyridine binding in isolated cardiac sarcolemma; Total Direct: \$50,000, Date: 1985-1987.
NIH P01 HL37044, Project 4, Dihydropyridine binding in isolated cardiac sarcolemma preparations; Total Direct: \$244,204, Date: 1985-1989.
NIH R29 HL44119, Calcium signaling in vascular endothelial cells; Total Direct: \$358,748, Date: 1989-1995.
AHA-Established Investigatorship; Signal transduction in vascular endothelial cells; Total Direct: \$210,000, Date: 1989-1994.
NIH R01 HL47876; Transduction of hemodynamic signals into vascular cells; Total Direct: \$440,920, Date: 1991-1995.
AHA-Postdoctoral Fellowship to William Sinkins, "Structure and function of store-operated channels" W.P. Schilling, Sponsor; Total Direct: \$53,200, Date: 1996-1998.
CWURU/HHMI-Pilot Project Grant, "Ion Channels and Necrotic Cell Death"; Total Direct: \$80,000, Date: 1998-2000.

AHA-Grant-in-Aid 9950014N, "Ion channels and Necrotic Cell Death", Total Direct: \$100,000;
Date: 07/01/99-12/31/01.

AHA-Postdoctoral Fellowship to Monu Goel, "Role of immunophilins and InaD in regulation of
Trp channel activity"; Sponsor, W. P. Schilling; Total Direct: \$70,000,
Date: 07/01/00-06/30/02.

Novartis Pharmaceuticals Horsham, U.K., Research Contract, "Electrophysiological
Characterization of Human TRPC6 and TRPC7 Channels", Total Direct: \$319,150,
Date: 2000-2005.

Novartis Institutes for BioMedical Research, Research Contract, "Determination of biophysical
properties of TRPC3 and TRPC6 heteromultimers", Total Direct: \$160,000,
Date: 2007-2009.

NIH T32-HL007887, "Heart-Lung Physiology: Molecular-systemic integration", Total
Direct: \$484,163, Date: 2007-2008

NIH R01-GM52019, "Ca²⁺ Channels in Non-Excitable Cells"; Total Direct: \$2,578,846;
Dates: 08/01/95-07/30/07.

NIH R01 HL65323, "Role of Ion Channels in Cell death"; Total Direct: \$800,000;
Dates: 01/01/02-12/31/06.

INVITED SEMINARS:

A. NATIONAL

Universities/Medical Schools

Duke University, Department of Physiology, 1983

University of Texas Medical Branch, Galveston, Department of Physiology, 1983

University of California at Los Angeles, Department of Biology, 1983

University of California at San Diego, Division of Pharmacology, 1983

University of Colorado, Denver, Department of Physiology, 1983

Case Western Reserve, Department of Physiology, 1988

Rice University, Department of Chemical Engineering, 1989

Baylor College of Medicine, Department of Medicine, Cardiovascular Sciences, 1989

Rice University, Department of Chemical Engineering, 1990

Medical University of South Carolina, Department of Pharmacology, 1990

University of Houston School of Pharmacy, Department of Pharmacology, 1990

University of Texas Medical Branch, Department of Physiology, 1990

Cleveland Clinic, Department of Vascular Cell Biology, 1991

Texas A&M University, Department of Medical Physiology, 1992

Texas A&M University, Department of Pharmacology, 1993

Zeneca Pharmaceuticals, Wilmington, DE, 1993

Univ. of Texas Health Science Center, Houston, TX, Department of Physiology, 1994

Univ. of Texas Health Science Center, San Antonio, TX, Department of Physiology, 1994

