

CURRICULUM VITAE

Curt Sigmund PhD

Chair, Professor
Department of Physiology

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EDUCATION:

1978 - 1982 B.A. (Biology), State University of New York at Buffalo, Buffalo, NY
1982 - 1984 M.A. (Biology), State University of New York at Buffalo, Buffalo, NY
1982 - 1987 Ph.D. (Molecular & Cellular Biology), State University of New York at Buffalo, Buffalo, NY

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

1987 - 1991 Postdoctoral Fellow, Department of Molecular and Cellular Biology, Roswell Park Cancer Institute, Buffalo, NY

FACULTY APPOINTMENTS:

1991 - 1997 Assistant Professor, Medicine, Cardiovascular Diseases, University of Iowa, Iowa City, IA
1997 - 2001 Associate Professor, Medicine, Cardiovascular Diseases, University of Iowa, Iowa City, IA
2001 - 2010 Professor, Medicine, Cardiovascular Diseases, University of Iowa, Iowa City, IA
2008 - 2018 Roy J. Carver Chair in Hypertension Research, Pharmacology, University of Iowa, Iowa City, IA
2010 - 2018 Professor, Pharmacology, University of Iowa, Iowa City, IA
2019 Professor and James J. Smith & Catherine Welsch Smith Chair of Physiology, Physiology, Medical College of Wisconsin, Milwaukee, WI

ADMINISTRATIVE APPOINTMENTS:

1991 - 2010 Director, Transgenic Animal Facility, University of Iowa, Iowa City, IA
1998 - 2002 Director, Molecular Biology Interdisciplinary Graduate Program, University of Iowa, Iowa City, IA
2000 - 2018 Director, UIHC Center for Hypertension Research, University of Iowa, Iowa City, IA
2000 - 2018 Director, Roy J. Carver Research Program of Excellence, Functional Genomics of Cardiovascular Disease, University of Iowa, Iowa City, IA
2010 - 2018 Chair and Department Executive Office, Pharmacology, University of Iowa, Iowa City, IA
2019 Chair, Physiology, Medical College of Wisconsin, Milwaukee, WI
2019 Associate Director, Cardiovascular Center, Medical College of Wisconsin, Milwaukee, WI

AWARDS AND HONORS:

1978 - 1982 New York State Regents Scholarship , State of New York
1978 - 1982 Honors Research Program, SUNY at Buffalo
1982 National Science Foundation Fellowship Honors List, SUNY Buffalo
1982 - 1986 University President's Fellowship, SUNY Buffalo
1988 - 1991 Merck, Sharp & Dohme Fellowship Award, American Heart Association
1993 Fellow of the American Heart Association , American Heart Association
1996 Henry Christian Award for Excellence in Clinical Research, American Federation for Medical Research
1997 Young Scholars Award, American Society of Hypertension
2000 Henry Pickering Bowditch Award , American Physiological Society
2007 Arthur C. Corcoran Memorial Lecture Award, AHA, Council on Hypertension

2009 Distinguished Alumni Award , State University of New York at Buffalo
2009 Excellence Award in Hypertension Research (formerly the Novartis Award) , AHA, Council on Hypertension
2011 Ernest H. Starling Distinguished Lecturer, American Physiological Society
2013 Regents Award for Faculty Excellence , Board of Regents, State of Iowa
2015 Inaugural Vancouver Lectureship , Hypertension Canada
2016 Distinguished Lecturer in Physiological Genomics, American Physiological Society
2016 Leadership in Research Award, University of Iowa
2017 Carl J. Wiggers Award, American Physiological Society

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorship

1994 - 2000 Associate Editor, American Journal of Physiology: Endocrinology and Metabolism
1995 - 1996 Guest Editor, Hypertension
2000 - 2007 Associate Editor, Physiological Genomics
2002 - 2007 Associate Editor, Hypertension
2007 - 2013 Editor-in-Chief, American Journal of Physiology: Regulatory, Integrated and Comparative Physiology

Editorial Board

1993 - 2019 Hypertension
1999 - 2005 American Journal of Physiology: Heart and Circulatory Physiology
2007 - 2012 Circulation Research

