

## Leah J. Siskind, Ph.D.

### CURRICULUM VITAE

Associate Professor  
Department of Pharmacology and Toxicology  
Member of the James Graham Brown Cancer Center  
University of Louisville Medical Center  
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#### **Education**

- 1994-1998 University of Maryland College Park  
College of Chemical and Life Sciences  
B.S. in Neurobiology and Physiology (1998)  
College Park, MD
- 2000-2003 University of Maryland College Park  
Department of Biology  
Ph.D. Biology (2003)

#### **Pre- and Postdoctoral Training**

- 2000-2003 National Institutes of Health NRSA Pre-doctoral Research Fellow  
University of Maryland  
Department of Biology, (Mentor, Marco Colombini, Ph.D.)  
College Park, MD  
Research Areas: membrane biophysics, ion channel structure and function
- 2003-2006 Postdoctoral Fellow (Laboratory of Marco Colombini, Ph.D.)  
University of Maryland  
Department of Biology  
College Park, MD  
Research Areas: membrane biophysics, mitochondria-mediated apoptosis,  
ceramide channel regulation by anti-apoptotic Bcl-2 proteins
- 2007-2008 Postdoctoral Fellow (Laboratory of Lina Obeid, M.D.)  
Medical University of South Carolina  
Department of Medicine, General Internal Medicine/Geriatrics  
Charleston, SC  
Research Areas: mitochondria-mediated apoptosis, sphingolipid metabolism and  
signaling, acute renal failure

#### **Professional Employment**

- 1994-1998 Undergraduate Research Assistant  
University of Maryland College Park, Department of Cell Biology and Molecular  
Genetics, College Park, MD  
Research areas: Nematology and Plant Pathology
- 1998-2000 Faculty Research Assistant  
University of Maryland College Park, Department of Entomology

- College Park, MD  
Research Areas: Nematology and Integrated Pest Management
- 1999-2000 Graduate Teaching Assistant  
University of Maryland College Park, College of Chemical and Life Sciences,  
Department of Biology, College Park, MD  
Courses taught: Neurophysiology, Cell Physiology, Genetics, Principles of Biology
- 2008-2011 Research Assistant Professor  
Medical University of South Carolina  
Department of Medicine  
Division of General Internal Medicine/Geriatrics, Charleston, SC  
Research Areas: mitochondria-mediated apoptosis, sphingolipid metabolism and signaling, renal aging, nephrotoxicity and nephropathy, lupus nephritis
- 1/2009-3/2012 Research Health Scientist  
Biomedical Laboratory R&D Research Career Development Awardee  
Research and Development Service  
Ralph H. Johnson Veteran Affairs Medical Center  
Charleston, SC
- 1/2012-6/30/2013 Assistant Professor (Tenure Track)  
Medical University of South Carolina  
Charleston, SC  
South Carolina College of Pharmacy  
Department of Drug Discovery and Biomedical Sciences  
Research Areas: mitochondria-mediated apoptosis, the role of glycosphingolipids in the induction of inflammatory signaling pathways in kidney diseases (acute kidney injury, chronic kidney disease, and lupus nephritis)
- 2011-6/30/2013 Joint Assistant Professor, Tenure Track  
Medical University of South Carolina  
Department of Medicine  
Divisions of Rheumatology/ Immunology and General Internal Medicine/Geriatrics  
Medical University of South Carolina, Charleston, SC  
Research Areas: mitochondria-mediated apoptosis, the role of glycosphingolipids in the induction of inflammatory signaling pathways in kidney diseases (acute kidney injury, chronic kidney disease, and lupus nephritis)
- 2011-6/30/2013 Joint Assistant Professor, Tenure Track  
Department of Biochemistry and Molecular Biology  
Medical University of South Carolina, Charleston, SC
- 2011-6/30/2013 Full Member of the Graduate Faculty  
Medical University of South Carolina, Charleston, SC
- 7/1/2013- present Associate Professor, Tenure Track  
Department of Pharmacology and Toxicology  
University of Louisville Medical Center, Louisville, KY

### **Teaching Experience**

1999-2000 Graduate Research Assistant, University of Maryland College Park, College of Chemical and Life Sciences, Courses Taught: Neurophysiology, Cell Physiology, Principles of Genetics, and Principles of Biology

2008 MUSC BMB 605A “Mechanisms of Aging and Lifespan” (BMB 605A), Taught section of course on caloric restriction. I received the highest scores on student evaluations of all participating instructors.

