

CURRICULUM VITAE

RAYMOND C HARRIS, M.D.

Date of Birth: March 26, 1952
Address: Renal Division
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Vanderbilt University School of Medicine
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Education:

1970-1974 Yale University
New Haven, CT
Degree: B.S.-Biology - summa cum laude
1974-1978 Emory University School of Medicine
Atlanta, GA
Degree: M.D. - magna cum laude

Post Graduate Training:

1978-1981 Residency in Internal Medicine
University of California Medical Center
San Francisco, CA
1982-1986 Fellowship in Nephrology
Brigham and Women's Hospital
Boston, MA

Licensure and Certification:

1979 National Board of Medical Examiners, Certificate
#199213
1980 California License
1981 Board Certified in Internal Medicine
1982 Massachusetts License
1987 Board Certified in Nephrology
1987 Tennessee License Registration # MDO18395

Appointments:

7/1/07- Professor of Molecular Physiology and Biophysics
1/1/2000- Director, Vanderbilt Division of Nephrology and Hypertension
1/1/98-12/31/99 Director of Research, Nephrology Division
5/1/98-2003 Associate Director, Vanderbilt Hypertension Training
Grant (Tadishi Inagami, Director)
7/1/97- Professor of Medicine
Vanderbilt University School of Medicine
9/1/96- Director, Vanderbilt O'Brien Center for the Study
of Renal Disease
9/1/91-6/30/97 Associate Professor of Medicine
Vanderbilt University School of Medicine
7/1/86-8/31/91 Assistant Professor of Medicine
Vanderbilt University School of Medicine
7/1/91-6/30/96 Clinical Investigator
Veterans Administration
1/1/87-12/31/90 Research Associate Veterans Administration
1986-present Staff Physician/Nephrologist
Veterans Administration Hospital
Nashville, TN.
1982 Physician
Direct Relief Organization
Pont L'Estere, Haiti
1981-1982 Associate Physician
Kaiser Permanente Hospital
Oakland, CA

Awards and Honors:

1970 National Merit Scholar
1976 Alpha Omega Alpha
1981 Diplomate, American Board of Internal Medicine
1986 Diplomate, American Board of Internal Medicine (Nephrology)
1/1/87-12/31/90 Research Associate-Veterans Administration
7/1/91-6/30/96 Clinical Investigator-Veterans Administration
1993 American Society for Clinical Investigation
2000 Ann and Roscoe Robinson Chair of Medicine
2000 Association of American Physicians
2001 Fellow, Council for High Blood Pressure Research
2002-2010 America's Top Doctors
2003 Fellow, American Heart Association
2005 Fellow, American Society of Nephrology
2012 American Clinical and Climatological Association

Memberships and Committees (external):

