

Sathish Kumar Natarajan

Department of Nutrition & Health Sciences
University of Nebraska-Lincoln
229 Filley Hall, 1625 Arbor Drive
Lincoln, NE 68583-0806

Lab: (402) 472-7227
Mobile: (402) 805-7520
E-mail: snatarajan2@unl.edu



RESEARCH AREAS

- Studying the mechanism of liver failure and the role of 3-hydroxy fatty acids in causing placenta and liver lipotoxicity during acute fatty liver of pregnancy
- Determine the mechanism of palmitoleate protection against Zika Virus-induced endoplasmic reticulum stress and apoptosis in placental trophoblasts
- Determine the lipotoxic role of saturated free fatty acids to placental trophoblast during maternal obesity

EDUCATION/TRAINING

<u>Institution and Location</u>	<u>Degree</u>	<u>Completion Date</u>	<u>Field of Study</u>
University of Madras Chennai, Tamilnadu (TN), India	BS	May 1999	Biochemistry
University of Madras Chennai, TN, India	BS	May 2001	Biochemistry
Dr. MGR Medical University Chennai, TN, India	PhD	Oct. 2008	Biomedical Sciences
University of Nebraska Lincoln, NE	Postdoc	July 2012	Proline and pipecolate metabolism
University of Nebraska Medical Center Omaha, NE	Postdoc	July 2015	Cholangiocyte lipoapoptosis in NAFLD

POSITIONS AND EMPLOYMENT

2008-2012	Postdoctoral Research Associate, University of Nebraska; Lincoln, NE
2012-2014	Postdoctoral Research Associate, University of Nebraska Medical Center; Omaha, NE
2014-2015	Instructor, University of Nebraska Medical Center; Omaha, NE
2016	Assistant Professor, University of Nebraska-Lincoln; Lincoln, NE
2018	Graduate Committee Member, Department of Nutrition & Health Sciences, University of Nebraska; Lincoln, NE
2021	Adjunct Assistant Professor, Division of Medical Nutrition Education, College of Allied Health Professions, University of Nebraska Medical Center; Omaha, NE

OTHER EXPERIENCE AND PROFESSIONAL MEMBERSHIPS

2014	Member, American Association for the Study of Liver Diseases
2014	Member, American Association for the Advancement of Science
2014	ad hoc reviewer, Well-Being Women Foundation, London, UK
2016	ad hoc reviewer, NSF Graduate Research Fellowship Program
2016	ad hoc reviewer, National Defense Society for Engineering Graduate Fellowship Evaluation Panel and Department of Defense
2016	Member, Nebraska Center for Prevention of Obesity Diseases
2016	Member, Redox Biology Center, University of Nebraska-Lincoln
2016	Member, American Society for Nutrition

2016	Member, Society for the Study of Reproduction
2017	Editor-in-Charge, Journal "Diabetes"
2018	Member, Nebraska Center for Virology, University of Nebraska-Lincoln
2019	Member, Child Health Research Institute, University of Nebraska Medical Center
2020	Member, Society of Reproductive Investigation
2021	ad hoc reviewer, NSF Graduate Research Fellowship Program Panelist

HONORS

2004	Shakuntala Amir Chand Prize, Indian Council of Medical Research, Government of India
2006	Young Scientist Travel Award, 20 th IUBMB Conference
2015	Travel Award to attend American Association for the Study of Liver Disease (AASLD) and Industry Colloquium, Novel Targets and Therapies in Liver Disease
2016	Thematic Best Poster Award, American Society for Biochemistry and Molecular Biology (ASBMB)

GRANT SUPPORT

Current Research Support

University of Nebraska Collaboration Initiative Seed Grant, 07/07/2022-06/3/2024

- **Grant Title:** Palmitoleate protects against Zika virus infection in trophoblasts by activating innate immunity, 01/07/2021-06/3/2023
- Total Dollars: \$150,000
- Role: Principal Investigator

Revision Award from Institute of Agriculture and Natural Resources, Agriculture Research Division, University of Nebraska-Lincoln

- **Grant Title:** Macadamia nut protects against maternal obesity-induced complications, 7/01/2022-06/30/2023
- Total Dollars: \$40,000
- Role: Principal Investigator

University of Nebraska Collaboration Initiative Team Forming Grant, 07/01/2021-06/3/2023

- **Grant Title:** Development of targeted antiviral drugs against SARS-CoV-2 variants
- Total Dollars: \$40,000
- Role: Co-investigator (PI: Sid Byrareddy)