Indiana University, Department of Physiology, 1994

University of Vermont, Department of Pharmacology, 1994

Medical College of Pennsylvania, Department of Physiology, 1994

Rice University, Department of Chemical Engineering, 1994

Baylor College of Medicine, Department of Pathology, 1994
Case Western Reserve University, Department of Physiology & Biophysics, 1994
Cleveland Clinic, Department of Molecular Cardiology, 1995
Loyola University of Chicago, Department of Physiology, 1995
University of California at Irvine, Department of Physiology, 1997
University of Rochester, Department of Pharmacology, 1997
Cleveland Clinic, Division of Anesthesiology, 1999
University of Chicago, Department of Cell Physiology, 1999
University of Texas, Southwestern, Department of Physiology, 2000
Bowling Green State University, Department of Biology, 2000.
University of Oklahoma Health Sciences Center, Department of Cell Biology, 2000
Northeast Ohio Universities College of Medicine, Department of Physiology, 2001
Ohio State University School of Medicine, Biochemistry Graduate Program, 2002
Baylor College of Medicine, Department of Molecular Physiology and Biophysics, 2002
Cleveland State University, Department of Chemistry, 2003
Case Western Reserve University, Department of Pharmacology, 2004
University of California, Davis, Department of Pharmacology, 2004
Texas Tech University Health Science Center, Department of Physiology, 2004
University of Chicago, Department of Neurobiology, Pharmacology, and Physiology, 2005
NIH/NIEHS, Research Triangle Park, NC, Laboratory of Cell Signaling, 2005
UMDNJ New Jersey Medical School, Department of Pharmacology and Physiology, 2006
Genzyme Corporation, Drug Discovery and Development, Waltham, MA, 2006
Northeast Ohio Universities College of Medicine, 2006
Genzyme Corporation, Drug Discovery and Development, Waltham, MA, May, 2007
Genzyme Corporation, Drug Discovery and Development, Waltham, MA, November, 2007
Loyola University of Chicago, Department of Physiology, 2008
University of Toledo College of Medicine, Department of Physiol. and Pharmacol, 2008

Conferences

FASEB, *Endothelial Cell Biology*, (Session Chair) 1991
Gorden Research Conference, *Atherosclerosis*, 1991
FASEB Summer Research Conference, *Microvascular Biology*; Copper Mountain, CO, 1992
University of California at Los Angeles, *Vascular Biology Series*, 1993
Gordon Conference, *Calcium Signalling*, 1995
FASEB Summer Research Conference, *Biology and Chemistry of Vision*, 1995
University of Utah, Bristol-Myers Squibb Symposium on *Ion Channels*, 1998
Gordon Conference, *Calcium Signalling*, 1999
Gordon Conference, *Mycotoxins and Phycotoxins*, 2001
American Society of Nephrology, TRP Channel Mini-symposium, 2006
FASEB, *Ion Channel Trafficking in the Kidney*, 2011

B. INTERNATIONAL

Mexican Cardiology Society, Veracruz, Mexico, 1993
Physiological Society, King's College, London, 1993
IUPHAR, *Vascular Neuroeffector Mechanisms*, Kananaskis, Alberta, Canada, 1994
University of Bath, *International Symposium on Calcium Signalling*, (Session Chair) 1995

Novartis Pharmaceuticals, Horsham, UK, 1999
Novartis Pharmaceuticals, Horsham UK, 2003
Novartis Foundation Symposium (Closed Session), *TRP Channels as Molecular Targets*,
London, UK, 2003 (Organized this Symposium with Foundation Staff)
Novartis Foundation Symposium (Open Session), *TRP Channels as Molecular Targets*,
London, UK, 2003 (Organized this Symposium with Foundation Staff)
Novartis Pharmaceuticals, Horsham, UK, 2005
University of Oxford, Oxford, U.K., 2005
Novartis Pharmaceuticals, Horsham UK, 2008
University of Oxford, Oxford, U.K., 2008

PROFESSIONAL SERVICE:

A. INTERNAL

Case Western Reserve University/Rammelkamp Center for Research

Member, Faculty Council (School of Medicine, CASE), 2010-present
Member, Research Committee (School of Medicine, CASE), 2002-present
Member, Committee on Appointments, Promotion & Tenure (Physiology, CASE) 2010-present
Member, Graduate Education Committee (Physiology, CASE) 2007-present
Member, Board of Directors, MetroHealth Research Institute, 2005-present
Chairman, Shared Resources Committee (Rammelkamp Center), 1995-present
Member, Graduate Student Advisory Committees (Physiology, CASE), 1995-present
Member, Computer Committee (Rammelkamp Center), 2000-present
Member, Executive Faculty Committee (Rammelkamp Center), 2000-2003
Chairman, Faculty Recruitment Committee (Rammelkamp Center), 2004-2005
Member, Faculty Recruitment Committee (Rammelkamp Center), 2000-2001
Member, Seminar Committee (Physiology, CASE), 1997-2003
Member, Graduate Student Admissions Committee (Physiology, CASE), 1996-2000
Member, Promotions and Tenure Committee (Physiology, CASE), 1997-1999

Baylor College of Medicine

Member, Student Promotions and Acad. Achievement Committee (Medical School), 1990-1992.
Member, Faculty Research & Fellowship Support Committee (Medical School), 1991-1993.
Member, Executive Council (Graduate School), 1992-1995.
Member, Curriculum and Policy Committee (Graduate School), 1985-1995.
Member, SMART Program Committee (Graduate School), 1989-1992.
Member, Graduate Advisory Committees (Graduate School), 1985-1995
Member, Graduate Education Committee (Physiology), 1985-1995.
Member, Shared Equipment Committee (Physiology), 1985-1995.
Environmental Safety Supervisor (Physiology), 1985-1995.

