

PERSONAL DATA

Elise Peery Gómez-Sánchez, D.V.M., Ph.D.

Department of Pharmacology & Toxicology

(secondary: Departments of Medicine; Endocrinology & Neurobiology & Anatomical Sciences)

egomez-sanchez@umc.edu

Date of Birth: 3/14/49
Place of Birth: San Tomé, Estado Anzoátequi, Venezuela
Citizenship: USA
Husband: Celso Enrique Gómez-Sánchez, M.D.
Children: Daniel Cliff, 10/3/79; Miriam Teresa, 7/30/83; Clara María, 8/23/88

EDUCATION

B.A.	Case Western Reserve U.	1971
D.V.M.	Texas A & M University	1977
Ph.D.	Texas A & M U. Physiol/Pharmacol	1982

POST-GRADUATE TRAINING

Post-Doctoral Fellowship:	UTHSC-Dallas Department of Pharmacology	'77-'78
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APPOINTMENTS

University appointments

4/2014- Professor; Dept. of Pharmacology & Toxicology
Adjunct Professor; Depts. Medicine, Division of Endocrinology and Neurobiology & Anatomic Science; University of Mississippi Medical Center

11/99-present: Professor; Dept. of Medicine, (Division of Endocrinology); University of Mississippi Medical Center
Adjunct Professor Depts. of Pharmacology & Toxicology and Neurobiology & Anatomic Science; University of Mississippi Medical Center

9/07- 9/13 Faculty and member of Steering Committee, Center for Psychiatric Neuroscience, University of Mississippi Medical Center

9/97-10/99 Professor with tenure; Dept. of Internal Medicine, (Endocrinology & Metabolism); University of Missouri-Columbia,

9/97-10/99 Adjunct Professor; Dept. of Veterinary Biomedical Science, University of Missouri

7/93-9/97 Associate Professor; Dept. of Internal Medicine, University of Missouri-Columbia-

12/93-9/97 Associate Professor (adjunct) - Dept. of Veterinary Biomedical Science, University of

9/92 - 6/93 Associate Professor - Dept. of Internal Medicine, U. of South Florida, Tampa, FL

9/92 - 6/93 Adjunct Associate Professor; Dept. of Pharmacology & Therapeutics, University of South Florida

7/83 - 9/92 Assistant Professor; Dept. of Internal Medicine, University of South Florida

7/89 -9/92 Adjunct Assistant Professor; Dept. of Pharmacology & Therapeutics, USF

2/81-7/83 Instructor - Dept. of Internal Medicine, University of South Florida, Tampa, FL

9/78 - 11/78 Veterinary Clinical Associate, Cardiovascular Medicine & the Dept. of Physiology & Pharmacology, College of Veterinary Medicine, Texas A & M University

VA appointments:

4/1/2014-present GV(Sonny) Montgomery VA Medical Center, Jackson, MS, part time; WOC

11/99-3/31/2014 GV(Sonny) Montgomery VA Medical Center, Jackson, MS, Research Physiologist

8/12-7/13 GV(Sonny) Montgomery VAMC, Jackson, MS; acting ACOS for Research

6/93-10/99 Harry S Truman VA, Columbia, MO; Research Physiologist

4/84-6/93 James A Haley Veterans Administration Hospital, Tampa, FL; Research Physiologist

Other professional employment

1984 - 6/93 Veterinary Clinician for the Pet Facilitated Therapy of the Tampa VA Nursing Home Care and Spinal Cord Trauma Units (volunteer)
1981 -1986 Associate Clinician, Woolf Animal Clinic & Air Animal -Tampa, Fl; relief work in several clinics in Central Florida
1978 -1980 Associate Clinician, Mockingbird Animal Clinic, Frank Simms, DVM, Dallas,Tx; relief work in several clinics in Dallas Metro area
1978-6/93 Veterinary Clinical relief work; exotic animal specialty surgery
9/72 - 9/73 Technician- Department of Physiology, Baylor College of Medicine, Houston, Dr. L.A. Geddes
2/71-9/72 Department of Health, Education and Welfare Trainee Fellowship, Department of Anatomy Case Western Reserve University, Dr. Norman Robbins, mentor
Summer 70 Technician - Department of Biology, Case Western Reserve University, Dr. N. Alldridge
9/69 - 6/70 Technician - Department of Preventive Medicine, Case Western Reserve University, Dr. K.S. Warren & Dr. Abdel-Wahab
Spg/Sum 69 Technician - Department of Physiology, Duke University, Dr. Knut Schmidt-Nielson
Summer 68 Research Assistant - Smithsonian Tropical Research Institute, Panama; Dr. R. Dressler
9/67-6/69 Undergraduate, BS Biology/ undergraduate TA, Duke University, Dr. S Vogel