Center for Health and Vascular Research Pilot Grant, Great Plains IDeA-CTR, 07/01/2022-06/30/2023

- **Grant Title:** Analysis of Mitochondrial dysfunction in mutant *HADHA* cardiomyocytes
- Total Dollars: \$72,072
- Role: Principal Investigator

University of Nebraska Collaboration Initiative Team Forming Grant, 07/01/2021-06/3/2023

- **Grant Title:** Mitochondrial dysfunction in mutant *HADHA* cardiomyocytes is via impaired cardiolipin remodeling
- Total Dollars: \$40,000
- Role: Principal Investigator

Child Health Research Institute, University of Nebraska Medical Center, 10/01/2021-10/31/2023

- **Grant Title:** Palmitoleate Protects against Zika Virus Infection to the Fetal Brain
- Total Dollars: \$50,000
- Role: Principal Investigator

Natreon Inc, Industry Funding, 08/01/2020-09/01/2023

- **Grant Title:** The Effects of PrimaVie Shilajit on Biomarkers of Collagen Degradation and Synthesis as well as the Time Course of Muscle Strength and Soreness Recovery
- Total Dollars: \$79,500
- Role: Co-Principal Investigator (PI: Terry Housh)

University of Nebraska Collaboration Initiative Team Forming Grant, 07/01/2022-06/31/2023

- **Grant Title:** Precision Nutrition in Cancer Survivors: An Interdisciplinary Team-based Approach
- Total Dollars: \$40,000
- Role: Co-Investigator (PI: Corrine Hanson)

Funded and Completed Research Support

University of Nebraska Collaboration Initiative Team Forming Grant, 07/01/2021-09/31/2022

- **Grant Title:** Precision Nutrition in Cancer Survivors: An Interdisciplinary Team-based Approach
- Total Dollars: \$7,500
- Role: Co-Investigator (PI: Corrine Hanson)

Research Council Faculty Seed Grant, University of Nebraska-Lincoln, 01/01/2021- 12/31/2021

- **Grant Title:** Mechanism of palmitoleate protection against 3-hydroxy fatty acid-induced hepatocyte lipoapoptosis
- Total Dollars: \$10,000
- Role: Principal investigator

University of Nebraska- Research Collaboration Initiative Seed grant, 06/01/2019-05/31/2021

- **Grant Title:** Understanding cancer cachexia as the transcriptional and metabolic reprogramming of adipose tissue by activin A
- Total Dollars: \$150,000
- Role: Co-Investigator (PI: So-Youn, Kim, UNMC)

NIH P20 COBRE (NIGMS 1P20GM104320 and **2P20GM104320**), 06/01/2017-08/16/2020

- **Grant Title:** Palmitoleate prevents 3-hydroxy fatty acid-induced lipotoxicity to placental trophoblasts and hepatocytes.
- Total Dollars: \$450,000
- Role: Project Leader (PI: Zemleni, J)

Nebraska Center for the Prevention of Obesity Diseases (NPOD) Seed Grant Funding, 2019.

- **Grant Title:** Impact of obesity on omega-3 fatty acid-derived proresolving mediators in maternal-infant health
- Total Dollars: \$32,000
- Role: Co-I (PI: Anderson Berry)

University of Nebraska Food for Health Collaboration Initiative Planning Grant, 2018

- **Grant Title:** Simulation evaluation of simulation-based training in healthcare education and its impact on the delivery and quality of health care
- Total Dollars: \$15,000
- Role: Co-I (PI: Mukherjee, M)

University of Nebraska Food for Health Collaboration Initiative Seed Grant, 2017-2018

- **Grant Title:** Betaine protects diet-induced liver disease progression model.
- Total Dollars: \$150,000, Role: Co-I (PI: Kharbanda)

Layman Seed Grant, University of Nebraska-Lincoln, 2017

- **Grant Title:** Palmitoleate protects 3-hydroxy fatty acid-induced oxidative stress in primary human trophoblast cells.
- Total Dollars: \$10,000
- Role: Principal investigator

University of Nebraska Food for Health Collaboration Initiative Seed Grant, 07/01/2017-03/30/2019

- **Grant Title:** Maternal obesity-dependent mechanism that increase offspring predisposition for metabolic dysfunction.
- Total Dollars: \$150,000
- Role: Co-I (PI: Wood, J)

Nebraska Center for Preventive for Obesity Diseases (NPOD) Seed Grant Funding Jan 2016 to May 31, 2016.