2012, Co-taught (with Levi J. Beverly, Ph.D., University of Louisville) a short course entitled “Orchestrating the mitochondrial symphony of life and death in cancer biology” to the Ph.D. program in Molecular Oncology, Experimental Immunology and Development of Innovative Therapies at the University of Cantanzaro in Italy. Lecture Topics Included: cell death pathways, mitochondrial bioenergetics and dynamics, BCL2 proteins, lipid metabolism, animal models in cancer research, and cancer therapeutics. November 5 – 9<sup>th</sup> 2012.

2013, Important Unanswered Questions, 2 hours of lecture, Graduate School First-year curriculum, Medical University of South Carolina, February 4, 2013.

2014, Course Coordinator, Selective Toxicity and Chemotherapy, PHTX 658, University of Louisville, Department of Pharmacology and Toxicology

2014 Pharmacology and Dental Therapeutics, University of Louisville, 1 contact hour lecture on diuretics

2014 Medical Pharmacology, University of Louisville Medical School, 3 contact hours, diuretics (2) and serotonin agonists and antagonists (1)

### **Mentoring Experience**

Sara Garrett, doctoral thesis committee member (Mentor Rick Schnellmann, Ph.D.), 2012 - present

Clayton Scott Lewis, doctoral thesis committee member (Mentor Charles Smith, Ph.D.) 2012 - present

Sean Jesinkey doctoral thesis committee member (Mentor Rick Schnellmann, Ph.D.) 2012 – present

Kathryn M. Appleton, doctoral thesis committee member (Mentor Yuri Peterson, Ph.D.) 2012 - present

Eva Karam, masters thesis committee member (Mentor John Zhang, Ph.D.) 2012 - present

Janet Saunders, doctoral thesis committee member (Mentor Rick Schnellmann, Ph.D.) 2010 – present

Jennifer Scott, doctoral thesis committee member (Mentor Gary Gilkeson, MD) 2012-present

Justin Snider, M.S., masters thesis committee member (Mentor Jacek Bielawski, Ph.D.) 2011-2012, M.S. awarded 2012

Andrew R. Mather, Master’s Student (Role, Mentor), 2011-2012, M.S. awarded 2012

Alessandra Metelli, doctoral student (Role, Mentor), 2012 – 2013

Morgan Stathem, Master’s Student (Role, Mentor), 2012 – 2014

Lauren Howell, undergraduate research assistant (Role, mentor for undergraduate research project), 2012-2013

Subathra Marimuthu, Senior Research Scientist (Role, mentor), 2012-present

Kumaran Sundaram, Senior Research Scientist (Role, Mentor), 2013-present

Tess Dupre, doctoral student (Role, mentor), 2013- present

Cierra Sharp, doctoral student (Role, mentor)

Cameron Conway, Co-Op Student in the Speed School of Engineering (Role, mentor), 2014-present

Samantha Manning, Co-Op Student in the Speed School of Engineering (Role, mentor), 2014  
Gauri Patwardhan, Post-doctoral fellow (Role, mentor), 2014-present  
Doug Saforo, MD/ PhD student (Role, mentor for summer rotation), 2014  
Veronica Massey, doctoral thesis committee member (Mentor Gavin Arteel, Ph.D.) 2014  
Nicole Jackson, doctoral thesis committee member (Mentor, Brian Ceresa, Ph.D.) 2014-present

