

## CURRICULUM VITAE

### Zsolt Bagi, M.D. Ph.D.

**Associate Professor of Physiology**

**Department of Physiology, Medical College of Georgia at Augusta University**

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### EDUCATION

**Doctor of Medicine** (2000), BS/MD Program, Semmelweis University, School of Medicine, Budapest, Hungary

**Ph.D. in Biomedical Sciences** (2004), Semmelweis University, School of Doctoral Studies, Hungary, Supervisor: Akos Koller

**Post Doctoral Training** (2002-2004), Department of Physiology, New York Medical College, Valhalla, New York – Supervisor: Gabor Kaley

### ACADEMIC APPOINTMENTS

**Bolyai Research Fellow & Instructor** (2004-2007), Institute of Cardiology, University of Debrecen School of Medicine, Hungary

**Assistant Professor of Physiology** (2007-2010), Department of Physiology, New York Medical College, Valhalla, New York

**Intermediate Research Fellow** (2010-2012), Department of Pharmacology, University of Oxford British Heart Foundation, Centre of Research Excellence, Oxford, UK

**Senior Research Fellow** (2011-2013) Somerville College, University of Oxford, Oxford, UK

**Associate Professor of Medicine** (2012-2018) Vascular Biology Center and Department of Medicine, Medical College of Georgia at Augusta University, Augusta, GA

**Associate Professor of Physiology** (2018-present) Department of Physiology, Medical College of Georgia at Augusta University, Augusta, GA

**Professor of Physiology** (Tenured effective July 1, 2019) Department of Physiology, Medical College of Georgia at Augusta University, Augusta, GA

### ADMINISTRATIVE RESPONSIBILITIES/APPOINTMENTS

2014 - 2015 **Committee Member** - University Senate, Athletics, Augusta University

2015 - present **Committee Member** – Admissions, University Senate, Medical College of Georgia

### RESEARCH AND TRAINING GRANTS AWARDED

#### Active Research Grants:

**1R01AG054651-01** (MPI: Z. Bagi / D. Rudic) 09/01/2017 – 10/31/2022

NIH/NIA “TACE and Clock mechanisms in aging and vascular stiffening”

Major Goal(s): The goal of this project is to determine aging-related mechanisms through which circadian clock dysfunction causes vascular stiffening. Role: Principal Investigator of MPI grant.

**17GRNT33680171** (Z. Bagi) 07/01/2017 – 06/30/2019

American Heart Association “Adenosine kinase regulation of conducted vasodilation”

Major Goal(s): The goal of this project is to determine the role of adenosine kinase in the development of impaired conducted vasodilation in patients with heart failure. Role: Principal Investigator.

**1R01HL133613-01A1** (MPI: T. Fukai / M. Fukai) 07/01/2017 – 06/30/2022

NIH/NHLBI “Cu Transporting ATPase and Diabetic Vascular Complications”

Major Goal(s): To provide new insight into copper transporter ATP7A as a therapeutic target to cure diabetic vascular complications. Role: Bagi, Co-Investigator.

**1R01HL138749-01** (X. Yang, Temple University)

07/01/2017 – 06/30/2022

“The roles of miR-155 in regulating atherosclerosis and metabolically healthy obesity”

Major Goal(s): To identify roles and mechanisms underlying the deficiency of miR-155 in decreasing endothelial cell activation, vascular inflammation and atherosclerosis and thereby contributing to metabolically healthy obesity. Role: Bagi, Site-PI, Co-Investigator.