American College of Physicians
American Society of Nephrology

International Society of Nephrology
American Society of Clinical Investigation (1993)
American Federation of Clinical Research
(Vanderbilt Representative for AFCR, 1990-1996)
American Physiological Society
American Society for Biochemistry and Molecular Biology
Council Member, American Heart Association Cardiorenal Council 1997-2001
National Kidney Foundation Young Investigator study section 1992-1993
Kentucky American Heart Association study section 1993
American Heart Association (National) Cardiorenal Section 1994-1995
Veterans Affairs Nephrology Merit Review Board 1994-1997
Chairman: 1996-97
NIDDK Pathobiology A study section
Ad hoc reviewer: 1990-1994
member: 7/95-6/99
Ad hoc Review Committee for O'Brien Renal Centers 3/98
National Kidney Foundation Fellowship Review Board, 1999
Ad hoc Reviewer NHLBI program project grant review, 1999
Nashville Veterans Administration Hospital R&D Committee 1994-2000
Editorial Board, American Journal of Physiology:Renal, Fluid and Electrolyte
Physiology (7/90-6/94; 7/96-6/2001)
Editorial Board, The American Journal of the Medical Sciences
Co-Organizer 2000 ASN Basic Science Conference "New Directions in Mechanisms
of Renal Disease Progression".
Editorial Committee, The Journal of Clinical Investigation 1996-2001
Editorial Board, Journal of the American Society of Nephrology 2001-2004
Chairman, Nephrology subsection Southern Society for Clinical Investigation, 2002
Co-Chairman, NIH O'Brien Renal Center Review Committee, 2002
Co-Chairman, NKF Basic Science Fellowship Review Committee, 2003-4
Chairman, NKF Basic Science Fellowship Review Committee, 2005-6
Managing Editor, Frontiers in Bioscience, 2003
Program Committee, High Blood Pressure Council of AHA, 2004-6
Associate Editor, Journal of American Society of Nephrology 2004-07
Technical Expert Panel, Medicare Medication Demonstration Project, Network 8 2004-5
Faculty of 1000 2005-
Deputy Editor, Journal of American Society of Nephrology 2007-2011
American Society of Nephrology, Program Committee 2007
Ad hoc Reviewer, NIH NIDDK Medicine D Study Section
American Society of Nephrology, Program Committee 2008
American Society of Nephrology, Head-Program Committee 2009
American Society of Nephrology Education Committee 2008-2010
Nephrology Section Editor: Andreoli and Carpenter's Cecil Essentials of
Medicine. 8th edition.
Editorial Board, Nutrition and Dietary Supplements
AHA Council on Kidney in Cardiovascular Diseases Nominating Committee
2010-12,2012-2014
Chair, NIDDK PKD Center Review Committee, 2010
American Society of Nephrology Council 2010-2017
NIDDK DP3 Editorial Board Review, Bethesda MD, 2011
ACCA, 2012
NIDDK Co-chair Renal O'Brien Review Committee 2012

Editorial Board, Journal of Clinical Investigation 2012-
Guest co-editor, Experimental Cell Research 2012
Permanent Member:NIDDK Pathobiology of Kidney Disease

Memberships and Committees (internal):

Executive Council, Department of Medicine
Committee on Appointments and Promotions, Department of Medicine
Chair, 2011-
Committee on Awards, Department of Medicine
Department of Medicine Compensation Plan Advisory Board
Search Committee, Department of Surgery, for Chief of Transplant Surgery
Search Committee, Chair of GI Cancer Biology
Medical Center Medical Board 2003-2005, 2007-2009
Search Committee, Chief of GI Division
Research Compliance Committee, Department of Medicine
Search Committee, Cardiology Chief
VA Research and Development Committee 1994-2000, 2008-

Teaching Responsibilities:

Pharmacology 501 1991-2009
Review course for 4th year medical students
Renal Physiology Core Lectures
Coordinator, Renal Research Journal Club: 1987-91, 1993, 1996, 1998
Coordinator, Renal Research Conference: 1989, 1992, 1994, 1998
Coordinator, Renal Physiology Conference
Attending physician 1986-

Thesis Committees:

David Clark
Michelle Cissell
Ashley Cowart
John Davidson
Scott Myers
Julio Alaya
Scott Boyle
David Frank
Ada Braun
Melissa Langworthy
Karen Riggins
Xi Zhang
Takuto Chiba

Invited Lectures (selected):

Visiting Professor, Mt. Sinai School of Medicine, New York, New York, September 20, 1988.

"Epidermal growth factor in the kidney" 1st International Workshop on Renal

Growth in Health and Disease, Royal College of Physicians, London, September 16, 1989.