### **Honors/Awards**

2000	Graduate Teaching Assistant of the Year, University of Maryland
2000	Travel fellowship, Goldhaeber award, University of Maryland, \$500
2002	Keystone Symposia Travel Award, \$1,000
2003	Biophysical Society Young Bioenergeticist Award \$250
2003	Graduate Student Research Achievement Award, University of Maryland College Park, Department of Biology, \$250
2003	One of 35 U.S. graduate students selected to attend the Annual Meeting of the Nobel Laureates in Landau, Germany
2006	Keystone Symposia Travel Award, \$1,000
2007	Selected to attend the 15 <sup>th</sup> Annual Barshop Institute Summer Training Course in Experimental Aging Research, June 16 <sup>th</sup> -22 <sup>nd</sup> 2007, San Antonio, TX
2008	Charleston Workshop in Light Microscopy, May 18-23 <sup>rd</sup> 2008, \$500 scholarship
2009	South Eastern Regional Lipid Conference Poster Award
2009-2012	U.S. Department of Veterans Affairs, Biomedical Laboratory R&D Service, Office of Research & Development, Research Career Development Award, Wash, DC (Full-time VA salary + \$50,000/year project support)
2012	Medical University of South Carolina, Developing Scholar Award, \$3,000

### **Professional Memberships**

2001-2009	Biophysical Society Member, Bioenergetics, Subgroup Member
2003-2007	American Society for Cell Biology, Member
2010-Present	American Society for Biochemistry and Molecular Biology, Member
2013	Center of Aging Research, Medical University of South Carolina, Executive Committee Member

### **Editorial Boards**

*Ad hoc* reviewer for the following journals: *PNAS*, *Journal of Biological Chemistry*, *Apoptosis*, *Current Molecular Biology*, *International Journal of Cancer*, *PLoS One*, *Journal of Lipid Research*  
Associate Academic Editorial Board Member, *PLoS One*

### **Professional Activities/Grant Reviewer:**

#### **Department of Veterans Affairs**

Member of the VAMC REAP in Inflammatory Mediators of Renal Disease: 2007-2013  
Member of the VAMC Biosafety Committee: 2009-2013

#### **Other Federal Agencies**

*Ad hoc* grant reviewer for the National Science Foundation: 2009

Temporary member of the Pathobiology of Kidney Disease (PBKD) Study Section, Center for Scientific Review, NIH (October 2011)

*Ad hoc* grant reviewer for NIH, Small Business: Bioengineering Research Grants in Nephrology Study Section, November 12, 2013

*Ad hoc* grant reviewer for NIH, Cancer Drug Development and Therapeutics (CDDT) Study Section, March 2015

### **Teaching Related Activities:**

#### **Courses organized, directed, co-directed, section directed, etc.**

Course Director, PHTX 658-01: Selective Toxicity Fall 2014

#### **Participation and lectures in formal courses**

6 hours of lecture in PHTX 658-01: Selective Toxicity Fall 2014

Medical Pharmacology, University of Louisville Medical School, 3 hours of lecture, 4 hours of flipped classroom preparation, Fall 2014, Spring 2015

#### **Teaching conferences:**

Attended: Leveraging the Flipped Classroom as a Pedagogical Tool in Health Science Education, 8/28/2014, 12-1PM, Delphi Center for Teaching and Learning

#### **Academic Affiliate**

Member of the Basic Science Operations Committee for the Department of Medicine at MUSC: 2008-2013

Member of the Medical University of South Carolina, Mitochondrial Interest Group: 2007- 2013

Member of the Medical University of South Carolina, Hollings Cancer Center, Lipid Signaling in Cancer Research Program: 2009 - 2013

Member of the COBRE in Lipidomics and Pathobiology, 2010 - 2013

Member of the Medical University of South Carolina, Graduate Faculty, 2011 - 2013

Member of the Executive Committee, Center of Aging Research, Medical University of South Carolina, 2013

Member of the MD/PhD Selection Committee, University of Louisville, 2013 - 2015

Member of the External Faculty Search Committee, Department of Pharmacology and Toxicology, University of Louisville, 2014

Chair of the Internal Faculty Search Committee, Department of Pharmacology and Toxicology, University of Louisville, 2014

Co-Founder of the University of Louisville MD/PhD Program Women in Science Mentor Program, 2014

#### **Research Grant Support**

##### **Active**

NIH/NIDDK (R01) DK093462

**Siskind (PI)**

\$217,500 (Annual DC)

*Targeting Ceramide-Induced Kidney Cell Apoptosis and Necrosis for the Treatment of Acute Kidney Injury*

09/17/2012-04/30/2017

Goals: This grant aims to determine the role of specific ceramide species in the induction of kidney cell apoptosis and necrosis *in vitro* as well as *in vivo* in a mouse model of chemotherapy-induced acute kidney injury.