#### **Active Training Grant Sponsorship:**

F31HL142183 (PI: Alec Davila, Sponsor: Bagi): 09/30/2018-09/29/2021  
NIH-NHLBI F31 Fellowship – Mechanism of impaired conducted vasodilation in HFpEF

#### **Completed Research Grants:**

- 2014- 2018 **UOXFRD00002** Contract with University of Oxford, UK (N. Sibson)  
Novel targeted contrast agent for early detection of brain metastasis: from animal to patient.  
Role: Bagi, Site-PI, Co-Investigator (research contract).
- 2016-2017 **PSRP00088**-Pilot Study Research Feasibility Award (PI: Bagi), Augusta University  
Research Institution *Novel mechanisms linking coronary microvascular dysfunction with HFpEF.*
- 2016-2017 **ESA0028**-Extramural Success Research Award Bagi (PI: Bagi) Augusta University  
Research Institution, *Aging adipose tissue and coronary artery dysfunction.*
- 2010-2016 **R01HL104126, NIH-NHLBI**, PI: Bagi  
*Flow-induced coronary vasoconstriction in diabetic patients.*
- 2014-2015 Intramural Research Award at Georgia Regents University: Translating  
Cardiovascular Complications of Diabetes (PI Patel, Co-PI Bagi).
- 2007-2012 **PO-HL43023, NIH-NHLBI**, PI: Kaley, Leader of Project 3: Bagi  
*Endothelium and Vascular Function.*
- 2010-2012 **Research Fellowship** by the British Heart Foundation Centre of Research Excellence,  
University of Oxford, UK (PI: Bagi).
- 2010-2011 **Intramural Research Award** at New York Medical College, Valhalla, New York (Castle-  
Krob Fund, PI: Bagi): *Small GTPase and Coronary Arteriolar Dysfunction in Diabetic Patients.*
- 2007-2010 **0735540T Scientist Development Grant** (PI: Bagi) American Heart Association  
*Oxidative stress and diabetes alters AT1 receptor trafficking by caveolae and RhoA leading to enhanced vasoconstriction.*
- 2007-2008 **Zsigmond Diabetes Foundation**, Hungarian Academy of Sciences (PI: Bagi). *Impact of  
diabetes mellitus on cardiovascular function.*
- 2005-2007 **BO/00457/055, Bolyai Fellowship** of the Hungarian Academy of Sciences (PI: Bagi). *Type  
2 diabetes and small coronary artery dysfunction.*
- 2005-2008 **F048837**, Hungarian Scientific Research Foundation, Program Project (PI: Bagi). *Effect of  
metabolic syndrome on vasomotor function of coronary vessels*

#### **Completed Training Grant Sponsorship:**

18PRE34080181 (PI: Alec Davila, Sponsor: Bagi): 07/01/2018-6/30/2020  
American Heart Association Predoctoral Fellowship – Impaired conducted vasodilation in HFpEF  
This award has been relinquished due to receiving NIH Fellowship.

16PRE27550006 (PI: Huijuan Dou, Sponsor: Bagi): 01/01/2016-12/31/2017  
American Heart Association Predoctoral Fellowship – Role of Caveolin-1 in Age-Related  
Activation of ADAM17 in the Adipose Tissue Endothelium.

#### **EDITORIAL BOARD MEMBER**

2018 - present **APSSelect** – Member of Selection Board  
2018- present **Journal of Vascular Research**

2015 - present **Am J Physiology, Heart and Circulatory Physiology, Star Reviewer - 2016**  
 2015 - present **Microcirculation**  
 2013 - 2016 **Biomed Research International**  
 2013 - present **Cardiovascular Pharmacology – Open access**  
 2011 - present **Frontiers in Vascular Physiology**

### **AWARDS/HONORS**

1992 - 2<sup>nd</sup> Place in National Secondary School Academic Competition in Chemistry, Hungary  
 2000 - 1<sup>st</sup> Place, Undergraduate Research Forum Competition, Semmelweis University  
 2001 - Veritas et Virtus Research Award, Semmelweis University  
 2002 - Richter Gedeon Pharmaceutical Research Award, Hungary  
 2003 - Caroline tum Suden/Frances A. Hellenbrandt Award, American Physiological Society  
 2004 - Zweifach Student Award of the American Microcirculatory Society  
 2004 - Young Investigator Travel Award, 8<sup>th</sup> International Symposium on Resistance Arteries  
 2004 - Van Leeuwenhoek Distinctive Travel Award of the European Society for Microcirculation  
 2006 - Best Publication in Clinical Research, University of Debrecen, Hungary  
 2007 - ATVB Merit Award of the American Heart Association  
 2008 - Young Investigator Award of the Hungarian Physiological Society  
 2008 - Bristol-Myers Squibb Young Investigator Award of the American Physiological Society  
 2016 - Star Reviewer, Am J Physiology, Heart and Circulatory Physiology  
 2017 - Fellow of the American Heart Association