PROFESSIONAL LICENSURE:

<u>State</u>	<u>I.D. Number</u>	<u>Dates</u>
Mississippi	1381	6/18/02-active
Missouri	VT 0R5606	1/21/94-2008
Texas	4172	8/5/77-active
Florida	VM 0002761	1/30/81-2008

USDA ACCREDITATION:

Texas, 1977-; Florida, 1981-; Mississippi, 2005-

AFFILIATIONS AND MEMBERSHIPS.

American Physiological Society
Endocrine Society- Editorial Board of *Endocrinology*; member, Ethics Advisory Panel
European Endocrine Societies
American Heart Association; Fellow, Council for High Blood Pressure Research
American Society of Hypertension
American Veterinary Medical Association
Mississippi Veterinary Medical Association
Society for Neuroscience, Mississippi Chapter

SERVICE

University of Mississippi Medical Center; 1999-present

5/2014- Executive Committee for the Neuroscience Training Program; member
2015 Department of Pediatrics Rhodes-Cai Research Award; ad hoc reviewer
11/2005-2013 Jackson Heart Study Publications & Presentations Subcommittee, now: *ad hoc* reviewer
2006-2013 Center for Psychiatric Neuroscience/ Neuroscience Training program: grant proposal reviewer; mentor; seminar participant; curriculum development & faculty
2000-2009 Department of Medicine Research Council: Member;
2007-2008 Chairman
10/2003-2007 National Center of Excellence in Women's Health Initiative, NIH # 233-03-0023; member: Core Leadership Committee; Research and Education Subcommittees

GV (Sonny) Montgomery VA Medical Center; Jackson, MS

3/2007-present Chairman, Radiation Safety Committee;
8/2012-34/2014 President, VA Research MS! Foundation
8/2012-7/2013 Acting ACOS/R
10/2010-8/2012 Chairman, Research & Development Committee

Gomez-Sanchez -2015

7/2009-3/2013 Biological Safety Officer
3/13-4/14 Green Environmental Management System; Member
12/2000-1/2013 Research Service Safety Subcommittee;
Chairman 12/2000-1/2009; member

Community, Mississippi

1/03-present Jackson State University IACUC: Member, auxiliary veterinary clinician (unpaid),
training lectures,
Jackson Heart Study, Publication & Presentation Committee 11/2005-2013
Mississippi Science and Engineering Fair-Region II, judge

Service: University of Missouri-Columbia; 1993-1999

1997-1999 Office of Laboratory Animal Medicine Task Force for Occupational Health OPRR
Standards Review
12/98-1999 Curriculum Board; representative to the Curriculum Steering Committee
9/95-10/99 Institutional Animal Care and Use Committee; member,
9/95-10/99: Subcommittees: Alternative Animal Housing & Training
1998 Preparation of the European Economic Union RFP; (EEU Center granted to UM-Columbia)
1994-1999 Department of Internal Medicine Research Committee
1994- 1997 Children's Miracle Network Research Board;

Service: Harry S Truman Memorial V. A.; Columbia, MO 1993-1999

6/95-10/99 Subcommittee for Laboratory Animal Care, Chairman;
Subcommittee for Radiation Safety, member; 6/94-10/99
ad hoc Merit Review Proposal reviewer
member, advisory committee on the selection of the R&D Administrative Officer
organizing committee for the annual VA Research Day May 1996-1999
Lay Speakers Bureau

Service: University of South Florida Medical Center

9/85 - 6/93 Laboratory Animal Ethics Committee (IACUC)
Laboratory Animal Ethics Committee-St. Petersburg campus
9/91 - 6/93 Health Science Center Liaison for the Mayor's Hispanic Advisory Committee,
1992-1993 Chairman
1992-1993 University of South Florida Medical Center Research Council Peer Review Committee;
1987-1993 Governor's Leadership Training for the Future; summers

Service: J. A. Haley V. A. Hospital (Tampa, FL)