B. NATIONAL

Member, Research Committee, Am. Heart Assoc.-Ohio Valley Affiliate, 2006-2009
Vice Chair, Research Committee, Am. Heart Assoc.-Ohio Valley Affiliate, 2004-2006
Member, Editorial Board, *Am. J. Physiol:Heart and Circulatory Physiology*, 2000 - 2005

Member, Editorial Board, *Am. J. Physiol:Cell Physiology*, 1996 - 2002
Member, American Heart Association, Molecular Signaling I Study Committee, 1996 - 1999
Member, American Heart Association, Mid-America Consortium Study Group, 1998-1999
Member, American Heart Association-Ohio Affiliate, Research Study Group, 1997
Member, *Ad hoc*, NIH Study Section, CBY-2, 1997
Member, Editorial Board, *Am. J. Physiol:Heart and Circulatory Physiology*, 1990 - 1996
Member, American Heart Association, Vascular Wall Biology Study Committee, 1991 - 1995
Member, Am. Heart Association, TX-Affiliate, Central Research Review Committee, 1990-1993
Member, NHLBI Program Project Grant Site Visit Committee, 1986

C. **INTERNATIONAL**

Ad Hoc Grant Reviews for:

The Wellcome Trust, UK.
Binational Science Foundation, Israel
University of Melbourne, Australia, Thesis Examination
The Israel Science Foundation
Australian Research Council
Flinders University of South Australia, Thesis Examination
Medical Research Council, London, UK
FWF der Wissenschaftsfonds, Austria
National Science Foundation

D. **EXTERNAL CONSULTING**

Paid Consultant for:

Novartis Pharmaceuticals, Horsham, UK, 2000-2009
Genzyme Corporation, Drug Discovery and Development, Waltham, MA, 2006-2008

BIBLIOGRAPHY:

1. Van Alstyne, E., Bartschat, D.K., Wellsmith, N.V., Poe, S.L., **Schilling, W.P.**, and Lindenmayer, G.E. Isolation of a highly enriched sarcolemma membrane fraction from canine heart. *Biochem. Biophys. Acta* **553**:338-395, 1979.
2. Hungerford, R.T., Lindenmayer, G.E., **Schilling, W.P.**, and Van Alstyne, E. The effects of membrane potential on sodium-dependent calcium transport in cardiac sarcolemma vesicles. In *Electrogenic transport: Fundamental principles and physiological implications.* (M.P. Blaustein and M.L. Lieberman, Eds.) Raven Press, New York, 1984.
3. **Schilling, W.P.** and Lindenmayer, G.E. Voltage-sensitive calcium flux promoted by vesicles in an isolated cardiac sarcolemma preparation. *J. Memb. Biol.* **79**:163-173, 1984.
4. **Schilling, W.P.**, Schuil, D.W., Bagwell, E.D., and Lindenmayer, G.E. Sodium and potassium permeability of membrane vesicles in a sarcolemma enriched preparation from canine ventricle. *J. Memb. Biol.* **77**:101-114, 1984.