- **Grant Title:** Mechanism of 3-hydroxy-fatty acid-induced placental trophoblast and hepatocyte lipoapoptosis
- Total Dollars: \$42,000
- Role: Principal investigator

RESEARCH EXPERIENCE

Assistant Professor

2016-present

University of Nebraska-Lincoln

- Elucidate the mechanism of 3-hydroxy-fatty acid- and free fatty acid (FFA)-induced placental trophoblast necroptosis and hepatocyte lipoapoptosis.
- Identify nutrient compounds that protects against Zika Virus-induced placental trophoblast apoptosis and neuronal cell apoptosis.
- Determine whether palmitoleate mitigates the placental injury and dysfunction caused due to the increased circulating FFA during maternal obesity

Instructor

2014-2015

University of Nebraska Medical Center

- Research established that miR-34a targets anti-apoptotic proteins such as hepatocyte growth factor receptor (MET), Kruppel-Like Factor 4 (KLF4) and NAD-dependent deacetylase sirtuin1 for the induction of hepatocyte- and cholangiocyte lipoapoptosis

TEACHING EXPERIENCE *(reverse chronological order)*

<u>Course</u>	<u>Role</u>	<u>Description</u>
NUTR 990	Course Instructor	Seminar Series for graduate students in the Department of Nutrition and Health Sciences, University of Nebraska-Lincoln, taught in fall semesters of 2019-2021. (1 credit)
NUTR 945	Course Instructor	Complications of Maternal Obesity for graduate students at the University of Nebraska-Lincoln, taught fall semesters of 2019 and 2021. (3 credits)
NUTR 455	Course Instructor	Advanced Nutrition and Human Metabolism course for senior undergraduate students in the Department of Nutrition and Health Sciences, University of Nebraska-Lincoln, springs semesters from 2017-2022. This is a capstone course for Nutrition and Health Sciences and Food Science and Technology Department undergraduate students. (3 credits)
NUTR 921	Course Instructor	Graduate Student Seminar for the Interdepartmental Nutrition Program,

University of Nebraska-Lincoln, Fall 2016. (1 credit)

BIOC 970	Guest Coordinator	Journal Club for graduate students, Department of Biochemistry and Molecular Biology, University of Nebraska Medical Center, Fall 2014.
BIOC 514	Course Lecturer	Covered the following topics to pharmacy graduate students: Biochemical basis of human nutrition, biochemical nutrition, and metabolic regulations in this team-taught course; University of Nebraska Medical Center, Spring 2013-2015.
BIOC 933	Guest Lecturer	Graduate level enzymology course on the following topics: xanthine oxidase, nitric oxide synthase, and apoptosis-inducing factor; Department of Biochemistry, University of Nebraska-Lincoln, Fall semesters of 2010 and 2011.
BIOC 433	Guest Lecturer	Undergraduate biochemistry lab course on the following topics: Plasmid isolation, polymerase chain reaction, genetic engineering, and gene cloning; Department of Biochemistry, University of Nebraska-Lincoln, January 2009-2012.

INVITED TALKS (*reverse chronological order*)

Oct. 2022	Invited Speaker to the American Society for Biochemistry and Molecular Biology's regional workshop on Networking for success, University of Nebraska-Lincoln
Aug. 2022	Invited Speaker to the Biochemistry and Molecular Biology Symposium as Alumni speaker, University of Nebraska Medical Center
Mar. 2022	Invited Speaker to the Nebraska Center for the Prevention of Obesity-related Diseases (NPOD) Principal Investigator meeting, University of Nebraska-Lincoln
Jan. 2022	Invited Speaker to the 2021-22 Perinatal-Neonatal Research Zoom Conference, Department of Pediatrics, School of Medicine, University of Colorado, Aurora, CO
Dec. 2021	Invited Speaker to the Department of Obstetrics and Gynecology, University of Washington, St. Louis
Nov. 2020	Invited speaker in the Department of Biochemistry and Molecular Biology Seminar Series, University of Nebraska Medical Center
Sep. 2020	Invited speaker at the Life science Discussion Forum of Botany4U, an online platform for the students of life sciences. https://botany4u.com/ . Presentation available in the following weblink: https://youtu.be/BmLVISyLwLU
Nov. 2020	Invited speaker to the Complex Biosystems Seminar Series, University of Nebraska-Lincoln
Oct. 2019	Invited speaker to the Department of Pediatrics, University of Colorado, Anschutz Medical Campus
Aug. 2019	Invited speaker at the Department of Gastrointestinal Sciences, University of Missouri, Columbia, MO
Apr. 2018	Invited speaker to the Postdoctoral Advisory Council workshop on "Preparations to become an assistant professor", University of Nebraska-Lincoln, Lincoln, NE