**Pending/ Submitted**

NIH/NIDDK (R01) 1R01DK101813-01A1 Siskind (PI) \$466,338 (Annual DC)

Glycosphingolipids as targets for the development of novel therapeutics for the treatment of diabetic Nephropathy

4/1/2015-3/31/2009

Goals: This grant aims to determine the mechanism by which hyperglycemia and glycosphingolipids induce hypertrophy of mesangial cells and cell death of proximal tubule cells through *in vitro* studies in cultured cells and *in vivo* studies utilizing a transgenic mouse model and a pharmacologic inhibitor of glucosylceramide synthase.

NIH/NCI 1R21CA191681-01A1 Siskind and Beverly (PI)

Sphingolipid metabolic regulators as drivers and targets of AML

Project period: 7/01/2015-6/30/2017

Total direct costs: \$275,000

The main goal of this proposal is to use functional genetic screen to identify novel drivers and therapeutic targets for the treatment of drug refractory AML. We will interrogate genes that encode proteins involved in sphingolipid metabolism.

NIH/NCI 1U01CA199214-01

Clark, Beverly, and Siskind (Co-PIs)

Total Direct Costs: \$1,739,340

Project Period: 7/1/2015-6/30/2019

Identifying physiologically relevant RAS synthetic lethal components

The goal of this project is to identify proteins which are essential for the ability of the K-Ras oncoprotein to drive cancer to allow for effective indirect anti-Ras therapy. This could lead to new treatments and cures for at least 30% of lung cancer and could be broadly applicable to other Ras driven cancers such as pancreatic. This proposal employs biological systems designed to maximize the physiological relevance of targets identified. We propose to utilize primary human tumor grafts containing activated K-Ras and inducible shRNA libraries grown in physiological settings *in vitro* and *in vivo* to identify novel synthetic lethal components of Ras transformation. These experiments include assays to identify proteins essential for metastasis of Ras driven tumors, as metastasis is the usual cause of death. They also include the use of novel swine based models of cancer, as pigs are much closer to humans in their cancer genetics and biochemistry than mice.

**Completed**

NIH/NCRR P20 RR17677 Obeid (PI) \$75,000 (Annual DC to Siskind)

COBRE in Lipidomics and Pathobiology

Pilot Project Title: *Role of Lactosylceramide in Renal Aging and Renal Disease*

07/01/2010-06/30/2012

Goal: This is a grant to establish a center of excellence in Lipidomics and Pathobiology and to support MUSC investigators in their efforts to understand the role of a class of fatty molecules, known as sphingolipids in regulating cell growth, cell death and cell aging.

Role: Principal Investigator for Pilot Project

AFAR Research Grant Siskind (PI) \$100,000

Agency: American Federation for Aging Research

*Regulation of Kidney Glycosphingolipid Metabolism by Caloric Restriction During Aging*

07/01/2011-07/31/2012

Goals: to support aging research conducted by young independent investigators for the development of innovative projects for major competitive funding in the form of a NIH R01. Dr. Siskind's project aims to determine the mechanism by which CR depletes glycosphingolipids in the kidney.

Department of Veterans Affairs                      **Siskind (PI/Awardee)**      \$142,300 (Annual DC)  
BLRD Career Development Award-Level 2

*Role of Ceramide in Aging Related Diseases*

01/01/2009-03/31/2012

Goal: A research career development award for retraining in kidney pathology and physiology for the purpose of determining the mechanism(s) by which ceramide induces renal cell death for the long-term goal of developing novel therapeutics to protect the aging kidney from nephrotoxic insults.

American Cancer Society                              **Siskind (PI)**                      \$30,000 (Annual DC)

Institutional Research Grant

*Targeting BAK Regulation of Ceramide Synthases for the Development of Novel Cancer Therapeutics*

01/01/2010-12/31/2011

Goals: (1) to determine which ceramide synthase isoforms are regulated by BAK and (2) to determine if BAK is a direct regulator of ceramide synthases.