1985-6/93 Subcommittee for Laboratory Animal Care
1988-6/93 Advisory Committee for Health Care of Women Veterans; member,
1984-6/93 Veterinary Clinician for the Pet Facilitated Therapy of the Nursing Home Care Unit &
Spinal Cord Trauma Unit

SERVICE TO NATIONAL VA

Veterans Administration Scientific peer review of grant proposals
Career Development proposal review study sessions: 8/08, 4/09:
VISN 16 pilot grants-6/13
Neurobiology C 12/11
Gulf War Syndrome applications Review study Section *ad hoc* 9/05
F-04 ENDO A Merit Review study Sections 11/04
ad hoc Merit Review Proposal reviewer; intermittent, average 1-3/year

SERVICE TO PROFESSIONAL ORGANIZATIONS.

National Institutes of Health
CSR special emphasis panel ZRG1 BBBP-J 45 R; 2014-present

NCCR, Comparative Medicine Review Committee Study Session; 2008-2012
Special Emphasis panels: ZRG1VH-B (95S) & ZRG1 BDCN C(02)M; 2009-10
Cardiovascular & Renal / Hypertension & Microcirculation; 6/03-6/07
STRB; Development and improvement of institutional animal facilities; 10/04
SBIR, Cardiovascular & Renal Study Section) ad hoc 10/02; outside reviewer; 3/99; 2/02
National Health and Medicine Research Council (Australia)
reviewer, 2003; outside mentor for PhD candidates 2002, 2004
American Heart Association
Reviewer Cardiac Bio Reg - BSci 3, Spring & Fall 2013, Spring 2014
Southern Affiliates, Committee R2 – Vascular Biology/Blood Pressure Regulation 3/08
Missouri Affiliate: Speaker's Bureau; Peer Review Group D, 1993-9
Southern Peer Review Consortium; 1989-94
Florida Affiliate, Peer Review Committee, Vice Chairman (1989-6/93); Research Committee; 1992-
6/93, Lay Education committee 1991-1993
Editorial Board Member: *Hypertension, Endocrinology*
American Physiological Society Animal Care and Experimentation Committee 2011-2013
Endocrine Society, Ethics Advisory Committee (1/05-08); now Advisory Panel
International Aldosterone Conference
Co-chairman 6/2005-6, Chairman 6/2006-7, advisory board member 2008-
Experimental Biology 2009 co-organizer of the symposium 'Adrenal Corticosteroid Effects in the Central
Nervous System on the Long-Term Control of Blood Pressure' and speaker
Council for High Blood Pressure Research of the American Heart Association: faculty, Workshop entitled
"Emerging Concepts on Neural Interactions in Hypertension" 10/ 05
FASEB faculty member; Summer Research Conference: Neural Mechanisms in Cardiovascular
Regulation; 7/24-29/04
International Society for Hypertension/European Society for Hypertension joint meeting, organizer &
abstract reviewer, Prague, 2002; Fukuoka, Japan 2006; organizer & speaker of satellite mtg ("Putting
the A back into RAAS", Santorini 2014
American Society of Hypertension; membership committee 1993-1995

Service to the Veterinary Profession

American Veterinary Medical Association; panel for review/validation of exams
Veterinary National Board and Clinical Competency Examinations panel 1992, 1993
Professional Examination Service consultant 1989-1993
Department of Professional Regulation, Florida State Board of Veterinary Medical Examiners; 5/87-6/91 &
6/92-6/93;
Chairman: Probable Cause Panel, Education and Testing, & Continuing Education Evaluation
Committees; 12/92-6/93
Impaired Practitioners Program for the State of Florida, Veterinary Board representative; Co-chairman;
7/91-6/93
Department of Professional Regulation, Consultant, expert witness 7/91-12/92; 8/93-1/95

Invited speaker (last 10 years):

Satellite to the European Society of Hypertension/International Society of Hypertension meeting:
"Putting the A Back into RAAS"; Is Aldosterone Relevant to Brain Mineralocorticoid Receptors? 6/2014
American Heart Association, "Functional & histochemical evidence for the membrane associated MR";
Symposium on: Rapid non-genomic mineralocorticoid receptor effects on cardiovascular function;
11/20/13
Aldosterone and Salt: Kidney and Heart; satellite symposium of the International Society of
Hypertension; 10/2012

American Heart Association "CNS Effects of Circulating and Local Aldosterone in Hypertension;
11/2011

International Congress for Endocrinology, 2010, Kyoto, "Aldosterone synthesis in the brain contributes
to hypertension"

