

BIOGRAPHICAL SKETCH

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NAME T. Kendall Harden	POSITION TITLE		
eRA COMMONS USER NAME KENDALL HARDEN	Kenan Professor		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Delta State University	B.S.	1970	Chemistry
University of Mississippi	Ph.D.	1974	Pharmacology
University of Colorado	Post-doc	1974-77	Pharmacology

A. Positions and Honors**Positions and Employment**

1977 - 1982 Assistant Professor, Dept. of Pharmacology, Univ. North Carolina School of Medicine
 1982 - 1986 Associate Professor, Dept. of Pharmacology, UNC School of Medicine
 1986 - Professor, Dept of Pharmacology, UNC School of Medicine
 1/85 - 8/86 Acting Chairman, Dept of Pharmacology, UNC School of Medicine

Other Experience and Professional Memberships

1981 - Editorial Boards: J. Biol. Chem., Nature Signaling Gateway, Mol. Pharmacol., JPET
 1987 Visiting Scientist, with P. Downes and T. Rink, Smith Kline French, Ltd., Welwyn, England
 1988 - 1991 Member, Pharmacology Study Section, NIH
 1990 - 1994 Editor, Molecular Pharmacology
 1993 - 1996 Member, Established Investigator Review Panel, American Heart Association
 1994 - 1999 IUPHAR Committee on Receptor Nomenclature; Chair IUPHAR Committee on P2Y receptors
 1996 - 2001 Chair, Board of Publications Trustees, ASPET
 1996 - 2000 Member, Biomedical Research and Research Training Review Subcommittee, NIH, NIGMS
 1997 - 2006 Burroughs Wellcome Fund, Basic Pharmacological Sciences Award Advisory Committee
 1999 Visiting Professor, with Dr. A. G. Gilman, Univ. of Texas Southwestern Medical School

Honors

1975 - 1977 USPHS Postdoctoral Fellowship, University of Colorado
 1981 - 1986 Established Investigator, American Heart Association
 1993 - 2003 Merit Award, NIGMS
 2002 Most Highly Cited (top 50 Scientists) in Pharmacology, 1981 to 1999 (ISI)
 2003 Most-cited Scientist (top 10) in Pharmacology and Toxicology, (1993-2003)
 2003 - Kenan Professor, University of North Carolina

B. Publications: (Selected from approximately 300 total)

Harden TK, Cotton, C.U., Waldo, G.L., Lutton, J.K. and Perkins, J.P. Catecholamine-induced alteration in the sedimentation behavior of membrane bound β -adrenergic receptors. *Science* 210:441-443, 1980.
 Harden TK, Stephens L, Hawkins PT, and Downes CP. Turkey erythrocyte membranes as a model for regulation of phospholipase C by guanine nucleotides. *J.Biol.Chem.* 262:9057-9061, 1987.
 Boyer JL, Downes CP, and Harden TK. Kinetics of activation of phospholipase C by P₂-purinergic receptor agonists and guanine nucleotides. *J.Biol.Chem.* 264:884-890, 1989.
 Morris AJ, Waldo GL, Downes CP, and Harden TK. A receptor and G-protein regulated polyphosphoinositide-specific phospholipase C from turkey erythrocytes. 2. P_{2Y}-purinergic receptor and G-protein-mediated regulation of the purified enzyme. *J.Biol.Chem.* 265:13508-13514, 1990.