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2002 - 2007 Chair, Joint Program Committee, American Physiological Society
2006 - 2007 Chair, Task Force on Meetings, American Physiological Society
2015 - 2019 Chair, Publications Committee, American Physiological Society

INTERNATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2005 - 2006 Chair, Genomics Commission, International Union of Physiological Sciences (IUPS)
2016 Chair, Gordon Research Conference on Angiotensin, Gordon Research Conferences
2018 - 2020 Chair elect, Council on Hypertension, American Heart Association, Council on Hypertension

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

1. Sigmund CD, Morgan EA. Erythromycin resistance due to a mutation in a ribosomal RNA operon of *Escherichia coli*. *Proc Natl Acad Sci U S A*. 1982 Sep;79(18):5602-6. PMID: PMC346952
2. Mark LG, Sigmund CD, Morgan EA. Spectinomycin resistance due to a mutation in an rRNA operon of *Escherichia coli*. *J Bacteriol*. 1983 Sep;155(3):989-94. PMID: PMC217790
3. Sigmund CD, Ettayebi M, Morgan EA. Antibiotic resistance mutations in 16S and 23S ribosomal RNA genes of *Escherichia coli*. *Nucleic Acids Res*. 1984 Jun 11;12(11):4653-63. PMID: PMC318865
4. Sigmund CD, Ettayebi M, Borden A, Morgan EA. Antibiotic resistance mutations in ribosomal RNA genes of *Escherichia coli*. *Methods Enzymol*. 1988;164:673-90.
5. Mullins JJ, Sigmund CD, Kane-Haas C, Wu CZ, Pacholec F, Zeng Q, Gross KW. Studies on the regulation of renin genes using transgenic mice. *Clin Exp Hypertens A*. 1988;10(6):1157-67.
6. Sigmund CD, Morgan EA. Effects of *Escherichia coli* Nus A protein on transcription termination in vitro are not increased or decreased by DNA sequences sufficient for antitermination in vivo. *Biochemistry*. 1988 Jul 26;27(15):5628-35.
7. Sigmund CD, Morgan EA. Nus A protein affects transcriptional pausing and termination in vitro by binding to different sites on the transcription complex. *Biochemistry*. 1988 Jul 26;27(15):5622-7.
8. Fabian JR, Field LJ, McGowan RA, Mullins JJ, Sigmund CD, Gross KW. Allele-specific expression of the murine Ren-1 genes. *J Biol Chem*. 1989 Oct 15;264(29):17589-94.
9. Mullins JJ, Sigmund CD, Kane-Haas C, Gross KW, McGowan RA. Expression of the DBA/2J Ren-2 gene in the adrenal gland of transgenic mice. *EMBO J*. 1989 Dec 20;8(13):4065-72. PMID: PMC401583
10. Jones CA, Sigmund CD, McGowan RA, Kane-Haas CM, Gross KW. Expression of murine renin genes during fetal development. *Mol Endocrinol*. 1990 Mar;4(3):375-83.