### **SCIENTIFIC AND PROFESSIONAL SOCIETIES, LICENSES**

2007 - present **Professional Member** - American Heart Association, ATVB  
 2003 - present **Member** - American Physiological Society  
 2013 - 2016 **Member** - American Diabetes Association  
 2003 - present **Member** - American Microcirculatory Society  
 2018- present **Member** - European Society for Microcirculation  
 2006 - 2010 **Founding Member & Treasurer** - Hungarian Society of Microcirculation  
 2017 **United States Medical Licensing Examination, Step 1 - Passed**

### **COMMUNITY ACTIVITIES**

#### **Grant Per-Review Panel:**

2013 Spring American Heart Association - Vasc Endo Bio 3  
 2014 Spring American Heart Association - Vasc Endo Bio 3  
 2014 October NIH CSR - Invited for ZRG1 CB-G: Inflammation and Aging, Special Emphasis Panel  
 2015 Spring American Heart Association - Vasc Endo Bio 3  
 2016 Spring American Heart Association - Vasc Endo Bio 1  
 2016 Fall American Heart Association - Vasc Endo Bio 1  
 2018 Spring American Heart Association - Vasc Endo Bio 1  
 2018 July NIH CSR - Vascular and Hematology Special Emphasis Panel

### **JOURNAL REVIEWER**

Circulation Research, Arteriosclerosis Thrombosis Vascular Biology, Diabetes, Diabetes Care, American Journal of Physiology, Journal of Applied Physiology, Journal of Vascular Research, British Journal of Pharmacology, Journal of Pharmacology and Experimental Therapeutics. Journal of Molecular Medicine. Endocrinology, Frontiers in Physiology

### **INVITED SEMINARS AND PRESENTATIONS AT NATIONAL MEETINGS**

- Wall shear stress-dependent regulation of arteriolar diameter in diabetes mellitus and
- hyperhomocysteinemia. APS Experimental Biology, The Microcirculatory Society Young Investigator

- Symposium, Washington DC, USA, 2004.
- Impaired Regulation of Arteriolar Diameter in Type 2 Diabetes Mellitus. Department of Physiology, The University Lubeck, Germany, 2005 - invited seminar, Host: Cor de Wit
  - Impact of Diabetes Mellitus on Microvascular Function in Animal Models and Humans. Jagellonian Medical Research Centre. 14th JMRC Symposium. Basic and Clinical Aspects of Endothelial Dysfunction. Krakow, Poland, 2006.
  - Oxidative stress and microvascular dysfunction in type 2 diabetes. Faculty of Medicine, Univ. of Angers, Angers, France, - invited seminar, Host: Daniel Henrion
  - Coronary Microvascular Adaptation in Metabolic Syndrome. Jagellonian Medical Research Centre. 16<sup>th</sup> JMRC Symposium. Krakow, Poland, 2008.
  - Malfunction or adaptation in the microcirculation - controversies in obesity. Conference of European Society for Microcirculation, Budapest, 2008.
  - Targeting the coronary microcirculation in diabetic patients. British Heart Foundation, Centre of Research Excellence Second Annual Symposium, Oxford, United Kingdom, 2010.
  - Development of basic skills in cardiovascular research: Division of Medical Sciences and the Oxford BHF-Centre of Research Excellence, Oxford, England, 2012.
  - Coronary endothelial caveolae and eNOS uncoupling in diabetic patients. The Fall Meeting of the Microcirculatory Society, Hyannis, MA, 2013.
  - Endothelial Caveolae and Coronary Arterial Diameter in Diabetes. Invited Seminar at Tulane University, School of Medicine. New Orleans, 2013. Host: David Busija
  - Peroxynitrite disrupts endothelial caveolae leading to eNOS uncoupling and diminished flow-mediated dilation in coronary arterioles of diabetic patients. Invited Presentation in Kaley Featured Symposium at FASEB meeting, San Diego, CA, 2014.
  - Caveolin-1 is a negative regulator of ADAM17 in the pericardial adipose tissue of elderly patients. The Fall Meeting of the Microcirculatory Society, Monterey, CA, 2014.
  - Caveolar control of microvascular reactivity in health and disease. Medical University of South Carolina. Graduate School Seminar Series. Host: Monika Gooz, 2015.
  - Coronary microvascular inflammation and NO bioavailability. University of Vermont, Department of Pharmacology Host: Benedek Erdos, 2015
  - Small vessels, big problem in the heart and beyond. Tufts Medical Center, Molecular Cardiology Research Institute, Tufts University School of Medicine. Host: Iris Z. Jaffe, 2017.
  - Novel microvascular mechanisms and therapeutic targets in HFpEF. Temple University, Philadelphia, Host: Victor Rizzo, 2018