Department of Veterans Affairs, ORD      Raymond/Gilkeson (Co-PIs)      \$10,000 (Annual DC to Siskind)  
Research Enhancement Award Program

REAP Title -- *Inflammatory Mediators of Renal Disease*

Pilot Project Title: *The Role of Glycosphingolipids and Sterol Regulatory Element Binding Proteins in Lupus Nephritis*

07/01/1998-12/31/2011

Pilot Project Periods: 2010-2011

Goal: This is a training grant that currently supports three fellows, and has supported eight renal fellows and a Rodent Physiology Core since its inception. These funds are available to eight qualifying VA investigators to support a total of three fellow trainees in renal research at any time. Dr. Siskind received support for this pilot project in 2010 to investigate the regulation of sphingolipid metabolism in the pathology of renal disease.

Role: Pilot Project PI

Abney Foundation Scholarship Award                      **Siskind (PI/Awardee)**                      Stipend

MUSC Hollings Cancer Center

07/01/2007-06/30/2008

*Mechanisms for Mitochondrial Ceramide Generation and Action: A Potential Target for the Development of Novel Anti-Cancer Drugs*

Goal: The Abney Foundation Scholarship provides a small, one-year stipend to individuals wishing to perform studies involving basic cancer, translational or prevention control research. It is open to medical students, graduate students or postdoctoral fellows.

Role: PI/Awardee

NIH/NIA RO1-AG-16583 Obeid (PI) \$250,000 (Annual DC)

*Mitochondrial Ceramide in Chemotherapy-Induced Apoptosis*

9/01/2005-08/31/2010

Goal: (1) to determine mechanisms of ceramide generation and its regulation in mitochondria. (2) to determine the mechanisms by which mito-ceramides induce apoptosis. (3) to develop mito-ceramides as novel chemotherapeutic agents.

Role: Co-Investigator

NIH R01 #NS42025-01A2 Colombini (PI) \$250,000 (Annual DC)

06/01/2003-11/30/2006

*Channel Formation by Ceramides: Implication on Apoptosis*

Goal: Characterization of ceramide channels in mitochondria, liposomes, and planar phospholipid membranes as well as the regulation of ceramide channels by ceramide metabolites and anti-apoptotic Bcl-2 proteins.

Role: Co-Investigator

NIH NINDS Siskind (PI/Awardee) Pre-Doc Salary

Individual Ruth L. Kirschstein Pre-doctoral Fellowship

06/2000—5/2003

*Ceramide channel formation and its role in apoptosis*

Goal: This study involved the biophysical characterization of ceramide channels in planar phospholipid membranes and isolated mitochondria.

### **Grants Received, but Relinquished Due to Scientific and/ or Budgetary Overlap**

NIH NIDDK K99/ROO

*Role of Ceramide in Aging Related Diseases*

01/01/2009-12/31/2013

Goal: A research career development award for retraining in kidney pathology and physiology for the purpose of determining the mechanism(s) by which ceramide induces renal cell death for the long-term goal of developing novel therapeutics to protect the aging kidney from nephrotoxic insults.

Role: Principal Investigator

### **Bibliography**

#### **Peer Reviewed Publications:**

1. Stathem M, Marimuthu S, O'Neal J, Rathmell JC, Chesney JA, **Beverly LJ**, Siskind LJ. Glucose availability and glycolytic metabolism dictate glycosphingolipid levels. *Journal Cell Biochem.* 2015 Jan;116(1). **PMID: 25145677**
2. Nowling TK, Mather AR, Thiyagarajan T, Hernandez-Corbacho MJ, Jones EE, Powers TW, Snider AJ, Oates JC, Drake RR, and **Siskind LJ**. (2014) Renal glycosphingolipid metabolism is dysfunctional in lupus mice and patients with nephritis. *Journal of the American Society of Nephrology*. pii: ASN.2014050508. [Epub ahead of print] **PMID: 25270066**
3. Perry DM, Newcomb B, Adada M, Wu BX, Roddy P, Kitatani K, **Siskind L**, Obeid LM, and Hannun YA. (2014) Defining a Role for Acid Sphingomyelinase in the p38/Interleukin-6 Pathway. *J. Biol. Chem.* 289(32):22401-12.