"Role of epidermal growth factor in the kidney" 11th International Congress of Nephrology, Tokyo, July, 1990

"Regulation of protein synthesis in proximal tubule and mesangial cells" American Heart Association Scientific Conference on Cellular Mechanisms of Renal, Cardiac and Smooth Muscle Hypertrophy. San Francisco, April 4, 1991

"Regulation of mesangial cell gene expression, collagen production and growth by mechanical stretch" American Federation for Clinical Research. Baltimore, MD, May 2, 1992

"Regulation of glomerular microcirculation by EGF" NIH Conference on Physiologic Roles of the EGF System, Nashville, TN November 7-9, 1992

"Effect of intraglomerular pressure on mesangial cell dysfunction" National Kidney Foundation, Baltimore, MD, November 14, 1992

Visiting Professor, University of Ottawa. February 17-18, 1993

Visiting Professor, McGill University, Montreal Canada, February 19-20, 1993

Visiting Professor, University of West Virginia, Morgantown, W.VA, March 18-20, 1993

Visiting Professor, Emory University School of Medicine, Atlanta, GA. April 4-5, 1993

"Interaction of physical forces and vasoactive agents in regulation of mesangial and proximal tubule growth" Workshop on Vasoactive Molecules as Regulators of Cell Growth, Montpellier, France, May 17-18, 1993

"Mesangial matrix and remodeling in progressive injury" and "How might glomerular pressure injure the glomerulus?" International Society of Nephrology Satellite Symposium on Progression of Renal Disease, Tiberias, Israel, June 20-22, 1993

Visiting Professor, University of Minnesota Hospitals, Dec. 20-21, 1993

Visiting Professor, University of Toronto, Feb. 3-4, 1994

Visiting Professor, Case Western Reserve University, Sept. 7-8, 1994

Visiting Professor, Merck Frost Canada, Montreal, Sept. 13-14, 1994

Visiting Professor, Emory University, March 27-29, 1995

Invited speaker: 1995 FASEB Summer Research Conference-Renal hemodynamics: Vascular Biology of the Renal Circulation Saxtons River, Vermont June 17-22

"Effects of mechanical forces on a local mesangial renin/angiotensin system"

Invited speaker: 1995 International Society of Nephrology Madrid, July 2-9
"Effects of mechanical forces on extracellular matrix production in glomerular mesangial cells"

Invited speaker: 1995 American Society of Nephrology San Diego, CA Nov 5-8 Basic Science Symposium on the Renin-Angiotensin System. "Regulatory mechanisms of the AT₁ receptor"

Visiting Professor, Tulane University, December 14-15, 1995

Visiting Professor, University of Texas at San Antonio, May 14-15, 1996

Co-chairman, Basic Science Symposium: "Growth factors and MAP kinase pathways"
American Society of Nephrology, November 1996

Keynote speaker, Japanese Society of Nephrology, Eastern Section, Yokohama, November, 1996

Visiting Professor, University of California, San Diego, November 30-December 1, 1996

Visiting Professor, Boston University, March 3-4, 1997

Visiting Scientist, Biogen Corp. Cambridge, MA, April 28-29, 1997

Visiting Scientist, Scios Corp., Mt. View, CA, August, 11-12, 1997

Invited Speaker: First International Workshop on COX-2: Sept 18-20, 1997, New Orleans

Invited Speaker: Symposium on Renal Hemodynamics, Bavaria, Germany Sept 24-27, 1997

Invited Speaker, Basic Science Symposium, American Society of Nephrology, November 5, 1997: "Intracellular processing of angiotensin II and its receptor"

Visiting Professor, Duke University, April 23-24, 1998

Invited Speaker, Second International Workshop on COX-2: Maui, Hawaii July 28-31, 1998

Invited Speaker, Physiologic Roles of COX-2: New York, NY, September 5-7, 1998

Invited Speaker, Consortium of Southern Hypertension Councils, Atlanta Georgia, October 1, 1998

Invited Speaker, William Harvey Conference on COX-2: Cannes, France, October 14-16, 1998

Invited Speaker, Minilecture: The regulation and potential role of HB-EGF

in renal failure. American Society of Nephrology, October 25, 1998

Invited Speaker, Winter Eicosanoid Meeting, Baltimore, MD, March 8, 1999

Invited Speaker: "Regulation of expression and function of type I angiotensin receptors in polarized renal epithelia", in Symposium on Asymmetry of Receptor Signaling in Epithelial Cells, Experimental Biology, Washington, D.C. April 18, 1999

Invited Speaker. "Regulation of angiotensin II receptors in proximal tubule." International Congress of Nephrology, Buenos Aires, Argentina. May 6, 1999

Invited Speaker. "Interactions of renin-angiotensin system and neuronal nitric oxide in regulation of macula densa cyclooxygenase-2." Scandanavian Physiological Society, Uppsala, Sweden, June 4-7, 1999.

