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Eric Matthew George

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Personal Statement:

My major areas of research interest are in gestational disorders, in particular preeclampsia and gestational hypertension. As the etiology and pathophysiology of preeclampsia are still poorly understood, my lab is primarily focused on understanding the downstream effects of placental insufficiency and ischemia-believed to be the central mechanism driving the symptomatic phase of the disorder.

Recently, the primary focus of the lab has been in determining the relevance of ischemia-driven production of extracellular remodeling factors. Notably this includes overproduction of the enzymes heparanase and matrix metalloproteinases. Currently, we are examining the biological effects of the cleavage products of these enzymes, and determining their role in inflammatory factor production. We have further identified a number of novel anti-angiogenic peptides produced by ischemic placental tissue which have not been previously described and we are actively investigating the biological mechanisms underlying them and their relevance in both our pre-clinical rodent model and the utility of these peptides as a biomarker in our UMC patient population.

While much remains obscure in regards to the pathophysiology of preeclampsia, a number of dysregulated proteins have been identified which are believed to be responsible for many of the maternal symptoms, in particular the anti-angiogenic protein sFlt-1. Therefore, a second major aim of the lab has been to develop peptide-based therapeutics targeting sFlt-1 and other identified factors utilizing a novel synthetic peptide delivery system which prevents fetal exposure of attached agents. We are also currently planning to expand the range of delivered agents to other disease states, such as improving fetal safety of chemotherapeutic agents during pregnancy.

Education:

2009-2013	University of Mississippi Medical Center Postdoctoral Fellowship (Dr. Joey Granger, advisor)
2010	University of Mississippi Medical Center Ph.D. in Biochemistry (Dr. David Brown, advisor) Thesis: *In Vivo* Structural Modeling of Mouse H1c Containing Chromatosomes, and Identification of Prothymosin α as Linker Histone Chaperone.
2009	University of Mississippi Medical Center Master of Biological Sciences
2002	University of Mississippi B.A. in Biochemistry/History

Professional Experience:

2019-Present	Associate Professor, Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson, MS
2013-present	Assistant Professor, Department of Biochemistry, University of Mississippi Medical Center, Jackson, MS
2013-present	Graduate Faculty, School of Graduate Studies in the Health Sciences
2013-2019	Assistant Professor, Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson, MS
2009-present	Member, UMMC Women's Health Research Center, Jackson, MS
2009-present	Member, UMMC Cardiovascular and Renal Research Center, Jackson, MS
2011-2013	Instructor, Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson, MS
2009-2011	Postdoctoral Fellow, Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson, MS
2002-2010	Graduate Student, Department of Biochemistry, University of Mississippi Medical Center, Jackson, MS

Awards:

2018	University of Mississippi Medical Center Excellence in Research Award-Gold Medal
2016	APS Early Career Advocacy Fellowship
2015	APS WEH New Investigator Award
2015	University of Mississippi Medical Center Excellence in Research Award-Silver Medal
2014	University of Mississippi Medical Center Excellence in Research Award – Bronze Medal
2011	American Heart Association HBPR Trainee Advocacy New Investigator Travel Award
2010	American Heart Association Hypertension Summer School Travel Award

Professional Memberships:

American Heart Association
American Physiological Society

SERVICE:

University Service:

2020-Present	Associate Director, Physiology PhD Program Director
2019-Present	Institutional Core Committee
2015 – 2018	Department of Physiology and Biophysics Seminar Director
2013 – 2016	Member, University of Mississippi Medical Center School of Graduate Studies in the Health Sciences Alumni Board of Directors
2015 – 2016	Member, University of Mississippi Medical Center Postdoctoral Advisory Committee
2014 – 2015	Cardiovascular and Renal Research Center Seminar Director

Professional Consultation:

2014 – Present	Reviewer for the Intramural Research Support Program (IRSP), University of Mississippi Medical Center
2011 – Present	Reviewer for AHA Summer Undergraduate Research Fellowship Grants
2015	Italian National Research Agency
2015	External Reviewer for French National Research Agency
2015	External Reviewer for Medical Research Council, United Kingdom
2016	External Reviewer, MSU Veterinary School Intramural Research Grants
2018 – Present	Reviewer for AHA Vascular Biology and Blood Pressure Fellowship Study Section
2018	External Reviewer for Swiss National Research Agency
2019	Ad Hoc Reviewer, NIH Study Section ZRG1 EMNR-S

Journal/Editorial:

Editorial Board:

2016 – Present	Editorial Board Member, *Physiological Genomics*
2015 – Present	Editorial Board Member, *Obstetric and Pediatric Pharmacology*
2015 – Present	Editorial Board Member, *Hypertension*

Ad Hoc Review

Reproductive Sciences
Biology of Sex Differences
International Journal of Biological Sciences
American Journal of Hypertension
Clinical Sciences
Physiological Genomics
European Journal of Obstetrics & Gynecology and Reproductive Biology
International Journal of Hypertension
Biochemistry and Cell Biology
Placenta
Gynecology and Obstetrics: Current Research
Current Molecular Medicine
BioMed Research International
Clinical and Experimental Hypertension
Journal of Cardiovascular Pharmacology
Reproductive Sciences
PLOS ONE
Experimental Physiology

Journal of Molecular Histology
Clinical Biochemistry
Frontiers in Pharmacology
Redox Report
Reproduction, Fertility and Development

Professional Scientific Society Service:

2010 – 2017	Member of the Research Trainee Advisory Subcommittee for the AHA's Council on High Blood Pressure
2015 – 2107	Faculty Advisor, Trainee Advocacy Committee, APS Sex and Gender Research Interest Group
2018-Present	Advocacy Representative, AHA Leadership Committee, Hypertension Council.

Community Outreach

2014 – Present	Physiology Understanding (PhUn) Week at the Mississippi Children's Museum Event
2012 – 2013	Physiology Understanding (PhUn) Week Outreach at Northwest Rankin Elementary

TEACHING/MENTORING

Undergraduate Teaching

2004	Lecturer, Health Professions Alliance Partnership Summer Enrichment Program
1999 – 2002	Teaching Assistant, Undergraduate Laboratory, Department of Biology, University of Mississippi

Graduate Teaching:

2018	Lecturer, Special Topics in Neuroscience (NSCI708)
2016	Guest Lecturer, Medical Physiology (PHYSIO611)
2018 - Present	Lecturer, Advanced Endocrinology (PHYSIO715)
2017 - Present	Lecturer, Circulatory Physiology (PHYSIO717)
2014 – Present	Small Group Leader, Medical Physiology (PHYSIO611)
2015 – Present	Lecturer, Physiological Applications of Molecular Biology (PHYSIO727)
2015 – 2016	Lecturer, Responsible Conduct of Research (ID709), UMMC
2013 – Present	Lecturer, Biochemical Methods (BCH740)
2014 – Present	Lecturer, Principles of Physiology (PHYSIO625/725), UMMC
2005 – 2006	Lecturer, Biomedical Ethics, UM School of Pharmacy

Trainees:

Graduate Students

2016-2019	Dr. Adrian Eddy, PhD (PhD Program, Physiology),
2018-Present	Kyle Moore (PhD Program, Physiology)

Undergraduate Students:

2018-2019	Haley Murphy (SURE program, Vanderbilt University)
2016-2017	London Williams (SURE program, Alcorn University)
2015	Logan Wilson (SURE program, University of Mississippi)
2014	Kevin Garman (SURE program, University of Kansas)

Medical Students:

2015-2016	Dr. William Stewart, MD (MSRP program, UMMC)

Rotation Students:

2015	Adrian Eddy (PhD Program, Physiology)
2015	Elena Dent (PhD program, Physiology
2015	Jamarius Waller (MD, PhD program)
2015	Ezekiel Gonzalez-Fernandez (MD, PhD program)
2014	Abdulhadi Al Almodi (PhD program, Physiology)
2014	Victoria Wolf (PhD program, Physiology)
2014	Gwendolyn Davis (PhD program, Physiology)

Thesis Committee:

2015 -- 2017 Jeremy McGowan (PhD Program, Neuroscience)
2016 -- 2018 Dr. Marija Kuna (PhD Program, Biochemistry)

2016 -- 2018 Ashley Newsome (MD/PhD Program, Physiology)
2017-2019 Adrian Eddy (PhD Program, Physiology)
2017-2019 Erika Guise (PhD Program, Physiology)
2018-Present Tyler Lomax (PhD Program, Physiology)
2018-2020 Jason Engel (MD/PhD Program, Physiology)
2018-Present Ciara McKnight (PhD Program, Cell and Molecular Biology)
2018-2020 Subhi Younes (MD/PhD Program, Physiology)
2018-Present Laura Coats (PhD Program, Physiology)
2019-Present Kyle Moore (PhD Program, Physiology)
2019-Present John Daseke (PhD Program, Physiology)
2019-Present Jamarius Waller (MD/PhD Program, Neuroscience)
2020-Present Madelyn Davis (PhD Program, Cell and Molecular Biology)

RESEARCH:

Oral Presentations and Invited Participation in Scientific Meetings.

1. Shedding of the Placental Glycocalyx in Response to Ischemia and Hypoxia. International Society for Hypertension in Pregnancy 2018. Oct 2018. Amsterdam, The Netherlands.
2. Extracellular Matrix Remodeling in the Etiology of Preeclampsia. Experimental Biology 2016. April 3, 2016.
3. Preeclampsia and Cardiovascular Disease. International Society for Hypertension 2014, Athens, Greece. June 15, 2014.
4. Transcriptomics of placental ischemia/new peptide therapies for preeclampsia. Tox Talx 2013, Mill Valley, CA. June 23, 2013.
5. Hypoxia-induced Heparanase Regulates sFlt-1 Release from Placental Chorionic Villi. American Heart Association's Council on High Blood Pressure Research 2012 Scientific Sessions. Washington, D.C. Sep 21, 2012.
6. "Is HO-1 a potential therapeutic of pre-eclampsia." 7th International Congress on Heme Oxygenases and Related Enzymes. Edinburgh, Scotland. May 30, 2012.
7. "Heme Oxygenase-1 as a Potential Therapeutic Target for the Treatment of Preeclampsia." APS Physiology of Cardiovascular Disease: Gender Disparities. Jackson, MS. Oct 14, 2011.
8. "Heme Oxygenase-1 Negatively Regulates sFlt-1 Production in Placental Villi by its Metabolic Byproducts Carbon Monoxide and Bilirubin."American Heart Association's Council on High Blood Pressure Research 2011 Scientific Sessions. Orlando, FL. Sept. 22, 2011.
9. "Heme oxygenase-1 induction attenuates sFlt-1 induced hypertension in pregnant rats." Experimental Biology 2011. Washington, D.C. April 10, 2011.

Invited Seminars / Lectures:

1. The Maternal/Fetal Interface: More than a barrier?. UMMC Dept of Physiology Seminar Series. 2/12/20.
2. Chasing the Mechanisms of Placental Ischemia-Induced Hypertension. UMMC Dept of Physiology Seminar Series. 2/13/19.
3. Therapeutic peptide to manage preeclampsia. University of Iowa, Maternal/Fetal Medicine Grand Rounds. Jan 15, 2019
4. Novel Mechanisms in Preeclampsia. University of Iowa. Department of Pharmacology Seminar. Jan 15, 2019.
5. Animal Models for Preeclampsia. Predicting, Preventing and Treating Preeclampsia Workshop. NIH. March 14, 2018
6. Preeclampsia: Challenges and Opportunities. UMMC Dept of Physiology Seminar Series. June 28, 2017.
7. The Placental Glycocalyx in Pregnancy and Preeclampsia. UMMC Dept of Physiology Seminar Series. May 25, 2016.
8. Placental ECM Fragmentation in Preeclampsia. UMMC CRRC Work in Progress seminar. May 14, 2015.
9. New molecular mechanisms in the pathogenesis of preeclampsia. UMMC Dept of Pharmacology Seminar. Nov 24, 2015.
10. Novel anti-angiogenic therapies for ocular disorders. UMMC CRRC Work in Progress seminar. Sept 18, 2015.
11. N, 201ew Molecular Mechanisms in the Pathogenesis of Preeclampsia. UMMC Department of Pharmacology Seminar Series. Nov 24, 2014.