- Apr. 2017 Invited speaker at the Redox Biology Center Research Seminar University of Nebraska-Lincoln
- Feb. 2017 Invited speaker at the Department of Animal Science Research seminar, University of Nebraska-Lincoln
- May 2016 Invited speaker to the Sigma Xi Scientific club meeting held at the University of Nebraska Medical Center, Omaha, NE
- Aug. 2014 Invited speaker at the Department of Biology Research seminar, University of Nebraska-Omaha

ACADEMIC AWARDS

Shakuntala Amir Chand Prize

This prize was awarded for my significant research contribution as a young scientist in biomedical sciences by Indian Council of Medical Research, Government of India, 2004 for the work on "Pathophysiological changes in Cirrhosis of Liver".

Young Scientist Travel Award

To attend the young scientist program of 20th IUBMB, International Congress of Biochemistry and Molecular Biology and 11th FAOBMB congress, held at Kyoto, Japan, 2006.

Senior Research Fellowship Award

From the Indian Council of Medical Research, Government of India for pursuing the PhD program, 2005-2007.

Best poster award

For the poster entitled "Oxidative stress in Microvesicular Steatosis: Role of Mitochondria and Peroxisomes" at the fourth International Conference of Society of Free Radical Research; held at Bangalore, India 2005.

Travel Award

To attend American Association for the Study of Liver Disease (AASLD) and Industry Colloquium: Novel Targets and Therapies in Liver Disease, Durham, NC, 2015.

The ASBMB 2016 Thematic Best Poster Award

For the poster entitled "Palmitoleate protection against palmitate-induced cholangiocyte lipoapoptosis is sensitive to pertussis toxin" at the ASBMB Annual Meeting, Experimental Biology, San Diego, CA, USA, 2016.

SERVICE

- 2017, 2020** American Society of Nutrition's annual meeting Abstract reviewer and poster judge.
- 2018** USDA-NIFA study section panelist for the Food Safety, Nutrition and Health, Function and Efficacy of Nutrients program area in Agriculture and Food Research Initiative Competitive grants program held in November 2018.
- 2018** Serving on Membership committee for the Society for the Study of Reproduction.
- 2020-21** Abstract reviewer for the Annual meeting of the Society for the Study of Reproduction. Reviewed 96 abstract submitted in broad field of 'Placental physiology and trophoblast function'.
- 2020** Ad hoc reviewer for hepatobiliary pathophysiology (HBPP) study section, National Institute of Digestive, Diabetes and Kidney Disease (NIDDK) in June 2020.
- 2020** Judge for flash talk presentation in 2020 Virtual Greenwald Symposium held on October 8-9, 2020.
- 2021** *ad hoc* reviewer for the Pregnancy and Neonatology (PN) study section, NICHD
- 2022** *ad hoc* reviewer for the Special Emphasis Panel, ZRG1-DKUS-J (06) study section, NIEHS

Ad hoc Reviewer to the following journals

1. Advances in Nutrition
2. American Journal of Case Reports
3. Antioxidant & Redox Signaling
4. Antioxidants
5. Biochimie
6. BioMed Research International
7. Biomolecules
8. Biomedicines
9. British Journal of Nutrition
10. BMC Cancer
11. BMC Pregnancy and Childbirth
12. Cancers
13. Cancer Management and Research
14. Cells
15. Cell Health and Cytoskeleton
16. Children
17. Current Developments in Nutrition
18. Current Molecular Pharmacology
19. Diabetes
20. Diagnostics
21. Digestive Diseases Sciences
22. Discovery Phytomedicine
23. Drug Design, Development and Therapy
24. Drug-Healthcare and Patient Safety
25. European Journal of Pharmacology
26. Frontiers
27. Frontiers Physiology
28. Frontiers in Medicine
29. Hepatic Medicine: Evidence and Research
30. Immunity, Inflammation and Disease
31. Inflammation and Colorectal Cancer
32. International Journal of Biological Science
33. International Journal of Pharmacology
34. International Journal of Molecular Sciences
35. iScience
36. Journal of Agricultural and Food Chemistry
37. Journal of Hepatocellular Carcinoma
38. Journal of Hepatology
39. Journal of Cancer
40. Journal of Cellular Biochemistry
41. Journal of Cellular Physiology
42. Journal of Clinical Medicine
43. Journal of Clinical Translational Medicine
44. Journal of Clinical and Translational Hepatology
45. Journal of Inflammation Research
46. Journal of King Saud University
47. Journal of Neuroscience Research
48. Journal of Nutrition
49. Journal of Nutrition Science
50. Lipids in Health and Disease
51. Mediators of Inflammation
52. Molecules
53. Molecular Cancer
54. Molecular Biology Reports
55. Molecular Therapy
56. Nanomedicine: Nanotechnology, Biology, and Medicine
57. Neuroscience
58. Nutrients
59. PLOS One
60. Scientific Reports