Invited Speaker. Third International Workshop on Cyclooxygenase-2. Kona, Hawaii, August 31-September 2, 1999.

Invited Speaker. German Society of Nephrology Freiburg, Germany, September 18-21, 1999

Invited Speaker, William Harvey Conference on COX-2: Lisbon, Portugal, October 18-20, 1999

Invited Speaker, "Physiologic and pathophysiologic roles of COX-2 in the kidney", Clinical Science Symposium. American Society of Nephrology, Miami, November 6, 1999

Invited Speaker, "COX-2 in the kidney", Southern Society of Clinical Investigation, New Orleans, February 17, 2000

Invited Speaker, Winter Eicosanoid Meeting, Baltimore, MD, March 6, 2000

Invited Speaker, International Pfizer colloquium on COX-2, Berne, Switzerland, April 6, 2000

Invited Speaker, First International Meeting on COX-2 and Renal Function, Regensburg, Germany, May 27-29, 2000

Co-organizer, American Society of Nephrology Basic Science Conference, "Novel approaches to progressive renal disease", Toronto, November, 2000

Invited Speaker, Southern Salt and Water Club, Boca Rotan, FL November 17, 2000

Invited Speaker, Consortium of Southern Hypertension Councils, Savannah, GA, December 9, 2000

Visiting Professor, Eastern Virginia Medical School, February 4-5, 2001

Visiting Professor, University of Virginia Medical School, February 20-21, 2001

Invited Speaker, Keystone Symposium on Eicosanoid Lipid Mediators, Snowbird, UT, April 7-12, 2001

Invited Speaker, European Society of Hypertension, Milan, June 14, 2001

Invited Speaker, 2001 FASEB Summer Research Conference Saxton River, Vermont
June 18, 2001

Visiting Professor, Indiana University, September 5-6, 2001

Invited Speaker, American Association of Cardiology, Anaheim, CA, November 9,
2001

Visiting Professor, University of Colorado, November 28-30, 2001

Visiting Professor, Albert Einstein School of Medicine, January 3-4, 2002

Visiting Professor, Boston University School of Medicine, February 7-8, 2002

Visiting Scientist, Boehringer Ingelheim, February 27, 2002

Invited Symposium Speaker, FASEB, New Orleans, April 23, 2002

Invited Speaker, American Society of Hypertension, New York, May 18, 2002

Invited Speaker European Society of Hypertension, Prague June 23, 2002

Faculty, American Heart Association Hypertension Summer School, July 18-23, 2002

Invited Speaker, Japanese Renal Development Society, Osaka, Japan, August 29, 2002

Invited Speaker, AHA High Blood Pressure Council, Orlando, September 25, 2002

Invited Speaker, American Society of Nephrology, Basic Science Symposium,
November, 2002

Visiting Scientist, Roche Pharmaceuticals, Palo Alto, January 17, 2003

Visiting Professor, University of Texas at Houston, April 6, 2003

Visiting Professor, Baylor University, April 7, 2003

Invited Speaker, American Society of Hypertension, May 15, 2003

Visiting Professor, University of Florida, Gainesville June 5-6, 2003

Invited Speaker, "Functional Genomics of the Juxtaglomerular Apparatus", Odense,
Denmark, October 15-17, 2003

Visiting Professor, Duke University, October 30-31, 2003

Invited Speaker, 16th Berlin Dialyse-Seminar, December 5-6, 2003

Visiting Professor, University of Michigan, April 6-7, 2004

Organizer, Symposium on claudins in renal epithelia, American Physiological Society, Washington, D.C. April 21, 2004