- Waldo GL, Boyer JL, Morris AJ, and Harden TK. Purification of an AlF_4^- - and G-protein- $\beta\gamma$ -subunit-regulated phospholipase C-activating protein. *J.Biol.Chem.* 266:14217-14225, 1991.
- Boyer JL, Waldo GL, and Harden TK. $\beta\gamma$ -subunit activation of G-protein-regulated phospholipase C. *J.Biol. Chem.* 267:25451-25456, 1992.
- Lazarowski ER, Homolya L, Boucher RC, and Harden TK. Direct demonstration of mechanically induced release of cellular UTP and its implication for uridine nucleotide receptor activation. *J.Biol.Chem.* 272:24348-24354, 1997.
- Lazarowski ER, Boucher RC, and Harden TK. Constitutive release of ATP and evidence for major contribution of ecto-nucleotide pyrophosphatase and nucleoside diphosphokinase to extracellular nucleotide concentrations. *J.Biol. Chem.* 275: 31061-31068, 2000.
- Brinson AE and Harden TK. Differential regulation of the uridine activated P2Y₄- and P2Y₆-receptors: S333 and S334 in the carboxy terminus are involved in agonist-dependent phosphorylation desensitization and internalization of the P2Y₄-R. *J. Biol. Chem.* 276: 11939-11948, 2001.
- Wing MR, Houston D, Kelley GG, Der CJ, Siderovski DP, and Harden TK. Activation of phospholipase C- ϵ by G protein $\beta\gamma$ -subunits. *J. Biol. Chem.* 276:49267-49274, 2001
- Singer AU, Waldo GL, Harden TK, and Sondek J. A unique fold of phospholipase C- β mediates dimerization with G α_q . *Nature Struct. Biol.* 9:32-26, 2002
- Waldo GL, Corbitt J, Boyer JL, Ravi G, Kim HS, Ji X, Lacy J, Jacobson KA, and Harden TK. Quantitation of the P2Y₁ receptor with a high affinity radiolabeled antagonist. *Mol. Pharmacol.* 62:1249-1257, 2002.
- Hooks SB, Waldo GL, Bodor ET, Krumins AM, and Harden TK. RGS6, RGS7, RGS9, and RGS11 stimulate GTPase activity of Gi G-proteins with differential selectivity and maximal activity. *J.Biol.Chem.* 278: 10087-10093, 2003.
- Snyder JT, Singer AU, Wing MR, Harden TK, and Sondek J. The pleckstrin homology domain of phospholipase C- β 2 as an effector site for Rac. *J. Biol. Chem.* 278: 21099-21104, 2003.
- Wing MR, Snyder JT, Sondek J, and Harden TK. Direct activation of phospholipase C- ϵ by Rho. *J. Biol. Chem.* 278:41253-41258, 2003.
- Bodor ET, Waldo GL, Hooks SB, Corbitt J, Boyer JL and Harden TK. Purification and functional reconstitution of the human P2Y₁₂ receptor. *Mol. Pharmacol.* 64:1210-1216, 2003.
- Lazarowski ER, Shea DA, Boucher RC, and Harden TK. Release of cellular UDP-glucose as a potential extracellular signaling molecule. *Mol Pharmacol.* 63:1190-1197, 2003.
- Kim HS, Ohno M, Xu B, Kim HO, Maddileti S, Marquez VE, Harden TK, and Jacobson KA. 2- Substitution of Adenine Nucleotide Analogues Containing a Bicyclo[3.1.0]hexane Ring System Locked in a Northern Conformation: Enhanced Potency as P2Y₁ Receptor Antagonists. *J Med Chem.* 46:4974-4987, 2003.
- Lazarowski ER, Boucher RC, and Harden TK. Mechanisms of release of nucleotides and integration of their action as P2X- and P2Y-receptor activating molecules. *Mol Pharmacol.* 64:785-795, 2003.
- Mateo J, Kreda S, Henry CE, Harden TK, and Boyer JL. Requirement of Cys399 for processing of the human ecto-ATPase (NTPDase2) and its implications for determination of the activities of splice variants of the enzyme. *J Biol Chem.* 279: 39960-39968, 2003.
- Waldo GL and Harden TK. Agonist binding- and G α_q -stimulating activities of the purified human P2Y₁ receptor. *Mol. Pharmacol.* 65:426-436, 2004.
- Herold CL, Qi AD, Harden TK, and Nicholas RA. Agonist versus antagonist action of ATP at the P2Y₄ receptor is determined by the second extracellular loop. *J. Biol. Chem.*, 279:11456-11464, 2004.
- Wu YL, Hooks S, Harden TK, Dohlman HG. Dominant-negative inhibition of pheromone receptor signaling by a single point mutation in the G protein alpha. *J Biol Chem*, 279:35287-35297, 2004.
- Seifert JP, Wing MR, Snyder JT, Sondek J, and Harden TK. RhoA activates purified phospholipase C- ϵ by a guanine nucleotide-dependent mechanism. *J. Biol. Chem.* 279:47992-47997, 2004.
- Chhatriwala M, Ravi RG, Patel RI, Boyer JL, Jacobson KA, and Harden TK. Induction of novel agonist selectivity for the ADP-activated P2Y₁ receptor versus the ADP-activated P2Y₁₂ and P2Y₁₃ receptors by conformational constraint of an ADP analog. *J Pharmacol Exp Ther*, 311:1038-1043, 2004.
- Alvarado-Castillo C, Harden TK, and Boyer JL. Regulation of P2Y₁ receptor-mediated signaling by the ectonucleoside triphosphate diphosphohydrolase isozymes NTPDase1 and NTPDase2. *Mol Pharmacol*, 67:114-122, 2004.
- Wolff SC, Qi AD, Harden TK, and Nicholas RA. Polarized expression of human P2Y receptors in epithelial cells from kidney, lung, and colon. *Am J Physiol Cell Physiol*, 288: C624-C632, 2005.
- Zhou Y, Wing MR, Sondek J, and Harden TK. Molecular cloning and characterization of phospholipase C- η 2.

- Biochem. J. 391:667-676, 2005.
- Costanzi S, Joshi BV, Maddileti S, Mamedova L, Gonzalez-Moa MJ, Marquez VE, Harden TK, and Jacobson KA. Human P2Y₆ receptor: molecular modeling leads to the rational design of a novel agonist based on a unique conformational preference. *J Med Chem.* 48:8108-8111, 2005.
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- Bourdon DM, Mahanty SK, Jacobson KA, Boyer JL, and Harden, TK. (N)-methanocarba-2MeSADP is a subtype-specific agonist that induces rapid desensitization of the P2Y₁ receptor of human platelets. *J Thromb Haemost.* 4: 861-868, 2006.
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