Editorial Boards

Editor-in-chief for topic issue “Novel Therapeutic Nutrient Molecules” for Journals:

<i>Biomedicines, Nutrients, Current Issues in Mol. Biol., Reports, and Metabolites</i>	2021– present
Guest Editor for special issue “Novel Therapeutic Nutrient Molecules” in <i>Biomedicines</i>	2020– present
Editor-in-charge to Journal <i>Diabetes</i>	2017– present
Consulting Editor to <i>Journal of Hepatic Medicine: Evidence and Research</i>	2015 – 2018

PUBLICATIONS (selected from total 53):

Impact Factor (IF). Natarajan lab members are underlined.

1. Sahoo PK, Krishnamoorthy C, Wood JR, Mott JL, Hanson C, Anderson-Berry A, **Natarajan SK***. Palmitate induces Integrated Stress Response and Lipoapoptosis in Trophoblasts. Manuscript in preparation. ***Corresponding authors.**
2. Thompson M, Ulu A, Yuil-Valdes AG, Mukherjee M, Thoene M, VanOrmer M, Slotkowski R, Lyden E, Anderson-Berry A, Hanson CK, Nordgren TM, **Natarajan SK***. Something smells fishy: How lipid mediators impact neonatal development and the maternal-fetal interface. *Biomedicines*. In press ***Corresponding authors.**