5. **Schilling, W.P.** and Drewe, J.A. Voltage-sensitive nitrendipine binding in an isolated cardiac sarcolemma preparation. *J. Biol. Chem.* **261**:2750-2758, 1986.
6. Colden-Stanfield, M., **Schilling, W.P.**, Ritchie, A.K., Eskin, S.G., Navarro, L.T., and Kunze, D.L. Bradykinin-induced increases in cytosolic calcium and ionic currents in cultured bovine aortic endothelial cells. *Circ. Res.* **61**:632-640, 1987.
7. **Schilling, W.P.**, Ritchie, A.K., Navarro, L.T., and Eskin, S.G. Bradykinin-stimulated calcium influx and cytosolic calcium changes in bovine aortic endothelial cells. *Am. J. Physiol.* **255**:H219-H227, 1988.
8. **Schilling, W.P.** Effect of divalent cation chelation on dihydropyridine binding in isolated cardiac sarcolemma vesicles. *Biochem. Biophys. Acta* **943**:220-230, 1988.
9. Rampe, D., Poder, T., Zhao, Z.-Y., and **Schilling, W.P.** Calcium channel agonist and antagonist binding in a highly enriched sarcolemma preparation obtained from canine ventricle. *J. Cardiovas. Pharmacol.* **13**:547-556, 1989.
10. **Schilling, W.P.** Effect of membrane potential on bradykinin-stimulated changes in cytosolic calcium in bovine aortic endothelial cells. *Am. J. Physiol.* **257**:H778-H784, 1989.
11. Elliott, S.J., Eskin, S.G., and **Schilling, W.P.** Effect of t-butyl-hydroperoxide on bradykinin-stimulated changes in cytosolic Ca²⁺ in vascular endothelial cells. *J. Biol. Chem.* **264**:3806-3810, 1989.
12. **Schilling, W.P.**, Rajan, L., and Strobl-Jager, E. Characterization of the bradykinin-stimulated calcium influx pathway of cultured vascular endothelial cells: Saturability, selectivity and kinetics. *J. Biol. Chem.* **264**:12838-12848, 1989.
13. Rani, C.S.S., **Schilling, W.P.**, and Fields, J.B. Stimulation of intracellular calcium mobilization by thyrotropin in dog thyroid cells: Comparison with the effects of carbachol and ATP. *Endocrinology* **125**:1889-1897, 1989.
14. Hamilton, S.L., Alvarez, R.M., Fill, M., Hawkes, M.J., Brush, K.L., **Schilling, W.P.**, and Stefani, E. [³H]PN200-110 and [³H]ryanodine binding and reconstitution of ion channel activity with skeletal muscle membranes. *Anal. Biochem.* **183**:31-41, 1989.
15. Elliott, S.J. and **Schilling, W.P.** Carmustine augments the effects of tert-butyl-hydroperoxide on calcium signaling in cultured pulmonary artery endothelial cells. *J. Biol. Chem.* **265**:103-107, 1990.
16. **Schilling, W.P.**, Zaher, M., and Rampe, D. Effect of inorganic calcium channel blockers on dihydropyridine binding in isolated cardiac sarcolemma vesicles. *Mol. Pharmacol.* **37**: 80-89, 1990.
17. Colden-Stanfield, M., **Schilling, W.P.**, Possani, L.D., and Kunze, D.L. Bradykinin-induced potassium current in cultured bovine aortic endothelial cells. *J. Memb. Biol.* **116**:227-238, 1990.

18. Liao, C.F., **Schilling, W.P.**, Birnbaumer, M., and Birnbaumer, L. Cellular responses to stimulation of the type-5 muscarinic acetylcholine receptor as seen through stable expression in murine L Cells. *J. Biol. Chem.* **265**:11273-11284, 1990.
19. Elliott, S.J. and **Schilling, W.P.** Oxidative stress inhibits bradykinin stimulated $^{45}\text{Ca}^{2+}$ flux in pulmonary vascular endothelial cells. *Am. J. Physiol.* **260**:H549-H556, 1991.
20. Mo, M., Eskin, S.G, and **Schilling, W.P.** Flow-induced changes in calcium signalling of vascular endothelial cells: Effect of shear stress and ATP. *Am. J. Physiol.* **260**:H1698-H1707, 1991.
21. Elliott, S.J. and **Schilling, W.P.** The vascular endothelium in oxidant-induced lung injury. In Free radical mechanisms of tissue injury. Eds. M.T. Moslen and C.V. Smith, CRC Press, Boca Raton, 1992.
22. **Schilling, W.P.**, Mo, M., and Eskin, S.G. Effect of shear stress on cytosolic Ca^{2+} of calf pulmonary artery endothelial cells. *Exp. Cell Res.* **198**:31-35, 1992.
23. Elliott, S.J. and **Schilling, W.P.** Oxidant-stress alters Na^+ pump and $\text{Na}^+\text{-K}^+\text{-Cl}^-$ cotransporter activities in vascular endothelial cells. *Am. J. Physiol.* **263**:H96-H102, 1992.
24. **Schilling, W.P.** and Elliott, S.J. Ca^{2+} signaling mechanisms of vascular endothelial cells and their role in oxidant-induced endothelial cell dysfunction. (Invited Review) *Am. J. Physiol.* **262**:H1617-H1630, 1992.
25. **Schilling, W.P.**, Cabello, O. and Rajan, L. Depletion of the inositol-1,4,5-trisphosphate-sensitive intracellular Ca^{2+} store in vascular endothelial cells activates the agonist-sensitive Ca^{2+} influx pathway. *Biochem. J.* **284**:521-530, 1992.
26. Vaca, L., **Schilling, W.P.** and Kunze, D.L. G-protein-mediated regulation of a Ca^{2+} -dependent K^+ channel in cultured vascular endothelial cells. *Pflügers Arch.* **422**:66-74, 1992.
27. Elliott, S.J., Meszaros, J.G. and **Schilling, W.P.** Effect of oxidant-stress on calcium signaling in vascular endothelial cells. (Invited Review) *Free Rad. Biol. Med.* **13**:635-650, 1992.
28. Hanson, G.L., **Schilling, W.P.**, and Michael, L.H. Developmental changes in canine cardiac sarcolemmal activities of Na^+ , $\text{K}^+\text{-ATPase}$ and Na^+ , Ca^{2+} exchange. *Am. J. Physiol.* **264**:H320-H326, 1993.
29. Alevriadou, B.R., Eskin, S.G., McIntire, L.V., and **Schilling, W.P.** Effect of shear stress on $^{86}\text{Rb}^+$ efflux from calf pulmonary artery endothelial cells. *Ann. Biomedical Eng.* **21**:1-7, 1993.
30. Elliott, S.J., Doan, T.N. and **Schilling, W.P.** Role of lipid peroxidation in tert-butylhydroperoxide-induced inhibition of endothelial cell calcium signaling. *J. Pharmacol. Exp. Therap.* **264**:1063-1070, 1993.