Experimental Biology Symposium "Adrenal Corticosteroid Effects in the Central Nervous System on the
Long-Term Control of Blood Pressure" 2009

Invited lecture "Over-Expression of Aldosterone Synthase in the Brain," Endocrine Society's 90th Annual
Meeting, June 19, 2008

Organizing Committee and speaker: Scientific Workshop on The Mineralocorticoid Receptor - update on
Biology, Structure and Ligands. Berlin from September 10-12, 2008

Organizer, Chair, speaker "receptors and signal transduction," International Conference on the Adrenal
Cortex, June 11-19, 2008

Sixth International Congress of Neuroendocrinology, Cardiovascular Neuroendocrinology symposium;
"Central Mineralocorticoid receptors in Cardiovascular Disease" June 19 – 22, 2006

Novartis Advisory Board, "Extra Adrenal Production of Aldosterone: vessels & Heart" June 2006

AHA Council for High Blood Pressure Research Workshop Emerging Concepts on Neural Interactions
in Hypertension; "Mineralocorticoid Receptor & Cardiovascular Disease: beyond the Kidney" Sept 21,
2005

Merck Pharmaceuticals, Hershey, PA ; "Mineralocorticoid Receptor & Cardiovascular Disease: beyond
the Kidney" 4/2005

Invitation as faculty, FASEB Summer Research Conference: Neural Mechanisms in Cardiovascular
Regulation; 7/24-29/04

11. FUNDED RESEARCH PROJECTS: List funded research projects (current and past, VA and non-VA)
in spreadsheet form with the following information. **NOTE:** For renewal applications, limit to the past 10
years.

Source	Grant #	Title of Project	Role	Dates	Ann Dir
VA		Aldosterone Action in the Brain, Hypertension and Inflammation	PI	4/09-3/13 no cost ext'n 3/14	\$225,700
NIH	COBRE	(Center for Psychiatric Neuroscience) Mineralocorticoid receptors: a link between chronic depression and hypertension?	PI	6/12-6/13	\$30,000
AHA	09GRNT2370045	Implanted Biomaterials, Local Inflammation, and the Heart	co-PI PI	7/09-7/10 7/10-7/11 no cost extn '12	\$50,000
VA		Localization of mineralocorticoid action in the brain and hypertension	PI	10/04-9/08	\$225,700
NIH	HL075321-01	Adrenal decommissioning & hypertension	PI	12/03-11/07 12/07-11/08	\$200,000 no cost exten
VA		Career Scientist Award	PI	4/99-3/04	salary

VA		Hypertension, Diabetes & Hyperlipidemia: Treatment & Outcomes	Collab	2/02-12/04	0 (Houston)
NIH HL27737-21		Aldosterone Hypertension and the Brain	PI	4/00-3/04	\$125,000 No cost extn 3/05
VA: Merit Rev		Mineralocorticoid Receptor Selectivity & Control of Blood Pressure	PI	4/96-3/00	\$102,200 no cost exten '01
AHA: 9650752N		Gestational Environment & Hypertension	PI	1/97-12/99	\$55,000
NIH: HL27737		Aldosterone biosynthesis in the CNS & hypertension	PI	5/97-4/00	\$96,808
Pharmacia		Central antihypertensive effects of Eplerenone: end organ effects	PI	1/01-12/02	\$24,000
Monsanto		Central antihypertensive effects of Eplerenone	PI	1/98-12/00	\$20,900
AHA MO95GS045		Amiloride Sensitive Sodium Channel in Hypertension	PI	7/95-6/97	\$50,000
NIH: HL27737		Role of Endothelin in Experimental Hypertension	CoPI	2/91-1/96	\$80,000
VA Merit Review		Mechanisms of Centrally Mediated Mineralocorticoid Hypertension	PI	4/92-3/95	\$90,000
AHA 92GIA/823 FL affiliate		Role of Ouabain Biosynthesis in Experimental Hypertension	PI	7/92-6/94	\$20,000
AHA Florida Affiliate		Role of Central Actions of Ouabain Hypertension	PI	7/91-6/92	\$80,000
VA: Merit Review		Mineralocorticoids and the Central Mediation of Hypertension	PI	4/88-3/92	\$298,800
VA Merit Review:		CNS Mediation of Mineralocorticoid- Induced Hypertension	PI	4/85-3/88	\$154,900
NIH:		Hypertension Induced by Central Infusion of Aldosterone	PI	10/85-9/88	\$166,000
AHA Florida Affiliate same title)		Hypertension Induced by Central Infusion of Aldosterone	PI	7/85-10/85	\$80,000 (relinquished upon receiving NIH grant of
AHA Florida Affiliate		Hypertensinogenic steroids: Mechanism of Action	PI	7/83-6/86	\$80,000