3. Muthuraj PG, Krishnamoorthy C, Hanson C, Anderson-Berry A, Natarajan SK* Novel Therapeutic Nutrient Molecules that Protect Against Zika Virus Infection with a Special Note on Palmitoleate. *Nutrients*. **2022**, 15(1), 124 *Corresponding authors.
4. Sahoo PK, Natarajan SK*. Trophoblast Changes in Maternal Obesity. *Diabetes*. **2022** (Review) 8 (1); 19-22. *Corresponding authors.
5. Neltner TJ, Sahoo PK, Smith RW, Anders JP, Arnett JE, Schmidt RJ, Johnson GO, **Natarajan SK**, Housh TJ. Effects of 8 weeks of Shilajit supplementation on serum pro-c1α1, a biomarker of type 1 collagen synthesis: A randomized control trial. *Journal of Dietary Supplements*. **2022**, **22**, 1-12. doi: 10.1080/19390211.2022.2157522
6. Neltner TJ, Sahoo PK, Smith RW, Anders JP, Arnett JE, Ortega DG, Schmidt RJ, Johnson GO, **Natarajan SK**, Housh TJ. Effects of High-intensity, Eccentric-only Muscle Actions on Serum Biomarkers of Collagen Degradation and Synthesis. *Journal of Strength and Conditioning Research*. **2022** (In press)
7. Ro S-H, Bae J, Jang Y, Myers JF, Chung S, Yu J, **Natarajan SK**, Franco R, Song H-S. Arsenic Toxicity on Metabolism and Autophagy in Adipose and Muscle Tissues. *Antioxidants*. **2022**; 11(4):689. <https://doi.org/10.3390/antiox11040689>. Review (IF: 7.675)
8. Thompson M, Ulu A, Yuil-Valdes AG, Mukherjee M, Thoene M, VanOrmer M, Slotkowski R, Lyden E, Anderson-Berry A, Hanson CK, Nordgren TM, **Natarajan SK***. Omega-6 and Omega-3 Fatty Acid-Derived Oxylipins from the Lipoxygenase Pathway in Maternal and Umbilical Cord Plasma at Delivery and Their Relationship with Infant Growth. *Int J. Mol. Sci*. **2022**, 23(2), 708; *Corresponding authors. (IF: 6.208)
9. Muthuraj PG, Pattnaik A, Sahoo PK, Islam MT, Pattnaik AK, Byrareddy SN, Hanson C, Anderson-Berry A, Natarajan SK*. Palmitoleate protects against Zika virus-induced placental trophoblast apoptosis. *Biomedicines*. **2021**, 9(6), 643; <https://doi.org/10.3390/biomedicines9060643>. *Corresponding author. (IF: 6.081)
10. **Natarajan SK***, Bruett T, Muthuraj PG, Sahoo PK, Power J, Mott JL, Hanson C, Anderson-Berry A. Saturated Free Fatty Acids induce Placental Trophoblast Lipoapoptosis. *PlosOne* **2021**, Apr 22; 16(4): e0249907. doi: 10.1371/journal.pone.0249907. PMID: 33886600 *Corresponding author. (IF: 3.752)
11. Woodard V, Thoene M, Van Ormer M, Thompson M, Hanson C, **Natarajan, SK**, Mukherjee M, Yuil-Valdes A, Nordgren TM, Ulu A, Jackson KH, Anderson-Berry, A. Intrauterine Transfer of Polyunsaturated Fatty Acids in Mother–Infant Dyads as Analyzed at Time of Delivery. *Nutrients* **2021**, 13, 996. PMID: 33293682 <https://doi.org/10.3390/nu13030996>. (IF: 6.706)
12. Muthuraj PG, Sahoo PK, Kraus M, Bruett T, Annamalai AS, Pattnaik A, Pattnaik AK, Byrareddy SN, Natarajan SK*. Zika virus Infection Induces Endoplasmic Reticulum Stress and Apoptosis in Placental Trophoblasts. *Cell Death Discov*. **2021**, 7, 24. <https://doi.org/10.1038/s41420-020-00379-8>. PMID: 33500388 *Corresponding author. (IF: 7.109)
13. Muthuraj PG, Natarajan, SK*. Fetal Programming in Maternal Obesity. *Diabetes* **2020**; 6(3): 36-39. DOI:10.15562/diabetes.2020.71. Review *Corresponding author.
14. Liu B, Lu Y, Chen X, Muthuraj PG, Li X, Pattabiraman M, Zempleni J, Kachman SD, **Natarajan SK**, Yu J. Protective Role of Shiitake Mushroom-Derived Exosome-Like Nanoparticles in D-Galactosamine and Lipopolysaccharide-Induced Acute Liver Injury in Mice. *Nutrients*. **2020** Feb 13; 12(2):477. doi: 10.3390/nu12020477. PMID: 32069862. (IF: 6.706)