12. New Pathogenic Mechanisms in Preeclampsia. UMMC Department of Biochemistry Seminar Series, Oct 28, 2013.
13. Identifying Novel Pathogenic Factors in Preeclampsia by Transcriptomics. UMMC Department of Physiology Seminar Series. Aug 29, 2012.
14. HO-1: A potential therapy for pregnancy induced hypertension. UMMC Department of Physiology Seminar Series. Aug 17, 2011.
15. Heme oxygenase-1 induction attenuates sFlt-1 induced hypertension in pregnant rats. Experimental Biology 2011. April 10, 2011.
16. "New Insights into the Function of Linker Histones." Engineer Research and Development Center, US Army Corps of Engineers, Vicksburg, MS. Feb. 2, 2011.
17. Heme Oxygenase-1 in placental ischemia. UMMC Department of Physiology Seminar Series. Aug 15, 2010.

Research Support:

Current Support:

Grant Number: R01HL121527
Dates: 4/1/2020 – 3/31/2024
Amount: $2,190,912
Source: National Heart Lung and Blood Institute, NIH
Title: A Novel Protein Delivery System for Therapy of Preeclampsia.
Goals: The goal of the project is to develop a delivery system for protein and peptide therapeutics that treat preeclampsia while preventing fetal exposure.
Role: Co-investigator

Grant Number: R01HL137791
Dates: 7/1/2017 – 6/30/22
Amount: $1,906,250
Source: National Heart Lung and Blood Institute, NIH
Title: A Novel Therapy of Preeclampsia.
Goals: The goal of the project is to develop a delivery system for protein and peptide therapeutics based on the PlGF protein that treat preeclampsia.
Role: PI

Pending Support:

Grant Number: R01HL138101
Dates: 1/1/18-12/31/23
Source: NIH/NHLBI
Title: Novel Hypertensive Mechanisms in Preeclampsia
Role: PI

Grant Number: AHA POST

Dates: 12/1/18-11/30/19
Source: AHA
Title: Novel Therapy for Preeclampsia
Role: Sponsor

Completed Support:

Grant Number: R01HL121527
Dates: 1/15/2014 – 12/31/2019
Amount: 1,906,250
Source: National Heart Lung and Blood Institute, NIH
Title: A Novel Protein Delivery System for Therapy of Preeclampsia.
Goals: The goal of the project is to develop a delivery system for protein and peptide therapeutics that treat preeclampsia while preventing fetal exposure.
Role: Co-investigator

Grant Number: R00HL116774
Dates: 3/01/14-2/28/18
Amount: $747,0000
Source: National Heart Lung and Blood Institute, NIH
Title: Hypertensive Mechanisms in Preeclampsia.
Goals: is focused on the molecular mechanisms which regulate release of sFlt-1 in response to placental ischemia during preeclampsia; specifically the role of heparanase in regulating sFlt-1 release from the placenta to the maternal circulation.
Role: PI

Grant Number: 11POST7840039
Dates: 7/1/2011-6/30/13
Amount: ~$80,000
Source: American Heart Association Post-Doctoral Award
Title: Hypertension and Pregnancy
Goals: seeks to examine the utility of heme oxygenase-1 induction as a possible therapeutic in the management of hypertension associated with preeclampsia.
Role: PI

Grant Number: P20GM104375
Dates: 3/1/14-2/28/16
Amount: $30,000
Source: National Institute of General Medical Sciences
Title: A novel proangiogenic therapy for preeclampsia
Goals: Development of a novel peptide based therapeutic for the management of preeclampsia.