Visiting Professor, Case Western Reserve April 27-28, 2004

Invited Speaker, FASEB Conference on Renal Hemodynamics, Calloway Gardens June 27-30, 2004

Invited Speaker, High Blood Pressure Council, Chicago, October 9, 2004

Visiting Professor, Emory University, November 16, 2004

Visiting Professor, Brown University, February 3-4, 2005

Invited Member, Glaxo SKF Pain Advisory Board, Philadelphia February 23-23, 2005

Visiting Professor, Brigham and Womens' Hospital, April 5-6, 2005

Visiting Professor, Peking University, Department of Physiology May 6-11, 2005

Visiting Professor, University of Washington, June 2-3, 2005

Invited Speaker, COX-2 Summit, Zurich, Switzerland, September 7-8, 2005

Visiting Professor, University of Pittsburgh October 11-12, 2005

Visiting Professor, University of Texas Health Sciences, San Antonio January 24-25, 2006

Invited Speaker, Bayer Symposium on Prostaglandins Paris February 8-10, 2006

Invited Speaker, Conference on Cyclooxygenase, ASPET San Francisco April 4, 2006

Visiting Professor, Albert Einstein Medical School, April 27-28, 2006

Invited Speaker, World Congress of Cardiology, Barcelona, September 4-7, 2006

Visiting Professor, Duke University, November 2-3, 2006

Visiting Professor, University of Chicago, March 20-21, 2007

Invited Speaker, Bayer consensus meeting, Toronto March 29-31, 2007

Invited Speaker, Wyeth Laboratories, May 25, 2007

Invited Speaker, FASEB Summer Conference, Saxons River Vermont, July 8, 2007

Visiting Professor, ISN Comgen and Fudan University, Shanghai September 6-10, 2007

Visiting Professor, Georgetown University, November 20-21, 2007

Visiting Professor, University of North Carolina, November 28-29, 2008

Visiting Professor, University of Kansas March 2-3, 2008

Invited Speaker, Peking University Diabetes Forum, Beijing May 10-11, 2008

Visiting Faculty Regensburg-Erlangen Summer Program, Nuremberg, Germany June 25-27, 2008

Visiting Speaker, Novartis Diabetic Nephropathy Workshop December 15, 2008

Visiting Professor, Fudan University, Shanghai June 3-8, 2009

Visiting Professor, Emory University, January 5-6, 2010

Visiting Professor, University of Florida, March 3-4, 2010

Invited Speaker, FASEB Summer Conference, Saxons River Vermont, June 25, 2010

Plenary Speaker, Japanese Pediatric Nephrology Meeting, July 1-3, 2010

Christopher Mendes Lecturer, UCSD, August 17-18, 2010

Visiting Professor, Mt Sinai Medical School March 24-25, 2011

Invited Speaker and Symposium Organizer, Winter Eicosanoid Meeting, Baltimore, MD, March 14-16, 2011

Judge, Amgen Young Investigator National Competition, Las Vegas April 26, 2011

American Society of Hypertension “Non-steroidal anti-inflammatory drugs” May 23, 2011

Invited Speaker, Comgen Meeting, Changsha, China June 30-July 2, 2011.

Visiting Professor, University of Pittsburgh September 7-8, 2011

Visiting Professor, University of Alabama (Polycystic Kidney Center) February 28, 2012

Visiting Professor, University of Kansas March 22-23, 2012

Speaker, ASN Board Review Course, San Francisco, August 27, 2012

Visiting Professor, Medical University of South Carolina January 22, 2013

Visiting Professor, Drexel University February 19, 2013

Visiting Professor, University of Virginia February 26-27, 2013

Mid-Atlantic Young Investigators' Forum, Plenary Speaker February 27-28, 2013

Visiting Professor, Yale University March 27-28, 2013

Consultant, Amgen April 10, 2013

Japanese Society of Nephrology, Tokyo May 10-12, 2013

Speaker, American Society of Hypertension, San Francisco May 15-18, 2013

CURRENT GRANTS

Source: NIH-NIDDK

Agency #: 1 P30 DK079341 Title: George O'Brien Center for the Study of Renal Disease
Director 1995-