### **MEETING ORGANIZATION, VISITING PROFESSORSHIPS**

- Visiting Professor (2006), Faculty of Medicine, University of Angers, Angers, France
- Conference of European Society for Microcirculation, Budapest (2008). Treasurer of the Meeting and Symposium Organizer: 'Microcirculation in Obesity - New Aspects'

### **TEACHING EXPERIENCE**

#### **Membership in Graduate Faculty**

- 2005-2010 School of Medicine, University of Debrecen, Debrecen, Hungary  
 2010-2013 Graduate School, New York Medical College, Valhalla, NY  
 2013-present The Graduate School, Augusta University, Augusta, GA

#### **Course Director**

- 2005-2008 Clinical Pathophysiology, University of Debrecen, School of Medicine, Hungary  
 2014-2018 Fundamentals in Vascular Biology. The Graduate School, Augusta University, Vascular Biology Program.  
 2018-present Responsible Conduct of Research. The Graduate School, Augusta University.

**Undergraduate (including BS/MD) Level Teaching:**

- 2004-2007: University of Debrecen, School of Medicine, Debrecen, Hungary, Clinical Physiology 12 lectures on Cardiovascular pathophysiology and neurology.
- 2007-2010: Department of Physiology, New York Medical College, Valhalla, New York, Course and Practical on Cardiovascular Physiology.
- 2010-2012: Magdalen College, Oxford, UK, Part time Tutor in Cardiovascular physiology
- 2010-2012: Department of Pharmacology, University of Oxford, UK, 4 lectures/term on Cardiovascular Pharmacology.

**Graduate Level & Medical School Teaching:**

- 2004-2007: School of Medicine, University of Debrecen, 15 Lectures/year in cardiovascular pathophysiology.
- 2007-2012: Graduate School, New York Medical College, Valhalla, New York, Course in cardiovascular physiology/directed readings, 2 lectures/year.
- 2013-present: The Graduate School, Medical College of Georgia, Course Director, Fundamentals in Vascular Biology, 6 Lectures/year
- 2013-2018: The Graduate School, Medical College of Georgia, 2 Lectures/year, Frontiers in Vascular Biology
- 2012-present: The Graduate School, Medical College of Georgia, 6 Lectures/year in BIOM 8033
- 2018-present: The Graduate School, Medical College of Georgia, 1 Lecture/year in Responsible Conduct of Research
- 2018-present: Medical College of Georgia, MS Year 1&2 MD Facilitator, Patient Based Learning, 5 lectures/class/week throughout Fall and Spring Semesters.