Role: PI (seed grant)

Grant Number: GRNT31460000
Dates: 7/1/16-6/30/18
Source: American Heart Association
Amount: $154,000
Title: A novel proangiogenic therapy for preeclampsia
Goals: Development of a novel peptide based therapeutic for the management of preeclampsia.
Role: PI

Other Grant Submissions: (Since start of tenure track)

Agency	Mechanism	Date Submitted	Title/Role	Role	Priority Score
NIH/NEI	R21 R21 A1	2-2012 7-2014	Development of an sFlt miniprotein for treatment of corneal neovascularization (MPI with Bidwell)	MPI	50 ND
Preeclampsia Foundation	Vision	5-2013	A Novel Protein Delivery System for Therapy of Preeclampsia	PI	
NIH	R41	2-2014	A protein delivery system for maternally sequestered chemotherapy	Sub	42
NIH	R41	11-2014	A protein delivery system for maternally sequestered chemotherapy	Sub	ND
NIH	R01	10-2015	Novel Therapy for Preeclampsia	PI	49
NIH	R01	4-2016	Novel Therapy for Preeclampsia	PI	37
NIH	R01	10-2016	Novel Hypertensive Mechanisms in Preeclampsia	PI	ND
NIH	R41	1-2016	A Maternally Sequestered sFlt-1 Antagonist Biopolymer for Treatment of Preeclampsia	Sub	ND
DOD	Innovator Award	5-2016	Maternally Sequestered Chemotherapy for Treatment of Breast Cancer During Pregnancy	MPI	ND
AHA	POST	7-2017	A novel therapeutic for preeclampsia	Spon	ND
NIH	F31	12-21017	A novel therapeutic for preeclampsia	Spon	ND

PI Principle Investigator
MPI Multiple Principle Investigator
Co-I Co-Investigator
Sub University Subcontractor for Small Business Grants
Spon Fellowship Sponsor

University of Mississippi Health Care

Peer-Reviewed Publications:

1. Moore KH, Murphy HA, and George EM. The Glycocalyx: A Central Regulator of Vascular Function. Am J Physiol Regul Integr Comp Physiol. 2021 Jan 27. PMC in Progress.

2. Moore KH, Chapman H, and **George EM.** Unfractionated heparin displaces sFlt-1 from the placental extracellular matrix. Biol Sex Diff. 2020 Jun. 11:34. PMC in process.

3. Eddy AE, Chapman H, Brown DT, and **George EM**. Differential Regulation of sFlt-1 Splicing by U2AF65 and JMJD6 in Placental Derived and Endothelial Cells. BioScience Reports. 2020 Feb 28:40(2). PMC7042122.

4. Biopolymer-Delivered, Maternally Sequestered NF-κB (Nuclear Factor-κB) Inhibitory Peptide for Treatment of Preeclampsia. Eddy AC, Howell JA, Chapman H, Taylor E, Mahdi F, **George EM**, Bidwell GL 3rd. Hypertension. 2020 Jan;75(1):193-201. PMC7008946.

5. Eddy AC, Chapman H, and **George EM**. : Heparanase regulation of sFLT-1 release in trophoblasts in vitro. Placenta. 2019 Sep 15;85:63-68. PMC7099653.

6. Maric-Bilkan C, Abrahams VM, Arteaga SS, Bourjeily G, Conrad KP, Catov JM, Costantine MM, Cox B, Garovic V, **George EM**, Gernand AD, Jeyabalan A, Karumanchi SA, Laposky AD, Miodovnik M, Mitchell M, Pemberton VL, Reddy UM, Santillan MK, Tsigas E, Thornburg KLR, Ward K, Myatt L, Roberts JM. Research Recommendations From the National Institutes of Health Workshop on Predicting, Preventing, and Treating Preeclampsia. Hypertension. 2019 Jan 28. PMC6416073.

7. Eddy AC, Chapman H, and **George EM**. Acute Hypoxia and Chronic Ischemia Induce Differential Total Changes in Placental Epigenetic Modifications. Reproductive Sciences. 2018 Sep 17:1933719118799193. PMC6728559.