Dates Entire Project: 8/1/87-7/31/13

Source: VA Merit Award 00507969

Title: Regulation of Renal Epithelial Cell Growth

Dates Entire Project: 4/1/87-3/31/13

Annual Direct Costs: \$150,000

Source: NIH NIDDK

Agency #: 5 PO1 DK38226 Program Project Grant
Project #4

Title: The Role of Eicosanoids in Renal Function

Dates Entire Project: 7/1/88-6/30/14

Annual Direct Costs: \$105,000

Source: NIH-NIDDK

Agency # 1R01 DK51265

Dates: Entire Project 1/1/97-12/31/14

The Role of HB-EGF in Renal Injury

Annual Direct Costs \$220,000

Source: NIH-NIDDK

Principal Investigator R.C. Harris

Agency: NIH-NIDDK Type: 5R01 DK62794

Dates: Entire Project 12/1/02-6/30/13

Interactions of intrarenal dopaminergic system with cyclooxygenase-2

Annual Direct Costs \$235,000

Source: NIH-NIDDK

2T32DK07569

Renal Biology and Disease Training Grant

Dates of entire project: 4/1/99-3/31/15

LIST OF TRAINEES

Years	Trainee	Position at Vanderbilt	Current Position
1989-1992	Kevin Burns, M.D.	MRC scholarship	Professor and Chief of Nephrology University of Ottawa
1988-92	Toshio Homma, PhD	Postdoctoral Fellow	Assistant Professor Tokyo University
1990-91	Samir Shabshab, MD	Postdoctoral Fellow	Private practice
1990-92	Yoichi Akai, MD	Postdoctoral Fellow	Assistant Professor Jichi Medical School
1992-94	Takashi Yasuda, MD/PhD	Postdoctoral Fellow	Associate Professor St. Marianna Medical School Kawasaki, Japan
1993-96	Masahiro Sakai MD/PhD	AHA fellowship	Assistant Professor Nagasaki Medical School
1993-96	Bryan Becker, MD	NIDDK 2T32DK07569 Renal Training Grant	Professor and Associate Dean University of Illinois, Chicago
1993-96	Satoshi Kondo, MD/PhD	P50 DK39261	Assistant Professor St. Marianna Medical School Kawasaki, Japan
1995-96	Tsukasa Takemura MD/PhD	funds from Kinki Medical School	Professor and Chairman of Pediatrics Kinki Medical School Osaka, Japan
1996-2000	Jian-Kang Chen, MD/MS	PO1 DK38226	Associate Professor University of Georgia
1996-99	Connie Wang, M.D.	P50 DK39261	Assistant Professor University of Kansas
1996-99	Toshiaka Tsukada MD	RO1 DK51265	Instructor Nagasaki Medical School
1999-2001	Xiacong Yu	RO1 DK5265	Assistant Prof. Boston University
1997- 2002	Shivakumar Bangalore, PhD.	RO1 DK51265	Alabama forensics
1998-2002	Zou-Fei Wang, M.D./Ph.D.	VA Merit Review	Research Assistant Professor
1999-2000	Shouichi Fujimoto, M.D.	funds from Miyazki Medical School	Professor Miyazki Medical School
2000-2002	Amar Singh, PhD.	RO1 DK51265	Assistant Professor