**Thesis Supervisor (Name & Current Position):****University of Debrecen, School of Medicine, Debrecen, Hungary**

- Graduate advisor to **Nora Erdei**, 2004-2007 (Cardiologist, University of Debrecen)
- Graduate advisor to **Ibolya Rutkai**, 2004-2007 (Res. Assistant Professor, Tulane University)
- Graduate advisor to **Timea Beleznai**, 2008-2010 (Postdoctoral Fellow, University of Oxford)
- Graduate advisor to **Tibor Fulop**, 2008-2010 (Chief Cardiologist, University of Debrecen)
- Graduate advisor to **Csaba Kiraly**, 2008-2009 (Chief Cardiologist, University of Debrecen)
- Graduate advisor to **Attila Feher**, 2008-2011 (Cardiology Fellow, Yale University)

**Graduate School New York Medical College, Valhalla, New York**

- MD/PhD Graduate advisor to **James Cassuto**, 2010-2013 (Fellow, Jackson Memorial)

**University of Oxford, Oxford, UK**

- Graduate advisor to **ME Zulfazley**, 2011-2012

**The Graduate School, Augusta University, GA**

- Graduate advisor to **Huijuan Dou**, 2013-2017 (Postdoctoral Fellow, Columbia University)
- MD/PhD Graduate advisor to **Alec Davila**, 2015-present
- Graduate advisor to **Stephanie Christianson**, 2017-2018
- Graduate advisor to **Yanna Tian**, 2018-present

**Postdoctoral Fellows and Research Scientists (Name & Current Position):**

- Eva Jebelovszki** 2007-2009 Cardiologist, Department of Medicine and Cardiology  
University of Szeged, Szeged, Hungary.
- Andras Szabo** 2011-2013 Research Assistant, Sanford-Burnham Medical Research  
Institute, Orlando, FL
- Marta Balogh** 2008-present Research Associate, Dept. of Physiology, MCG, AU
- Attila Feher** 2008-2013 Resident M.D., Department of Medicine, Weill Cornell  
Medical College, New York, NY and currently Cardiology  
Fellow at Yale University
- Maritza Romero** 2013-2015 Junior Research Scientist, Vascular Biology Center, MCG

<b>Eby Mosieri</b>	2013-2015	Fellow, Family Medicine, MCG
<b>Zuzana Broskova</b>	2012-2015	Postdoctoral Fellow, Vascular Biology Center, MCG
<b>Tomoka Morita</b>	2014-2015	Visiting Scholar, Kitasato University, Japan
<b>Istvan Czikora</b>	2018-present	Assistant Research Scientist, Dept. of Physiology, MCG, AU

### Undergraduate Students & Medical Research Scholars

2014	Alan-Michael Bresch (GRU, Graduate School, Summer STAR student)
2015	Carter Reed (GRU, Graduate School, Summer STAR student)
2016	Nicholas Weinand (GRU, Graduate School, Summer STAR student)
2018	Amanda Weissman (Medical Research Scholar, 2018)

### PUBLICATIONS IN REFEREED JOURNALS

**82 per reviewed publications in chronological order, Citations: 4100, h-index: 37**

#### Original Research Articles

1. Ungvari Z, Sarkadi-Nagy E, **Bagi Z**, Szollár L, Koller A, Simultaneously increased TxA2 activity in isolated arterioles and platelets of rats with hyperhomocysteinemia *Arteriosclerosis Thromb Vasc Biol.* 20:1203-1208. 2000.
2. Pacher P, **Bagi Z**, Lako-Futo Z, Ungvari Z, Nanasi P, Kecskemeti V, Cardiac electrophysiological effects of citalopram in guinea pig papillary muscle comparison with clomipramine *General Pharmacology* 34 17-23. 2000.
3. **Bagi Z**, Ungvari Z, Szollár L, Koller A, Flow-induced constriction in arterioles of hyperhomocysteinemic rats is due to impaired nitric oxide and enhanced thromboxane A2 mediation *Arteriosclerosis Thromb Vasc Biol.* 21:233-237. 2001.
4. **Bagi Z**, Ungvari Z, Koller A, Xanthine oxidase-derived reactive oxygen species convert flow-induced arteriolar dilation to constriction in hyperhomocysteinemia. Possible role of peroxynitrite. *Arteriosclerosis Thromb Vasc Biol.* 22:28-33; 2002.
5. Ungvari Z, Csiszar A, **Bagi Z**, Koller A, Impaired nitric oxide-mediated flow-induced coronary dilation in hyperhomocysteinemia. Morphological and functional evidence for increased peroxynitrite formation *Am. J. Pathology* 161:145-153, 2002.
6. Magyar J, Banyasz T, **Bagi Z**, Pacher P, Szentandrassy N, Fulop L, Kecskemeti V, Nanasi PP. Electrophysiological effects of risperidone in mammalian cardiac cells. *Naunyn Schmiedeberg's Arch Pharmacol.* 366(4):350-6. 2002.
7. Koller A, **Bagi Z**. On the role of mechanosensitive mechanisms eliciting reactive hyperemia. *Am J Physiol Heart Circ Physiol.* 283(6): H2250-9. 2002.
8. **Bagi Z**, Koller A. Lack of NO-mediation of flow-dependent arteriolar dilation in diabetes mellitus is restored by sepiapterin. *J Vasc Res.* 40(1):47-57. 2003.
9. **Bagi Z**, Hamar P, Antus B, Rosivall L, Koller A. Chronic Renal Failure Leads to Reduced Flow-Dependent Dilation in Isolated Rat Skeletal Muscle Arterioles due to Lack of NO-mediation. *Kidney Blood Press Res.* 26(1):19-26. 2003.
10. **Bagi Z**, Koller A, Kaley G. Superoxide-NO interaction decreases flow- and agonist-induced dilations of coronary arterioles in Type 2 diabetes mellitus. *Am J Physiol Heart Circ Physiol.*