11. Sigmund CD, Jones CA, Fabian JR, Mullins JJ, Gross KW. Tissue and cell specific expression of a renin promoter-reporter gene construct in transgenic mice. *Biochem Biophys Res Commun.* 1990 Jul 16;170(1):344-50.
12. Sigmund CD, Jones CA, Mullins JJ, Kim U, Gross KW. Expression of murine renin genes in subcutaneous connective tissue. *Proc Natl Acad Sci U S A.* 1990 Oct;87(20):7993-7. PMID: PMC54878
13. Sigmund CD, Okuyama K, Ingelfinger J, Jones CA, Mullins JJ, Kane C, Kim U, Wu CZ, Kenny L, Rustum Y. Isolation and characterization of renin-expressing cell lines from transgenic mice containing a renin-promoter viral oncogene fusion construct. *J Biol Chem.* 1990 Nov 15;265(32):19916-22.
14. Sigmund CD, Gross KW. Differential expression of the murine and rat renin genes in peripheral subcutaneous tissue. *Biochem Biophys Res Commun.* 1990 Nov 30;173(1):218-23.
15. Sigmund CD, Jones CA, Jacob HJ, Ingelfinger J, Kim U, Gamble D, Dzau VJ, Gross KW. Pathophysiology of vascular smooth muscle in renin promoter-T-antigen transgenic mice. *Am J Physiol.* 1991 Feb;260(2 Pt 2):F249-57.
16. Jacob HJ, Sigmund CD, Shockley TR, Gross KW, Dzau VJ. Renin promoter SV40 T-antigen transgenic mouse. A model of primary renal vascular hyperplasia. *Hypertension.* 1991 Jun;17(6 Pt 2):1167-62.
17. Sigmund CD, Gross KW. Structure, expression, and regulation of the murine renin genes. *Hypertension.* 1991 Oct;18(4):446-57.
18. Lim SK, Sigmund CD, Gross KW, Maquat LE. Nonsense codons in human beta-globin mRNA result in the production of mRNA degradation products. *Mol Cell Biol.* 1992 Mar;12(3):1149-61. PMID: PMC369546
19. Sigmund CD, Jones CA, Kane CM, Wu C, Lang JA, Gross KW. Regulated tissue- and cell-specific expression of the human renin gene in transgenic mice. *Circ Res.* 1992 May;70(5):1070-9.
20. Sigmund CD, Fabian JR, Gross KW. Expression and regulation of the renin gene. *Trends Cardiovasc Med.* 1992;2(6):237-45.
21. Sigmund CD. Major approaches for generating and analyzing transgenic mice. An overview. *Hypertension.* 1993 Oct;22(4):599-607.
22. Sigmund CD. Expression of the human renin gene in transgenic mice throughout ontogeny. *Pediatr Nephrol.* 1993 Oct;7(5):639-45.
23. Lang JA, Sinclair NL, Burson JM, Sigmund CD. Transgenic animals as tools in hypertension research. *Proc Soc Exp Biol Med.* 1994 Feb;205(2):106-18.
24. Burson JM, Aguilera G, Gross KW, Sigmund CD. Differential expression of angiotensin receptor 1A and 1B in mouse. *Am J Physiol.* 1994 Aug;267(2 Pt 1):E260-7.
25. Held WA, O'Brien JG, Kerns K, Gallagher JF, Sigmund CD, Gross KW. Chromosome 8 alterations accompany tumorigenesis in renin-SV40 T antigen transgenic mice. *Cancer Res.* 1994 Dec 15;54(24):6496-9.
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33. Thompson MW, Smith SB, Sigmund CD. Regulation of human renin mRNA expression and protein release in transgenic mice. *Hypertension.* 1996 Aug;28(2):290-6.
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- large internal exon results in exon skipping in transgenic mice. *Nucleic Acids Res.* 1996 Oct 15;24(20):4023-8. PMID: PMC146210
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 57. Faraci FM, Sigmund CD. Vascular biology in genetically altered mice : smaller vessels, bigger insight. *Circ Res.* 1999 Dec 3-17;85(12):1214-25.
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- homologous recombination. *J Biol Chem*. 2000 Jan 14;275(2):1073-8.
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 60. Didion SP, Sigmund CD, Faraci FM. Impaired endothelial function in transgenic mice expressing both human renin and human angiotensinogen. *Stroke*. 2000 Mar;31(3):760-4; discussion 765.
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 63. Cvetkovic B, Sigmund CD. Understanding hypertension through genetic manipulation in mice. *Kidney Int*. 2000 Mar;57(3):863-74.
 64. Sigmund CD. Viewpoint: are studies in genetically altered mice out of control? *Arterioscler Thromb Vasc Biol*. 2000 Jun;20(6):1425-9.