4. Richard EM, Thiyyagara T, Bunni MA, Basher F, Roddy PO, **Siskind LJ**, Nietert PJ, and Nowling TK. (2013) Reducing FLI1 Levels in the MRL/lpr Lupus Mouse Model Impacts T Cell Function by Modulating Glycosphingolipid Metabolism. *PLoS One*. 8(9):e75175.
5. Korrapati MC, Howell LH, Shaner BE, Megyesi JK, **Siskind LJ\***, and Schnellmann RG. (2013) Suramin: a potential therapy for diabetic nephropathy. *PLoS One*. *PLoS One*. 8(9):e73655  
**\*Corresponding Author**
6. Beverly LJ\*, Howell LA, Hernandez-Corbacho MJ, Casson L, Chipuk JE, and **Siskind LJ\***. (2013) BAK activation is necessary and sufficient to drive ceramide synthase-dependent ceramide accumulation following inhibition of BCL2-like proteins. *Biochem. J*. 452(1):111-9.  
**\* Co-Corresponding Authors**
7. Casson L, Howell L, Mathews LA, Ferrer M, Southall N, Guha R, Keller JM, Thomas C, **Siskind LJ\***, and Beverly LJ\*. (2013) Inhibition of ceramide metabolism sensitizes human leukemia cells to inhibition of BCL2-like proteins. *PLoS One*. 8(1): e54525. doi:10.1371/journal.pone.0054525  
**\* Co-Corresponding Authors**
8. Perera MN, Ganesan V, **Siskind LJ**, Szulc ZM, Bielawski J, Bielawska A, Bittman R, and Colombini M. (2012) Ceramide channels: influence of molecular structure on channel formation in membranes. *Biochim Biophys Acta*. 1818(5): 1291-301. **PMID: 22365970**
9. Chipuk JE, McStay GP, Bharti A, Kuwana T, Clarke CJ, **Siskind LJ**, Obeid LM, and Green DR. (2012) Sphingolipid metabolism cooperates with BAK and BAX to promote the mitochondrial pathway of apoptosis. *Cell*. 148(5): 988-1000. **PMID: 22385963**
10. Romero Rosales K, Singh G, Wu K, Chen J, Janes M, Lilly M, Peralta E, **Siskind L**, Bennett M, Fruman DA, and Edinger AL. (2011) Sphingolipid-based drugs selectively kill cancer cells by down-regulating nutrient transporter proteins. *Biochem. J*. in press. **PMID: 21767261**
11. Hernandez-Corbaco M, Jenkins R, Clarke CJ, Hannun YA, Obeid LM, Snider AJ, and **Siskind LJ\***. (2011) Glycosphingolipids mediate renal aging. *PLoS One* 6(6):e20411.  
**\*Corresponding Author**
12. Mather AR and **Siskind LJ\*** (2011) The role of glycosphingolipids in kidney disease. L. Ashley Cowart, Editor: Sphingolipids in Metabolic Disease. Landes Bioscience and Springer, New York, NY, pp. 121-138.  
**\*Corresponding Author**
13. **Siskind LJ\***, Mullen TD, Rosales, KR, Clarke, CJ, Hernandez-Corbacho MJ, Edinger, AI, and Obeid, LM (2010). The Bcl-2 protein BAK is required for ceramide generation during apoptosis. *Journal of Biological Chemistry*. 285(16):11818-26  
**\*Corresponding Author**
14. Guenther GG, Peralta ER, Romero KM, Wong SY, **Siskind LJ**, and Edinger AL. (2008) Ceramide starves cells to death by down-regulating nutrient transporter proteins. *Proceedings of the National Academy of Sciences of the United States of America*. 105(45):17402-7
15. **Siskind LJ**, Feinstein L, Yu T, Davis JS, Jones D, Choi J, Zuckerman JE, Tan W, Hill RB, Hardwick JM, Colombini M. (2008) Anti-apoptotic Bcl-2 family proteins disassemble ceramide channels. *Journal of Biological Chemistry* 283(11):6622-30
16. **Siskind LJ**, Kolesnick RN and Colombini M. (2006) Ceramide forms channels in mitochondrial outer membranes at physiologically relevant concentrations. *Mitochondrion*. 6(3):118-25.
17. **Siskind LJ**, Fluss S, Bui M and Colombini M. (2005) Sphingosine forms channels in membranes that differ greatly from those formed by ceramide. *Journal of Bioenergetics and Biomembranes*. 37(4): 227-236.
18. **Siskind LJ**, Davoody A, Lewin N, Marshall S and Colombini M. (2003) Enlargement and contracture of C<sub>2</sub>-ceramide channels. *Biophysical Journal* 85: 1560-1575.