8. Eddy AC, Bidwell GLB III, and **George EM**. 'Pro-Angiogenic Therapeutics for Preeclampsia' Biol Sex Differ. 2018 Aug 25;9(1):36. PMC6109337

9. Logue OC, Mahdi F, Chapman H, **George EM**, and Bidwell GLIII. A maternally sequestered, biopolymer-stabilized vascular endothelial growth factor (VEGF) chimera for treatment of preeclampsia. J Am Heart Assoc. 2017 Dec 8;6(12). PMC5779036.

10. **George EM,** and Granger JP. Hypertension: a new genetic clue to unravel the origins of pre-eclampsia. Nat Rev Nephrol. 2017 Oct; 13(10): 599-600.

11. **George EM,** Cockrell K, Arany A, Stec DE, Rimoldi JM, Gadepalli RSV, and Granger JP. Carbon monoxide releasing molecules blunt placental ischemia-induced hypertension. Am J Hyper. 2017 Sep 1;30 (9):931-937. PMC5861582.

12. Logue OC, **George EM**, Bidwell GL 3rd. Preeclampsia and the brain: neural control of cardiovascular changes during pregnancy and neurological outcomes of preeclampsia. Clin Sci (Lond). 2016 Aug 1;130(16):1417-34. PMC4958371.

13. Logue OC, McGowan JW, **George EM**, Bidwell GL 3rd. Therapeutic angiogenesis by vascular endothelial growth factor supplementation for treatment of renal disease. Curr Opin Nephrol Hypertens. 2016 Sep;25(5):404-9. PMC4974125.

14. Flanagan, TW, Files TK, Casano KR, **George EM**, and Brown DT. Photobleaching studies reveal that a single amino acid polymorphism is responsible for the differential binding affinities of linker histone subtypes H1.1 and H1.5. Biol Open. Feb 24;5(3):372-80. PMC4810752.

15. **George EM,** Mahdi F, Logue OC, Robinson GG, and Bidwell GL. Corneal Penetrating Elastin-like Polypeptide Carriers. Journal of Ocular Pharmacology and Therapeutics. J Ocul Pharmacol Ther. 2016 Apr; 32(3):163-71. PMC4939452.

16. **George EM,** Stout JM, Stec DE, and Granger JP. Heme oxygenase induction attenuates TNF-α induced hypertension in pregnant rodents. Front. Pharmacol. 2015 Aug 17;6:165. PMC4538306.

17. **George EM,** Liu H, Robinson GG, Perkins Eddie, and Bidwell GL III. Growth factor purification and delivery systems (PADS) for therapeutic angiogenesis. Vasc Cell. 2015 Jan 24;7(1):1. PMC4316602.

18. Chinthalapudi K, Rangarajan ES, Patil DN, **George EM**, Brown DT, and Izard T. Lipid binding promotes oligomerization and focal adhesion activity of vinculin. J Cell Biol. 2014 Dec 8;207(5):643-56. PMC4259812.

19. **George, EM.** New Approaches for Managing Preeclampsia: Clues from Clinical and Basic Research. Clin Ther. 2014 Dec 1;36(12):1873-81. PMC4268345.

20. Bidwell GL III and **George EM.** Maternally sequestered therapeutic polypeptides-a new approach for the management of preeclampsia. Frontiers in Pharmacology. 2014 Sep 5;5:201. PMC4155872.

21. **George EM,** Liu H, Robinson GG, and Bidwell GL III. A polypeptide drug carrier for maternal delivery and prevention of fetal exposure. Journal of Drug Targeting. 2014 Dec;22(10):935-47. PMC4227969.

22. Rana S, Rajakumar A, Geahchan C, Salahuddin S, Cerdeira AS, Burke SD, **George EM,** Granger JP, Karumanchi SA. Oubain inhibits placental sFlt-1 production by repressing HSP27-dependent HIF-1α pathway. FASEB J. 2014 Jun 26. PMC4202104.

23. **George EM,** Warrington JP, Spradley FT, Palei AC, Granger JP. The heme oxygenases: Important regulators of pregnancy and preeclampsia. Am J Physiol Regul Integr Comp Physiol. 2014 Jun 4. PMC4187186.