285(4):H1404-10, 2003

11. **Bagi Z**, Cseko C, Toth E, Koller A. Oxidative stress-induced dysregulation of arteriolar wall shear stress in hyperhomocysteinemia is prevented by vitamin-c treatment. *Am J Physiol Heart Circ Physiol.* 285:H2277-2283, 2003.
12. **Bagi Z**, Koller A, Kaley G. Peroxisome proliferator-activated receptor-gamma activation, by reducing oxidative stress increases NO bioavailability in coronary arterioles of mice with type 2 diabetes. *Am J Physiol Heart Circ Physiol.* 286(2):H742-8. 2004.
13. **Bagi Z**, Toth E, Koller A, Kaley G. Microvascular dysfunction following transient high glucose is caused by superoxide-dependent reduction in the bioavailability of NO and BH4. *Am J Physiol Heart Circ Physiol.* 287(2):H626-33. 2004.
14. Pemberton CJ, Tokola H, **Bagi Z**, Koller A, Pöntinen J, Ola A, Vuolteenaho O, Szokodi I, Ruskoaho H. Ghrelin induces vasoconstriction in the rat coronary vasculature without altering cardiac peptide secretion. *Am J Physiol Heart Circ Physiol.* 287(4):H1522-9. 2004.
15. Csekő C, **Bagi Z**, Koller A. Biphasic modulation of arteriolar myogenic tone by hydrogen peroxide via activation of several signaling pathways. *J of Applied Physiol* 97(3):1130-7. 2004.
16. Koller A and **Bagi Z**, Nitric oxide and hydrogen peroxide contribute to the reactive dilation of isolated coronary arterioles. *Am J Physiol Heart Circ Physiol.* 287(6):H2461-7. 2004.
17. Toth A, Boczan J, Kedei N, Lizanecz E, **Bagi Z**, Papp Z, Edes I, Csiba L, Blumberg PM. Expression and distribution of vanilloid receptor 1 (TRPV1) in the adult rat brain. *Brain Res Mol Brain Res.* 135(1-2):162-168. 2005
18. **Bagi Z**, Frangos JA, Yeh JC, White CR, Kaley G, Koller A. PECAM-1 mediates NO-dependent dilation of arterioles to high temporal gradients of shear stress. *Arterioscler Thromb Vasc Biol.* 25(8):1610-6. 2005.
19. **Bagi Z**, Erdei N, Toth A, Li W, Hintze TH, Koller A, Kaley G Type 2 diabetic mice have increased arteriolar tone and blood pressure. Enhanced release of COX-2-derived constrictor prostaglandins. *Arterioscler Thromb Vasc Biol.* 25(8):1590-5.2005.
20. Lizanecz E, **Bagi Z**, Pasztor ET, Papp Z, Edes I, Kedei N, Blumberg PM, Toth A. Phosphorylation dependent desensitization of vanilloid receptor-1 (TRPV1) function in rat skeletal muscle arterioles and in CHO-TRPV1 cells by anandamide. *Mol Pharmacol.* 69(3):1015-23. 2006.
21. **Bagi Z**, Hamar P, Kardos M, Koller A, lack of flow mediated dilation and enhanced angiotensin ii-induced constriction in skeletal muscle arterioles of lupus-prone autoimmune mice. *Lupus* 15(6), 326-334(9), 2006.
22. Erdei N, Papp Z, Pollesello P, Edes I, **Bagi Z**. The levosimendan metabolite OR-1896 elicits vasodilation by activating the K(ATP) and BK(Ca) channels in rat isolated arterioles. *Br J Pharmacol.* 2006;148(5):696-702.
23. Erdei N, Toth A, Pasztor ET, Papp Z, Edes I, Koller A, **Bagi Z**. High-fat diet-induced reduction in nitric oxide-dependent arteriolar dilation in rats: role of xanthine oxidase-derived superoxide anion. *Am J Physiol Heart Circ Physiol.* 2006;291(5):H2107-15.
24. Szerafin T, Erdei N, Fulop T, Pasztor ET, Edes I, Koller A, **Bagi Z**. Increased cyclooxygenase-2