2000-02	Pedro Lopez-Sanchez, Ph.D.	funds from Mexican government	Centro de Investigacion y Estudios Avanzados del IPN, Mexico
2001- 04	Ingrid Chang, M.D.	NIDDK 2T32DK07569 Renal Training Grant	private practice, Denver, Colorado
2003-06	Fenghua Zeng	RO1 DK51265	Research Assistant Professor
2003- 07	Jia Xe	VA Merit Award	Assistant Professor, UC Davis
2003-2007	Bing Yao	DK62794	Research Assistant Professor
2004	Jianchun Chen	P50 DK39261	Research Assistant Professor
2004-07	Jim Smith	NKF	FDA
2005-07	John Zhao	training grant	private practice
2005-07	Keisuke Sugimoto	RO1DK51265	Assistant Professor, Kinki Medical School Osaka, Japan
2007-2011	Reena Rao	Gottschalck Award	Assistant Professor, University of Kansas
2008-2010	Hanmin Wang	local funds	Associate Professor, Fourth Military Medical Univ. Xi'an, China
2009-2011	Shilin Yang	RO1 DK62794	Research Assistant Professor
2010-2012	Tomoki Miyazawa	RO1 DK51265	Assistant Professor, Kinki Medical School, Osaka, Japan
2010-2012	Seong Kwon Ma	funds from Korean government	Associate Professor, Chonnam University Gwangju, Korea

PUBLICATIONS

1. Mills, J., Zeringue, M., Harris, R.C., Wilhelmi, E. and Rudman, D. Assay of pig growth hormone preparation for metabolic activities in the rat and in man. *J. Clin. Endocrinol. Metab.* 42:1127-1133, 1976.
2. Rudman, D., Kutner, M., Fleming, A., Harris, R C., Kennedy, E., Bethel, R. and Priest, J. Effect of 10-day courses of human growth hormone on height of short children *J. Clin. Endocrinol. Metab.* 46:28-36, 1978.
3. Harris, R.C., Seifter, J.L. and Brenner, B.M. Adaptation of Na⁺-H⁺ exchange in renal microvillus membrane vesicles: The role of dietary protein and uninephrectomy. *J. Clin. Invest.* 74:1979-87, 1984.
4. Harris, R.C., Brenner, B.M. and Seifter, J.L. Sodium-hydrogen exchange and glucose transport in renal microvillus vesicles from rats with diabetes mellitus. *J. Clin. Invest.* 77:724-733, 1986.
5. Harris, R.C., Seifter, J.L. and Lechene, C. Coupling of Na/H exchange and Na/K pump activity in cultured rat proximal tubule cells. *Am. J. Physiol. (Cell Physiol.)* 251:C815-24, 1986.
6. Harris, R.C., Hoover, R.L., Jacobson, H.R. and Badr, K.F. Evidence for glomerular actions of epidermal growth factor in the rat. *J. Clin Invest.* 82:1028-1039, 1988.