24. **George EM,** Garrett MR, and Granger JP. Placental ischemia induces changes in gene expression in chorionic tissue. Mammalian Genome. 2014 Jun;25(5-6):253-61. PMC4238427.

25. Warrington JP, Coleman K, Skaggs C, Hosick PA, **George EM**, Stec DE, Ryan MJ, Granger JP, Drummond HA. Heme oxygenase-1 promotes migration and β-epithelial Na+ channel expression in cytotrophoblasts and ischemic placentas.Am J Physiol Regul Integr Comp Physiol. 2014 May; 306(9):R641-6. PMC4010664.

26. Warrington JP, Palei AC, Spradley FT, **George EM**, and Granger JP. Recent advances in the understanding of the pathophysiology of preeclampsia. Hypertension. 2013 Oct;62(4):666-73. PMC3856636.

27. **George, EM,** Palei AC, Dent EA, and Granger JP. Sildenafil attenuates placental ischemia induced hypertension. Am J Physiol Regul Comp Physiol. 2013 Aug 15;305(4): R397-403. PMC3833396

28. Palei AC, Spradley FT, Warrington JP, **George EM**, and Granger JP. Pathophysiology of hypertension in pre-eclampsia: a lesson in integrative physiology. Acta Physiol (Oxf). 2013 Apr 16. PMID: 23590594.

29. **George EM**, Stec DE, and Granger JP. Heme oxygenase inhibition increases blood pressure in pregnant rats. Apr 3, 2013. Am J Hypertens. PMC3731822.

30. ***George EM** and Bidwell GL. STOX1: A New Player in Preeclampsia? Hypertension. Jan 28, 2013. PMC4199576.

31. **George EM** and Granger JP. Heme Oxygenase in Pregnancy and Preeclampsia. Curr Opin Nephrol Hypertens. Jan 16, 2013. PMC3829378.

32. Hall JE, Granger JP, do Carmo JM, da Silva AA, Dubinion J, **George EM,** Hamza S, Speed J, Hall ME. Hypertension: Physiology and Pathophysiology. Comprehensive Physiology. Oct 2012. 1;2(4):2393-442. PMID23720252.
33. **George EM**, Granger JP. Linking Placental Ischemia and Hypertension in Preeclampsia: Role of Endothelin 1. Hypertension. 2012 May 7. PMC2401286.

34. **George EM** and Arany I. Induction of heme oxygenase-1 shifts the balance from pro-injury to pro-survival in the placentas of pregnant rats with reduced uterine perfusion pressure. Am J Physiol Regul Integr Comp Physiol. 2012 Mar 1;302(5):R620-6. PMC3311518.

35. **George EM,** Palei AC, and Granger JP. Endothelin as a final common pathway in the pathophysiology of preeclampsia: therapeutic implications. Curr Opin Nephrol Hypertens. 2012 Mar;21(2):157-62. PMC3446253.

36. **George EM,** Colson D, Dixon J, Palei AC, and Granger JP. Heme Oxygenase-1 Attenuates Hypoxia-Induced sFlt-1 and Oxidative Stress in Placental Villi through Its Metabolic Products CO and Bilirubin. Int J Hypertens. 2012;2012:486053. PMC3238375.

37. Ryan MS, Gilbert EL, Glover PH, **George EM**, Masterson CW, McLemore GR Jr, LaMarca B, Granger JP, Drummond HA. Placental ischemia impairs middle cerebral artery myogenic response in the pregnant rat. Hypertension. 2011 Dec;58(6):1126-31. PMC3488858.

38. Speed JS, **George EM**, Arany M, Cockrell K, Granger JP. Role of 20-hydroxyeicosatetraenoic Acid in mediating hypertension in response to chronic renal medullary endothelin type B receptor blockade. PLoS One. 2011;6(10):e26063. Epub 2011 Oct 7. PMC3189228.
39. Hall M.E., **George E.M.,** and Granger J.P. The Heart During Pregnancy. Rev Esp Cardiol. 2011 Nov;64(11):1045-1050. Epub 2011 Oct 1. PMC3802121.