19. **Siskind LJ**, Kolesnick RN and Colombini M. (2002) Ceramide channels increase the permeability of the mitochondrial outer membrane to small proteins. *Journal of Biological Chemistry* 277: 26796-26803
20. **Siskind LJ** and Colombini M. (2000) The lipids C<sub>2</sub>- and C<sub>16</sub>-ceramide form large stable channels in membranes: implications for apoptosis. *Journal of Biological Chemistry* 275: 39640-44.

#### **Review Articles**

**Siskind L.J.\*** (2005) Mitochondrial ceramide and the induction of apoptosis. *Journal of Bioenergetics and Biomembranes* 37(3): 143-153.

**\*Corresponding Author**

#### **Invited Articles**

**Siskind, LJ\*** and Beverly, LJ. (2013) Breaking through the tunnel vision: toward a unified model for the role of sphingolipids in apoptosis. *ASBMB Today*. 13(9): 25-26

**\*Corresponding author**

Patwardhan G, Beverly LJ, and **Siskind LJ**. (2014) Role of sphingolipids in regulating mitochondrial function. *Journal of Biochimica et Biophysica Acta*. *In press*.

#### **Book Chapters**

**Siskind LJ**, Mullen TD, and Obeid LM. The Role of Ceramide in Cell Regulation. Ralph A. Bradshaw and Edward A. Dennis, editors: Handbook of Cell Signaling 2nd edition, Oxford: Academic Press, 2009, pp. 1201-1212

#### **Session Chair and Organizer at International Conferences:**

**Co-Chair**, Biophysics of Sphingolipids, International Ceramide Conference, October 13, 2013, Long Island, NY.

**Co-Chair** of Lipid Metabolism and Analysis session at the 45<sup>th</sup> Annual South Eastern Region Lipid Conference. November 10<sup>th</sup>-12<sup>th</sup> 2010 Cashiers, North Carolina

**Organized** and **Co-Chaired** Platform session at the 2006 Annual Biophysical Society Meeting entitled "Mitochondria and Apoptosis: Mechanisms for Protein Release." Salt Lake City, Utah

**Organized** and **Co-Chaired** Platform session at the 2004 Annual Biophysical Society Meeting entitled "The Biophysics of Ceramide Signaling." Baltimore, MD.

### **Presentations at National and/or International Conferences**

Research seminar, 10/13 “Role of glycosphingolipids in diabetic nephropathy.” University of Louisville, Department of Nephrology, Research Seminar Series, Louisville, KY.

Invited Talk, 10/13 “Biophysics of Sphingolipids: a historical perspective.” *International Ceramide Conference*, Long Island, NY.

Research seminar, 10/13 “Sphingolipid metabolism as a therapeutic target for disease.” MD/PhD program seminar series, University of Louisville, Louisville, KY.

Research seminar, 09/13 “Sphingolipid metabolism as a therapeutic target for cancer.” University of Louisville, Molecular Targets, James Graham Brown Cancer Center, Louisville, KY

**Invited Speaker:** Role of Sphingolipids in Renal Aging. July 23, 2013, Bethesda, MD. At the “Ceramides and Aging” workshop help by the National Institutes of Aging, speakers were invited by the program officer for the Biology of Aging section, Dr. David Finkelstein.

**Invited Seminar:** Role of glycosphingolipids in inflammation within the kidney in acute and chronic kidney diseases. May 17, 2012 University of California, Irvine, CA.

**Invited Speaker:** BAK regulates CerS and ceramide generation during apoptosis. Gordon Research Conference on Glycolipid and Sphingolipid Biology. February 8<sup>th</sup> 2010. Ventura, CA.

**Invited Speaker:** Bak is required for ceramide generation during apoptosis. Hollings Cancer Center Annual Retreat. November 20<sup>th</sup> 2009. Charleston, SC.