- expression and prostaglandin-mediated dilation in coronary arterioles of patients with diabetes mellitus. *Circ Res.* 2006;99(5):e12-7.
25. Erdei N, **Bagi Z**, Edes I, Kaley G, Koller A. H<sub>2</sub>O<sub>2</sub> increases production of constrictor prostaglandins in smooth muscle leading to enhanced arteriolar tone in Type 2 diabetic mice. *Am J Physiol Heart Circ Physiol.* 292(1):H649-56. 2007.
  26. Molnar A, Toth A, **Bagi Z**, Papp Z, Edes I, Vaszily M, Galajda Z, Papp JG, Varro A, Szuts V, Lacza Z, Gero D, Szabo C. Activation of the Poly(ADP-Ribose) Polymerase Pathway in Human Heart Failure. *Mol Med.* 2006;12(7-8):143-152.
  27. Toth J, Racz A, Kaminski PM, Wolin MS, **Bagi Z**, Koller A. Asymmetrical dimethylarginine inhibits shear stress-induced nitric oxide release and dilation and elicits superoxide-mediated increase in arteriolar tone. *Hypertension.* 49(3):563-8. 2007.
  28. Fulop T, Jebelovszki E, Erdei N, Szerafin T, Forster T, Edes I, Koller A, **Bagi Z**. Adaptation of Vasomotor Function of Human Coronary Arterioles to the Simultaneous Presence of Obesity and Hypertension. *Arterioscler Thromb Vasc Biol.* 2007. 27(11):2348-54.
  29. Toth E, Racz A, Toth J, Kaminski PM, Wolin MS, **Bagi Z**, Koller A. Contribution of polyol pathway to arteriolar dysfunction in hyperglycemia. Role of oxidative stress, diminished NO and enhanced PGH<sub>2</sub>/TXA<sub>2</sub> mediation. *Am J Physiol Heart Circ Physiol.* 2007. 293(5):H3096-104.
  30. Kark T, **Bagi Z**, Lizanecz E, Pasztor ET, Erdei N, Czikora A, Papp Z, Edes I, Porszasz R, Toth A. Tissue specific regulation of microvascular diameter: opposite functional roles of neuronal and smooth muscle located vanilloid receptor-1 (TRPV1). *Mol Pharmacol.* 2008 May;73(5):1405-12. Epub 2008 Feb 6.
  31. Jebelovszki E, Kiraly C, Erdei N, Feher A, Pasztor ET, Rutkai I, Forster T, Edes I, Koller A, **Bagi Z**. High Fat Diet-induced Obesity Leads to Increased NO Sensitivity of Rat Coronary Arterioles: Role of Soluble Guanylate Cyclase Activation. *Am J Physiol Heart Circ Physiol.* 2008 Jun;294(6):H2558-64.
  32. **Bagi Z**, Erdei N, Koller A. High intraluminal pressure upregulates arteriolar constrictions to angiotensin II by increasing the functional availability of AT1 receptors. *Am J Physiol Heart Circ Physiol.* 2008 Aug;295(2):H835-41.
  33. Racz A, Veresh Z, Erdei N, **Bagi Z**, Koller A. Thromboxane A<sub>2</sub> contributes to the mediation of flow-induced responses of skeletal muscle venules: Role of Cyclooxygenases 1 and 2. *J Vasc Res.* 2009 Jan 21;46(5):397-405.
  34. Rutkai I, Feher A, Erdei N, Henrion D, Papp Z, Edes I, Koller A, Kaley G, **Bagi Z**. Activation of Prostaglandin E<sub>2</sub> EP1 Receptor Increases Arteriolar Tone and Blood Pressure in Mice with Type 2 Diabetes. *Cardiovasc Res.* 2009;83(1):148-54.
  35. Racz A, Veresh Z, Lotz G, **Bagi Z**, Koller A. Cyclooxygenase-2 derived thromboxane A<sub>2</sub> and reactive oxygen species mediate flow dependent constrictions of venules in hyperhomocysteinemia. *Atherosclerosis.* 2010 Jan;208(1):43-9.
  36. Ungvari ZI, Labinsky N, Mukhopadhyay P, Pinto JT, **Bagi Z**, Ballabh P, Zhang C, Pacher P, Csiszar A. Resveratrol attenuates mitochondrial oxidative stress in coronary arterial endothelial cells. *Am J Physiol Heart Circ Physiol.* 2009 Nov;297(5):H1876-81.