 65. Davisson RL, Oliverio MI, Coffman TM, Sigmund CD. Divergent functions of angiotensin II receptor isoforms in the brain. *J Clin Invest*. 2000 Jul;106(1):103-6. PMID: PMC314366
 66. Lake-Bruse KD, Sigmund CD. Transgenic and knockout mice to study the renin-angiotensin system and other interacting vasoactive pathways. *Curr Hypertens Rep*. 2000 Apr;2(2):211-6.
 67. Sinn PL, Sigmund CD. Identification of three human renin mRNA isoforms from alternative tissue-specific transcriptional initiation. *Physiol Genomics*. 2000 Jun 29;3(1):25-31.
 68. Davisson RL, Ding Y, Stec DE, Catterall JF, Sigmund CD. Novel mechanism of hypertension revealed by cell-specific targeting of human angiotensinogen in transgenic mice. *Physiol Genomics*. 1999 Jul 15;1(1):3-9.
 69. Khan AH, Thurmond DC, Yang C, Ceresa BP, Sigmund CD, Pessin JE. Munc18c regulates insulin-stimulated glut4 translocation to the transverse tubules in skeletal muscle. *J Biol Chem*. 2001 Feb 09;276(6):4063-9. PMID: PMC5540311
 70. Shi Q, Gross KW, Sigmund CD. Retinoic acid-mediated activation of the mouse renin enhancer. *J Biol Chem*. 2001 Feb 02;276(5):3597-603.
 71. Ding Y, Stec DE, Sigmund CD. Genetic evidence that lethality in angiotensinogen-deficient mice is due to loss of systemic but not renal angiotensinogen. *J Biol Chem*. 2001 Mar 09;276(10):7431-6.
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 73. Ding Y, Sigmund CD. Androgen-dependent regulation of human angiotensinogen expression in KAP-hAGT transgenic mice. *Am J Physiol Renal Physiol*. 2001 Jan;280(1):F54-60.
 74. Keen HL, Sigmund CD. Paradoxical regulation of short promoter human renin transgene by angiotensin ii. *Hypertension*. 2001 Feb;37(2 Pt 2):403-7.
 75. Stec DE, Sigmund CD. Physiological insights from genetic manipulation of the renin-angiotensin system. *News Physiol Sci*. 2001 Apr;16:80-4.
 76. Dayal S, Bottiglieri T, Arning E, Maeda N, Malinow MR, Sigmund CD, Heistad DD, Faraci FM, Lentz SR. Endothelial dysfunction and elevation of S-adenosylhomocysteine in cystathionine beta-synthase-deficient mice. *Circ Res*. 2001 Jun 08;88(11):1203-9.
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- C57BL/6 mice. *Arterioscler Thromb Vasc Biol.* 2001 Nov;21(11):1809-15. PMID: PMC2768479
84. Myung PS, Derimanov GS, Jordan MS, Punt JA, Liu QH, Judd BA, Meyers EE, Sigmund CD, Freedman BD, Koretzky GA. Differential requirement for SLP-76 domains in T cell development and function. *Immunity.* 2001 Dec;15(6):1011-26.
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 92. Morimoto S, Cassell MD, Sigmund CD. Glia- and neuron-specific expression of the renin-angiotensin system in brain alters blood pressure, water intake, and salt preference. *J Biol Chem.* 2002 Sep 06;277(36):33235-41.
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 94. Didion SP, Ryan MJ, Baumbach GL, Sigmund CD, Faraci FM. Superoxide contributes to vascular dysfunction in mice that express human renin and angiotensinogen. *Am J Physiol Heart Circ Physiol.* 2002 Oct;283(4):H1569-76.
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 98. Baumbach GL, Sigmund CD, Bottiglieri T, Lentz SR. Structure of cerebral arterioles in cystathionine beta-synthase-deficient mice. *Circ Res.* 2002 Nov 15;91(10):931-7.
 99. Baumbach GL, Sigmund CD, Faraci FM. Cerebral arteriolar structure in mice overexpressing human renin and angiotensinogen. *Hypertension.* 2003 Jan;41(1):50-5.
 100. Tran ND, Liu X, Yan Z, Abbote D, Jiang Q, Kmiec EB, Sigmund CD, Engelhardt JF. Efficiency of chimeraplast gene targeting by direct nuclear injection using a GFP recovery assay. *Mol Ther.* 2003 Feb;7(2):248-53.
 101. Liu X, Huang X, Sigmund CD. Identification of a nuclear orphan receptor (Ear2) as a negative regulator of renin gene transcription. *Circ Res.* 2003 May 16;92(9):1033-40.
 102. Bianco RA, Keen HL, Lavoie JL, Sigmund CD. Untraditional methods for targeting the kidney in transgenic mice. *Am J Physiol Renal Physiol.* 2003 Dec;285(6):F1027-33.
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