31. Cabello, O.A. and **Schilling, W.P.** Vectorial Ca^{2+} flux from the extracellular space to the endoplasmic reticulum via a restricted cytoplasmic compartment regulates inositol 1,4,5-trisphosphate-stimulated Ca^{2+} release from internal stores in non-excitabile cells. *Biochem. J.* **295**:357-366, 1993.
32. Cabello, O.A. and **Schilling, W.P.** Calcium signaling processes in endothelial cells. In Functionality of endothelium in Health and Disease: A comprehensive review. (G. Pastelin, R. Rubio, G. Ceballos, J.Suarez, Eds.) Sociedad Mexicana de Cardiologia, Veracruz, 1994.
33. Tian, P., Hu, Y., **Schilling, W.P.**, Lindsay,D.A., Eiden, J. and Estes, M.K. The nonstructural glycoprotein of rotavirus affects intracellular calcium levels. *J. Virology* **68**:251-257, 1994.
34. Hu, Y., Rajan, L. and **Schilling, W.P.** Ca^{2+} signaling in Sf9 insect cells and the functional expression of a rat brain M_5 muscarinic receptor. *Am. J. Physiol. (Cell Physiol.)* **266**:C1736-C1743, 1994.
35. Hu, Y., Vaca, L., Zhu, X., Birnbaumer, L., Kunze, D.L. and **Schilling, W.P.** Appearance of a novel Ca^{2+} influx pathway in Sf9 insect cells following expression of the transient receptor potential-like (trpl) protein of *Drosophila*. *Biochem. Biophys. Res. Comm.* **201**:1050-1056, 1994.
36. Vaca, L., Sinkins, W.G., Hu, Y., Kunze, D.L. and **Schilling, W.P.** Activation of recombinant *Trp* by thapsigargin in Sf9 insect cells. *Am. J. Physiol. (Cell Physiol.)* **267**:C1501-C1505, 1994.
37. Hu, Y. and **Schilling, W.P.** Receptor-mediated activation of recombinant *Trp1* expressed in Sf9 insect cells. *Biochem. J.* **305**:605-611, 1995.
38. Daniels, E.E., van Breemen, C., **Schilling, W.P.**, and Kwan,C.-Y. Regulation of vascular tone: cross-talk between sarcoplasmic reticulum and plasmalemma. *Can. J. Physiol. Pharmacol.* **73**:551-557, 1995.
39. Tian, P. Estes, M.K., Hu, Y., Ball, J.M., Zeng, C.Q.-Y., and **Schilling, W.P.** The rotavirus nonstructural glycoprotein NSP4 mobilizes Ca^{2+} from the endoplasmic reticulum. *J. Virology*, **69**:5763-5772, 1995.
40. Dong, Y., Kunze, D.L., Vaca, L. and **Schilling, W.P.** Inositol 1,4,5-trisphosphate activates the *Drosophila* cation channel *Trpl* in recombinant baculovirus-infected Sf9 insect cells. *Am. J. Physiol.(Cell Physiol.)* **269**: C1332-C1339, 1995.
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