TRAINING & MENTORING (last 10 years)

Gomez-Sanchez -2015

Lectures

Pharmacology & Toxicology
Program in Neuroscience NSCI 720 & 706
Endocrine Division Case Conference & Journal Club ~4/y
Infectious Disease ~1/yr

Mentor

Primary mentor

Jian Chen MD 2011-2014, Neurobiology & Anatomical Sciences, PhD 2014, residency in neurology 2014, academic tract

Mentor committee

Silmara Formenti, graduate student (PhD), Federal University of São Paulo, 11/10
Xu Hou, UMMC, Psychiatric Neuroscience, 2009- to graduate this year
Lindie Sclooms, Biochemistry, Stellenbosch University, S. Africa PhD granted 2015
Francesca Gioto, Universidad de Padua; International Hypertension program, 2012-
Paola Krall, Dept. Biochemistry, Universidad Católica, Santiago Chile, awarded PhD 2008, now on Faculty

Research Rotations

Francesca Gioto, Universidad de Padua; International Hypertension program, Jean-Paolo Rossi, MD. mentor 10/13-3/14
Lauren Beloate, 2011-12, Psychiatric Neuroscience
Edward (Drew) Townsend, 2012-13, Psychiatric Neuroscience
Muhammad Sumair Riaz, graduate student PhD Psychiatric Neuroscience lab 2011-2015
Justin Cobb, Psychiatric Neuroscience, received PhD 2012
Silmara Formenti, graduate student (PhD), Federal University of São Paulo, 11/10-12/11
Vera Saul, 2006; Freie Universität, Berlin; graduated w/ PhD
Clementine Faisant, Paris, France 2005; now GE Quality Control for Medical Imaging, Paris, Fr
Muriel Gomez-Sanchez, 2006; Universidad Calletano Herredia Facultad de Medicina Veterinaria, veterinary practitioner; partner/owner of food safety company using molecular diagnostics
Paola Krall, rotation 2004, Dept. Biochemistry, Universidad Católica, Santiago Chile, PhD in 2008

Dean's Summer Research Fellows, Neuroscience Scholars Program, SURE program

Miles Dunbar 2010-2011
Emily Deaton 2008
Ursuline Hawkins & Kirsten Gambrell 2005; both now physicians
Vignesh Shettar 2006-7, now MD, residency
Yutong Liu 2007, now MD, residency
Anuj Patel, now MD, residency
Zheng Zhu, 2004; now MD in practice affiliated w/ UVA Medical Center

Other undergraduate summer students

Katherine Werbenath 2010 Emory University, senior; now Medical student at Emory
Majalima Mbomzabwe 2010, now University of Alabama Birmingham
Clara Gomez Sanchez 2006-2010 Emory University; MD 2014; residency UCSF 2014-2020 academic tract

Post Doctoral Fellows (1999-)

Xin Qi, MD 2012-6/2015; start residency in neurology; plans an academic career
Kenji Oki, MD 4/10-3/12; returned to position in Japan; continues research collaborations
Carolina Velarde Miranda, MD 4/08-12; moved to TN w/ husband; hopes to enter faculty at UT
Milay Luis, MD 4/09-8/12; IM residency in NY; Starting Endocrine fellowship 6/2015
Claudia Wilhelm, PhD 6/2005-4/08; Chemistry & Biochemistry teacher; St Andrews Episcopal Sch.
Naveed Ahmad, MD; 2001-5; finished Residency in GI, UMMC GI Fellowship training where he continuing clinical research; physician in Lafayette, ID 2012-
Silvia Rilli MD, 2/2005-6/2006; on endocrinology faculty at Universidad de Ancona, Italy
Gaston Vergara, MD; 2002-4; finished Residency & Fellowship training in Cardiology; physician in Las Vegas, NV