37. Retailleau K, Belin de Chantemèle EJ, Chanoine S, Guihot AL, Vessières E, Toutain B, Faure S, **Bagi Z**, Loufrani L, Henrion D. Reactive oxygen species and cyclooxygenase 2-derived thromboxane A2 reduce angiotensin II type 2 receptor vasorelaxation in diabetic rat resistance arteries. *Hypertension*. 2010 Feb;55(2):339-44.
38. Feher A, Rutkai I, Beleznai T, Ungvari Z, Csiszar A, Edes I, **Bagi Z**. Caveolin-1 limits the contribution of BK(Ca) channel to EDHF-mediated arteriolar dilation: implications in diet-induced obesity. *Cardiovasc Res*. 2010 Sep 1;87(4):732-9.
39. Ungvari Z, **Bagi Z**, Feher A, Recchia FA, Sonntag WE, Pearson K, de Cabo R, Csiszar A. Resveratrol confers endothelial protection via activation of the antioxidant transcription factor Nrf2. *Am J Physiol Heart Circ Physiol*. 2010 Jul;299(1):H18-24.
40. Prieto D, Kaminski PM, **Bagi Z**, Ahmad M, Wolin MS. Hypoxic relaxation of penile arteries: involvement of endothelial nitric oxide and modulation by reactive oxygen species. *Am J Physiol Heart Circ Physiol*. 2010 Sep;299(3):H915-24.
41. Beleznai T, Feher A, Spielvogel D, Lansman SL, **Bagi Z**. Arginase 1 contributes to diminished coronary arteriolar dilation in patients with diabetes. *Am J Physiol Heart Circ Physiol*. 2011 Mar;300(3):H777-83.
42. **Bagi Z**, Feher A, Cassuto J, Akula K, Labinsky N, Kaley G, Koller A. Increased availability of angiotensin AT(1) receptors leads to sustained arterial constriction to angiotensin II in diabetes - role for Rho-kinase activation. *Br J Pharmacol*. 2011 Jul;163(5):1059-68.
43. Jefferson A, Wijesurendra RS, McAteer MA, Digby JE, Douglas G, Bannister T, Perez-Balderas F, **Bagi Z**, Lindsay AC, Choudhury RP. Molecular imaging with optical coherence tomography using ligand-conjugated microparticles that detect activated endothelial cells: Rational design through target quantification. *Atherosclerosis*. 2011 Dec;219(2):579-87.
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