40. **George E.M.,** Arany M., Cockrell K., Storm M.V., Stec D.E., and Granger J.P. Induction of heme oxygenase-1 attenuates sFlt-1-induced hypertension in pregnant rats. Am J Physiol Regul Integr Comp Physiol. 2011 Nov;301(5):R1495-500. Epub 2011 Aug 24. PMC3213946.

41. **George E.M.** and Granger J.P. Endothelin: Key mediator of hypertension in preeclampsia. Am J Hypertens. 2011 Sep;24(9):964-9. Epub 2011 June 6. PMC3388717*.*

42. **George E.M.** and Granger J.P. VEGF: a possible therapeutic for the treatment of preeclampsia? Expert Rev Obstet Gynecol*.* May 2011, Vol. 6, No. 3, Pages 255-257.

43. Speed J.S., Lamarca B., Berry H., Cockrell K., **George EM,** Granger J.P. Renal Medullary Endothelin-1 is Decreased in Dahl Salt Sensitive Rats. Am J Physiol Regul Integr Comp Physiol. 2011 Aug;301(2):R519-23. Epub 2011 May 25. PMC3154719.

44. **George EM** and Granger J.P. Mechanisms and Potential Therapies for Preeclampsia. Current Hypertension Reports. Curr Hypertens Rep. 2011 Aug;13(4):269-75. PMC3788669.

45. Tam Tam KB, **George E**, Cockrell K, Arany M, Speed J, Martin JN Jr, Lamarca B, Granger JP. Endothelin type A receptor antagonist attenuates placental ischemia-induced hypertension and uterine vascular resistance. Am J Obstet Gynecol. 2011 Apr;204(4):330.e1-4. PMC3072697.

46. **George EM,** Cockrell K., Arany M., Csongradi E., Stec D.E., and Granger J.P. Induction of Heme Oxygenase-1 Ameliorates Placental Ischemia-Induced Hypertension. Hypertension. 2011 May;57(5):941-8. Epub 2011 Mar 7. PMC3085942.

47. **George E.M**. and Granger, J.P. Recent Insights into the Pathophysiology of Preeclampsia. Expert Rev Obstet Gynecol. 2010 Sep 1;5(5):557-566. PMC3001629.

48. **George E.M.**, Cockrell K., Adair T.H., and Granger J.P. 2010. Regulation of sFlt-1 and VEGF Secretion by Adenosine Receptor Signaling Under Hypoxic Conditions in Rat Placental Villous Explants. Am J Physiol Regul Integr Comp Physiol. 2010 Oct 20*.* PMC3007189.

49. **George E.M.** and Brown, D.T. Prothymosin α is a Component of a Linker Histone Chaperone. 2010. FEBS Letters. 2010 Jul 2;584(13):2833-6, PMC2898364.

50. **George E.M.**, Izard, T., Anderson, S.D., and Brown, D.T. 2010. The Nucleosome Interaction Surface of Linker Histone H1c is Distinct from that of $H1^0$. Journal of Biological Chemistry. 2010 Jul 2;285(27):20891-6, PMC2891112.

51. Hearst S.M., Gilder A.S., Negi S.S., Davis M.D., **George E.M.,** Whittom A.A., Toyota C.G., Husedzinovic A., Gruss O.J., and Hebert, M.D. 2009. Cajal-body formation correlates with differential coilin phosphorylation in primary and transformed cell lines. The Journal of Cell Science. 2009 Jun 1;122(Pt 11):1872-81, PMC2684838.

52. Meshorer, E., Yellajoshula, D., **George E**, Scambler, P.J., Brown, D.T., and Misteli, T. 2006 Hyperdynamic Plasticity of Chromatin Proteins in Pluripotent Embryonic Stem Cells. 2006. Developmental Cell. 10(1): 105-116. PMC1868458.

Articles:

1. George EM and Granger JP. Hypertension: A new genetic clue to unravel the origins of pre-eclampsia. Nat Rev Nephrol. 2017 Oct;13(10):599-600.

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