Melyssa Bratton 2000- 2004. NRSA fellowship 2002-2005; Young Investigator Award, International Aldosterone Conference 2002, now at Tulane University
Damian Romero 2000-2002; now Department of Biochemistry Associate Professor 2008-present
Lu Yu Huber 2000-2003; Research Associate, University of South Dakota Cardiovascular Institute, Sioux Falls w/ Martin Gerdes PhD 2003-2006; Medicine Residency program, USD Medical College; Pulmonary/Critical Care Fellowship, now in practice
Stefania Morra di Cella MD, Universidad de Torino, Italy (3/00-8/00); now on faculty; endocrinology

Faculty:

Mary Jane Burton, MD; mentor for SCVAHCN Research Career Development Grant 2007-2010
Rajesh Bhagat, MD; VA staff physician, UMMC Assistant. Prof, mentor for SCVAHCN Research Career Development Grant 2005-2008; 2012-
Meng-Yang Zhu, mentor for NIH grant obtained in 2006; now Associate Professor of Pharmacology, East Tennessee State University, 2007
R. Baliga, MD, UMC Professor of Pediatrics, clinician scientist, obtained NIH funds with newly acquired molecular biology repertoire. Serve as a consultant on his NIH applications 2003-7
J. Maher, MD, 1999-2007, VA, clinician scientist, Associate Professor of Medicine. Served as mentor for his Advanced Career Development award (04/99-04/02), leading to a Merit Review grant "The Function of the FEM1 Genes"; Assoc Prof of Med at UTHSC-Dallas 2007-2011; UMMC 2011-

Recent chapters (invited):

"Steroid metabolism, cortisol-cortisone shuttle, and hormone receptors – GR/MR – peripheral and central effects of glucocorticoids and mineralocorticoids Elise Gomez-Sanchez & Celso E. Gomez-Sanchez in *Comprehensive Physiology*, APS; Wiley-Blackwell

"Central Mineralocorticoid Receptors and Cardiovascular Disease" Elise P. Gomez-Sanchez, in *Endocrine Hypertension*, Editors: CA Koch & GP Chrousos; 2013; Humana Press, Springer, ISBN: 978-1-60761-547-7 (Print) 978-1-60761-548-4 (Online)

"Aldosterone Receptors and Their Renal Effects: Molecular Biology and Gene Regulation"

Authors: Celso E. Gomez-Sanchez, Elise P. Gomez-Sanchez, Mario Galigniana

In: Textbook of Nephro-Endocrinology, Ed. AK Singh & GH Williams; Academic Press, 2009 ISBN: 978-0-12-373870-7

Peer Reviewed Publications:

1. **Gomez-Sanchez CE, Kuppusamy M, Gomez-Sanchez EP** 2014 Somatic mutations of the ATP1A1 gene and aldosterone-producing adenomas. *Mol Cell Endocrinol*
2. **Nakamura Y, Maekawa T, Felizola SJ, Satoh F, Qi X, Velarde-Miranda C, Plonczynski MW, Ise K, Kikuchi K, Rainey WE, Gomez-Sanchez EP, Gomez-Sanchez CE, Sasano H** 2014 Adrenal CYP11B1/2 expression in primary aldosteronism: Immunohistochemical analysis using novel monoclonal antibodies. *Mol Cell Endocrinol* 392:73-79
3. **Konosu-Fukaya S, Nakamura Y, Satoh F, Felizola SJ, Maekawa T, Ono Y, Morimoto R, Ise K, Takeda KI, Katsu K, Fujishima F, Kasajima A, Watanabe M, Arai Y, Gomez-Sanchez EP, Gomez-Sanchez CE, Doi M, Okamura H, Sasano H** 2014 3beta-hydroxysteroid dehydrogenase isoforms in human aldosterone-producing adenoma. *Mol Cell Endocrinol*
4. **Gomez-Sanchez EP** 2014 Brain mineralocorticoid receptors in cognition and cardiovascular homeostasis. *Steroids* 91C:20-31
5. **Gomez-Sanchez EP** 2014 Salt-Sensitive Hypertension: Food for Thought. *Hypertension*
6. **Gomez-Sanchez E, Gomez-Sanchez CE** 2014 The multifaceted mineralocorticoid receptor. *Comprehensive Physiology* 4:965-994
7. **Wosiski-Kuhn M, Erion JR, Gomez-Sanchez EP, Gomez-Sanchez CE, Stranahan AM** 2014 Glucocorticoid receptor activation impairs hippocampal plasticity by suppressing BDNF expression in obese mice. *Psychoneuroendocrinology* 42:165-177