7. Badr, K.F., DeBoer, D.K., Takahashi, K., Harris, R.C., Fogo, A. and Jacobson, H. Glomerular responses to platelet activating factor in the rat: Role of Thromboxane A₂. *Am. J. Physiol. (Renal Fluid Electrolytes)* 256:F35-F43, 1989.
8. Badr, K.F., Murray, J.J., Breyer, M.D., Takahashi, K., Inagami, T. and Harris, R.C. Mesangial cell, glomerular and renal vascular responses to endothelin in the rat kidney: Elucidation of signal transduction pathways. *J. Clin. Invest.* 83:336-342, 1989.
9. Harris, R.C., and Daniel, T.O. Epidermal growth factor binding, stimulation of phosphorylation and inhibition of gluconeogenesis in rat proximal tubule. *J. Cell Physiol.* 139:383-391, 1989.
10. Harris, R.C. Response of rat inner medullary collecting duct to epidermal growth factor. *Am. J. Physiol.* 256 (Renal Fluid and Electrol. 25) F1117-F1124, 1989.
11. Badr, K.F., Mong, S., Hoover, R.L., Schwartzberg, M., Ebert, J., Jacobson, H.R. and Harris, R.C. Characterization of specific binding and signal transduction mechanisms for Leukotriene D₄ in cultured rat mesangial cells. *Am. J. Physiol.* 257 (Renal Fluid Electrolyte Physiol. 26) F280-F287, 1989.
12. Homma, T., Hoover, R.L. and Harris, R.C. Loop-diuretic sensitive potassium flux pathways in cultured rat mesangial cells: Modulation by volume changes and vasoactive agents. *Am. J. Physiol. (Cell Physiol.)* 258:C862-870, 1990.
13. Safirstein, R., Price, P., and Harris, R.C. Changes in gene expression after temporary renal ischemia. *Kidney Int.* 37:1515-1521, 1990.
14. Harris, R.C. and K.F. Badr. Recovery of prostaglandin synthesis in rat glomerular mesangial cells after aspirin inhibition: induction of cyclooxygenase activity by serum and epidermal growth factor. *Prostaglandins.* 39:213-222, 1990.
15. Harris, R.C., Takahashi, K., Capdevila, J. and Badr, K. Mediation of renal vascular effects of epidermal growth factor by cyclooxygenase and cytochrome P450 arachidonic acid metabolites. *FASEB J.* 4:1654-1660, 1990.
16. Kon, V., Harris, R.C. and Ichikawa, I. A regulatory role for large vessels in organ circulation: Endothelial cells of the main renal artery modulate intrarenal hemodynamics in the rat. *J. Clin. Invest.* 85:1728-1733, 1990.
17. Homma, T., Burns, K. and Harris R.C. Agonist stimulation of Na/K/Cl cotransport in cultured rat mesangial cells: Evidence for protein kinase C-dependent and calcium/calmodulin-dependent pathways. *J. Biol. Chem.* 265:17613-17620, 1990.
18. Harris, R.C., Homma, T., Jacobson, H.R. and Capdevila, J. Epoxyeicosatrienoic acids are mitogens for rat mesangial cells: Signal transduction pathways. *J. Cell Physiol.* 144:429-437, 1990.
19. Awazu, M., Kon, V., Harris, R.C., Imada, T., Inagami, T. and Ichikawa, I. Sympathetic nerve modulation of glomerular ANP receptors and hemodynamic effects. *Am. J. Physiol.* 261:F29-F35, 1991.

20. Homma, T. and Harris, R.C. Time-dependent biphasic regulation of Na⁺/K⁺/Cl⁻ cotransport in rat glomerular mesangial cells. *J. Biol. Chem.* 266:13553-13559, 1991.
21. Burns, K.D., Homma, T. and Harris, R.C. Regulation of Na⁺/H⁺ exchange by ATP depletion and calmodulin antagonism in renal epithelial cells (LLC-PK1) *Am. J. Physiol.* 261:F607-F616, 1991.
22. Burns, K.D., Homma, T., Breyer, M.D. and Harris, R.C. Cytosolic acidification stimulates a calcium influx that activates Na⁺/H⁺ exchange in LLC-PK-1. *Am. J. Physiol.* 261:F617-F625, 1991.
23. Harris, R.C., Haralson, M. and Badr, K.F. Effect of continuous mechanical stretch/relaxation upon rat glomerular mesangial cells. *Lab. Invest.* 66:548-554, 1992
24. Harris, R.C. S6 kinase activity in proximal tubule cells. Evidence for activation by epidermal growth factor and angiotensin II in vitro and by contralateral nephrectomy in vivo. *Am. J. Physiol.* 263:F127-F134, 1992
25. McKanna, J.A., Chumcharunee, A., Munger, K.A., Breyer, J.A., Cohen, S. and Harris, R.C. Localization of p35 (Annexin I, Lipocortin I) in normal adult rat kidney and during recovery from ischemia. *J. Cell Physiol.* 153:467-475, 1992.
26. Homma, T. Akai, Y. Burns, K.D. and Harris, R.C. Activation of S6 kinase activity by repeated cycles of stretching and relaxation in cultured rat glomerular mesangial cells: Evidence for involvement of protein kinase C. *J. Biol.Chem.* 267:23129-23135, 1992.
27. Burns, K.D., Inagami, T. and Harris, R.C. Cloning of a rabbit kidney cortex AT₁ angiotensin II receptor that is present in proximal tubule epithelium *Am. J. Physiol.* 264:F645-F654, 1993.
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