**Invited Speaker:** BAK is required for ceramide generation during apoptosis: implications for mitochondrial outer membrane permeabilization. Charleston Conference on Mitochondrial Physiology and Pathobiology, November 15-18th 2009 at Wild Dunes Resort, Isle of Palms, SC

**Siskind LJ**, Mullen TD, Romero KM, Spassieva S, Edinger AL, and Obeid LM. (2009) Regulation of long-chain ceramide metabolism by the Bcl-2-antagonist/ killer (Bak) protein. Charleston Ceramide Conference. Charleston, SC

**Invited Speaker:** *Bcl-2 Proteins: Salon des Refusee*. Symposia at the 2007 Annual Biophysical Society Meeting. Talk entitled: Ceramide channel inhibition by anti-apoptotic Bcl-2 proteins.

**Selected Talk from Abstracts:** *Mechanisms of Mitochondrial Outer Membrane Permeabilization* 2006 Keystone Symposia entitled Metabolomics: From Bioenergetics to Apoptosis, Talk entitled: Ceramide Channels Regulate the Permeability of the Mitochondrial Outer Membrane to Proapoptotic Proteins.

**Siskind LJ**, Fluss S, Bui MP and Colombini M. (2005) Mitochondrial sphingolipids and the induction of apoptosis. *Biophys. J.* 946-Plat; Annual Biophysical Society meeting, Long Beach, CA.

**Siskind LJ** and Colombini M. (2004) Ceramide channels: a closer look. *Biophys. J.* 1009-Plat; Baltimore, MD

**Siskind LJ**, Davoody A, Lewin N, Marshall S, Kolesnick RN and Colombini M. (2003) Ceramide channels and apoptosis: channel characterization. 1565-Plat; Annual Biophysical Society meeting, San Antonio, TX.

**Siskind LJ**, Kolesnick RN and Colombini M. (2002) Ceramide forms dynamic channels in the mitochondrial outer membrane increasing its permeability to small proteins. *Biophys. J.* 82(1): 22; Annual Biophysical Society meeting, San Francisco, CA.

- Beverly LJ, Casson L, Metelli A, Howell L, **Siskind LJ**. (2013) Tumor cell glycosphingolipid metabolism as a novel target for the treatment of cancers. Poster Presentation at the Keystone Symposia on Tumor Metabolism. Keystone, CO. February 24-March 1, 2013.
- Howell L, Korrapati M, Shaner B, Schnellmann RG, and **Siskind LJ**. (2012) Kidney glycosphingolipid accumulation in a murine model of diabetic nephropathy is inhibited by suramin. 46<sup>th</sup> Annual South Eastern Regional Lipid Conference. Cashiers, NC. November 8-10 2012. Selected Abstract for Talk, Poster Award.
- Marimuthu, S and **Siskind LJ**. (2012) Role of glycosphingolipids in inflammatory cytokine and chemokine production in the kidney. Poster presentation at the 46<sup>th</sup> Annual South Eastern Regional Lipid Conference. Cashiers, NC. November 8-10 2012.
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#### **Community Service Related Activities:**

- Laboratory demonstration: December 18, 2014 to four 4<sup>th</sup> grade students from Kenwood Station Elementary, 2 PM - 3:30PM
- Career Day presentation: February 26, 2014 8:00AM- 10:30AM, 25 min presentations to each of four 4<sup>th</sup> grade classes
- Laboratory demonstration: March 15, 2014 to two 4<sup>th</sup> grade students from Kenwood Station Elementary, one sixth grade student, 10 AM - 12:30PM
- Laboratory demonstration: March 21st, 2013 to one 4<sup>th</sup> grade student from Kenwood Station Elementary, 3 PM - 5:30PM
- Talk at Against the Grain as part of the Beer with a Scientist Seminar Series, "Everyone is Aging, so why haven't we found a scientific cure?" July 16, 2014
- Scientific Ambassador Program, BioRad, DNA laboratory taught to 4<sup>th</sup> graders, in December 2014, I taught on two occasions for two hours each to two of the five 4<sup>th</sup> grade classes, remaining classes will be taught in 2015
- Leukemia and Lymphoma Society, School and Youth Program, 3<sup>rd</sup> Annual University of Louisville Meet the Research Program, April 24, 2014
- Judge, Louisville Regional Science and Engineer Fair, January 14, 2015