8. **Gomez-Sanchez CE, Qi X, Velarde-Miranda C, Plonczynski MW, Parker CR, Rainey W, Satoh F, Maekawa T, Nakamura Y, Sasano H, Gomez-Sanchez EP** 2014 Development of monoclonal antibodies against human CYP11B1 and CYP11B2. *Mol Cell Endocrinol* 383:111-117
9. **Chen J, Gomez-Sanchez CE, Penman A, May PJ, Gomez-Sanchez E** 2014 Expression of mineralocorticoid and glucocorticoid receptors in preautonomic neurons of the rat paraventricular nucleus. *Am J Physiol Regul Integr Comp Physiol* 306:R328-340
10. **Johnson AC, Lee JW, Harmon AC, Morris Z, Wang X, Fratkin J, Rapp JP, Gomez-Sanchez E, Garrett MR** 2013 A mutation in the start codon of gamma-crystallin D leads to nuclear cataracts in the Dahl SS/Jr-Ctr strain. *Mamm Genome* 24:95-104
11. **Oki K, Kopf PG, Campbell WB, Luis Lam M, Yamazaki T, Gomez-Sanchez CE, Gomez-Sanchez EP** 2013 Angiotensin II and III Metabolism and Effects on Steroid Production in the HAC15 Human Adrenocortical Cell Line. *Endocrinology* 154:214-221
12. **Velarde-Miranda C, Gomez-Sanchez EP, Gomez-Sanchez CE** 2013 Regulation of Aldosterone Biosynthesis by the Kir3.4 (KCNJ5) Potassium Channel. *Clin Exp Pharmacol Physiol* 40:895-901
13. **Chen J, Gomez-Sanchez CE, Penman A, May PJ, Gomez-Sanchez EP** 2013 Expression of Mineralocorticoid and Glucocorticoid Receptors In Pre-autonomic Neurons of the Rat Paraventricular Nucleus. *Am J Physiol Regul Integr Comp Physiol*
14. **Gomez-Sanchez CE, Gomez-Sanchez EP** 2012 Mutations of the Potassium Channel KCNJ5 Causing Aldosterone-Producing Adenomas: One or Two Hits? *Hypertension* 59:196-197
15. **Oki K, Gomez-Sanchez EP, Gomez-Sanchez CE** 2012 Role of mineralocorticoid action in the brain in salt-sensitive hypertension. *Clin Exp Pharmacol Physiol* 39:90-95
16. **Oki K, Plonczynski MW, Luis Lam M, Gomez-Sanchez EP, Gomez-Sanchez CE** 2012 Potassium Channel Mutant KCNJ5 T158A Expression in HAC-15 Cells Increases Aldosterone Synthesis. *Endocrinology* 153:1774-1782
17. **Gomez-Sanchez CE, Gomez-Sanchez EP** 2012 The protective side of the mineralocorticoid receptor. *Endocrinology* 153:1565-1567
18. **Mulatero P, di Cella SM, Monticone S, Schiavone D, Manzo M, Mengozzi G, Rabbia F, Terzolo M, Gomez-Sanchez EP, Gomez-Sanchez CE, Veglio F** 2012 18-hydroxycorticosterone, 18-hydroxycortisol, and 18-oxocortisol in the diagnosis of primary aldosteronism and its subtypes. *J Clin Endocrinol Metab* 97:881-889
19. **Gomez-Sanchez EP, Gomez-Sanchez CE** 2012 Central regulation of blood pressure by the mineralocorticoid receptor. *Mol Cell Endocrinol* 350:289-298
20. **Briones AM, Cat AN, Callera GE, Yogi A, Burger D, He Y, Correa JW, Gagnon AM, Gomez-Sanchez CE, Gomez-Sanchez EP, Sorisky A, Ooi TC, Ruzicka M, Burns KD, Touyz RM** 2012 Adipocytes produce aldosterone through calcineurin-dependent signaling pathways: implications in diabetes mellitus-associated obesity and vascular dysfunction. *Hypertension* 59:1069-1078
21. **Hawkins UA, Gomez-Sanchez EP, Gomez-Sanchez CM, Gomez-Sanchez CE** 2012 The Ubiquitous Mineralocorticoid Receptor: Clinical Implications. *Curr Hypertens Rep* 14:573-580
22. **Oki K, Plonczynski MW, Lam ML, Gomez-Sanchez EP, Gomez-Sanchez CE** 2012 The Potassium Channel, Kir3.4 Participates in Angiotensin II-Stimulated Aldosterone Production by a Human Adrenocortical Cell Line. *Endocrinology* 153:4328-4335
23. **Pietranera L, Brocca ME, Cymeryng C, Gomez-Sanchez E, Gomez-Sanchez CE, Roig P, Lima A, De Nicola AF** 2012 Increased Expression of the Mineralocorticoid Receptor in the Brain of Spontaneously Hypertensive Rats (Shr). *J Neuroendocrinol* 24:1249-1258
24. **Wang JM, Hou X, Adeosun S, Hill R, Henry S, Paul I, Irwin RW, Ou XM, Bigler S, Stockmeier C, Brinton RD, Gomez-Sanchez E** 2012 A dominant negative ERbeta splice variant determines the effectiveness of early or late estrogen therapy after ovariectomy in rats. *PLoS One* 7:e33493
25. **Xue B, Beltz TG, Yu Y, Guo F, Gomez-Sanchez CE, Hay M, Johnson AK** 2011 Central interactions of aldosterone and angiotensin II in aldosterone- and angiotensin II-induced hypertension. *Am J Physiol Heart Circ Physiol* 300:H555-564
26. **Gomez-Sanchez CE, Warden M, Gomez-Sanchez MT, Hou X, Gomez-Sanchez EP** 2011 Diverse immunostaining patterns of mineralocorticoid receptor monoclonal antibodies. *Steroids* 76:1541-1545

27. **Gomez-Sanchez CE, Gomez-Sanchez EP** 2010 Aldosterone-producing adenomas: mining for genes. *Hypertension* 55:1306-1307
28. **Gomez-Sanchez EP, Gomez-Sanchez CM, Plonczynski M, Gomez-Sanchez CE** 2010 Aldosterone synthesis in the brain contributes to Dahl salt-sensitive rat hypertension. *Exp Physiol* 95:120-130
29. **Gomez-Sanchez EP** 2010 The mammalian mineralocorticoid receptor: tying down a promiscuous receptor. *Exp Physiol* 95:13-18
30. **Romero DG, Gomez-Sanchez EP, Gomez-Sanchez CE** 2010 Angiotensin II-regulated transcription regulatory genes in adrenal steroidogenesis. *Physiol Genomics* 42A:259-266
31. **Gomez-Sanchez EP, Gomez-Sanchez MT, de Rodriguez AF, Romero DG, Warden MP, Plonczynski MW, Gomez-Sanchez CE** 2009 Immunohistochemical Demonstration of the Mineralocorticoid Receptor, 11 β -Hydroxysteroid Dehydrogenase-1 and -2, and Hexose-6-phosphate Dehydrogenase in Rat Ovary. *J Histochem Cytochem* 57:633-641
32. **Gomez Sanchez EP** 2009 Central mineralocorticoid receptors and cardiovascular disease. *Neuroendocrinology* 90:245-250
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RESEARCH INTERESTS

My research has focused on the biology of the Mineralocorticoid Receptor (MR) and the regulation of adrenal steroid synthesis, primarily aldosterone, as these relate to hypertension and cardiovascular disease and in particular, the role of brain MR in hypertension. We confirmed that aldosterone acted through the MR in hemodynamic control centers of the brain to produce hypertension and that much of the renal and cardiovascular pathology in mineralocorticoid-salt models was mediated by MR in these target tissues and are not solely secondary effects of hypertension per se. We recently showed that MR are expressed by pre-sympathetic neurons and that this expression is modulated by the level of sodium consumption. My current interests include the mechanisms of the close association of cardiovascular disease, depression and dementia which are independent risk factors for each other. MR are highly expressed in hippocampal neurons and vessels, as well as some glia. Their involvement in neurovascular coupling is unknown, but pathological activation of MR produces oxidative stress, the basis of both vascular and neuronal disease. We are also very interested in epigenetic programming of both neurological and cardiovascular disease. MR and glucocorticoid receptors (the GR acts in concert and in opposition to the MR in neurons) are susceptible to changes in DNA methylation, which in turn is highly susceptible to oxidative stress. To this end our work includes animal behavior, whole animal pharmacology and pathology, biochemistry, molecular biology, immunohistochemistry, and histomorphometry. We also work with cultured cell models in a long term collaborator's laboratory which has developed and freely disseminates to other investigators poly- and monoclonal antibodies, cell models, specific plasmids, and viral vectors.