15. Ulu A[#], Sahoo PK[#], Yuil-Valdes AG, Mukherjee M, VanOrmer M, Muthuraj PG, Thompson M, Anderson-Berry A, Hanson CK, **Natarajan SK***, Nordgren TM*. Omega-3 fatty acid-derived resolvin D2 regulates human placental vascular smooth muscle and extravillous trophoblast activities. *Int. J. Mol. Sci.* **2019** Sep 7; 20(18):4402. doi: 10.3390/ijms20184402. PMID: 31500240. ***Co-corresponding author. #Equal contributions.** (IF: 6.208)
16. **Natarajan SK**, Ibdah JA, Role of 3-hydroxy fatty acid-induced hepatic lipotoxicity in acute fatty liver of pregnancy. *Int. J. Mol.Sci.* 2018, 19, 322. PMID: 29361796. (IF: 6.208). Invited Review
17. Wehrkamp CJ, **Natarajan SK**, Mohr AM, Phillippi MA, Mott JL. miR-106b-responsive gene landscape identifies regulation of Kruppel-like factor family. *RNA Biology* 2018 Mar 4; 15(3): 391-403. PMID: 29286255. (IF: 4.766)
18. **Natarajan SK***, Stringham BA, Mohr AM, Wehrkamp CJ, Lu S, Phillippi MA, Harrison-Findik D, Mott JL. FoxO3 increases miR-34a to cause palmitate-induced cholangiocyte lipoapoptosis. *J. Lipid Res.* 2017 May; 58(5):866-875. PMID: 28250026. ***Corresponding author.** (IF: 5.922)
19. **Natarajan SK**, Rasineni K, Ganesan M, Feng D, McVicker BL, McNiven MA, Osna NA, Mott JL, Casey CA, Kharbanda KK. Structure, function, and metabolism of hepatic and adipose tissue lipid droplets: implications in alcoholic liver disease *Curr. Mol. Pharmacol.* 2017; 10 (3):237-248. PMID: 26278390. (IF: 3.339), Invited Review
20. **Natarajan SK***, Pachunka JM, Mott JL. Role of microRNAs in Alcohol-Induced Multi Organ Injury. *Biomolecules.* 2015; 5(4):3309-38. PMID: 26610589. ***Corresponding author.** (IF: 5.88), Review article.
21. **Natarajan SK**, Ingham SA, Mohr AM, Wehrkamp CJ, Ray A, Roy S, Phillippi MA, Mott JL. Saturated free fatty acids induce cholangiocyte lipoapoptosis. *Hepatology* 2014; 60(6): 1942-56. PMID: 24753158. (Highlighted by the journal in an editorial commentary by Martinez AK, Glaser SK, 2014). (IF: 17.425)
22. **Natarajan SK**, Smith MA, Wehrkamp CJ, Mohr AM, Mott JL. MicroRNA function in human diseases. *Med. Epigenet.* 2013; 1:106-115, Invited Review.
23. **Natarajan SK**, Zhu W, Liang X, Zhang L, Demers AJ, Zimmerman MC, Simpson MA, Becker DF. Proline dehydrogenase is essential for proline protection against hydrogen peroxide-induced cell death. *Free Radic. Biol. Med.* 2012; 53(5):1181-91. PMID: 22796327. (IF: 8.101)
24. **Natarajan SK**, Becker DF. Role of apoptosis-inducing factor, proline dehydrogenase, and NADPH oxidase in apoptosis and oxidative stress. *Cell Health Cytoskelet.* 2012; 1; 2012(4): 11-27. PMID: 22593641. Review article.
25. **Natarajan SK**, Thangaraj KR, Goel A, Eapen CE, Balasubramanian KA, Ramachandran A. Acute fatty liver of pregnancy: an update on mechanisms. *Obstetric Medicine*, 2011; 4:99-103. PMID: 27579101. (IF: 1.24), Invited Review
26. **Natarajan SK**, Thangaraj KR, Eapen CE, Ramachandran A, Mukhopadhyaya A, Mathai M, Seshadri L, Peedikayil A, Ramakrishna B, Balasubramanian KA. Liver injury in acute fatty liver of pregnancy: possible link to placental mitochondrial dysfunction and oxidative stress. *Hepatology.* 2010; 51(1):191-200. PMID: 20034024. (IF: 17.425)
27. **Natarajan SK**, Amirtharaj GJ, Ramachandran A, Pulimood AB, Balasubramanian KA. Retinoid metabolism in the small intestine during development of liver cirrhosis. *J Gastroenterol. Hepatol.* 2009; 24(5):821-9. PMID: 19226378. (IF: 4.369)

28. **Natarajan SK**, Basivireddy J, Ramachandran A, Thomas S, Ramamoorthy P, Pulimood AB, Jacob M, Balasubramanian KA. Renal damage in experimentally induced cirrhosis in rats: Role of oxygen free radicals. *Hepatology*. 2006; 43(6):1248-56. PMID: 16729302. (IF: 17.425)
29. **Natarajan SK**, Thomas S, Ramamoorthy P, Basivireddy J, Pulimood AB, Ramachandran A, Balasubramanian KA. Oxidative stress in the development of liver cirrhosis: a comparison of two different experimental models. *J Gastroenterol Hepatol*. 2006; 21(6):947-57. PMID: 16724977. (IF: 4.369)
30. **Natarajan SK**, Ramamoorthy P, Thomas S, Basivireddy J, Kang G, Ramachandran A, Pulimood AB, Balasubramanian KA. Intestinal mucosal alterations in rats with carbon tetrachloride-induced cirrhosis: changes in glycosylation and luminal bacteria. *Hepatology* 2006; 43(4):837-46. PMID: 16557555. (IF: 17.425)

Book Chapter

1. Mohr A, Sahoo PK, Muthuraj PG, Spriet MR, Mott JL, **Natarajan SK***. Epigenetics, Noncoding RNAs, and Gene Expression. *Comprehensive Foodomics*, 2020 Chapter 00021. Elsevier Publications.
***Corresponding author.** Editor/Contributor: Alejandro Cifuentes, Epigenetics & Noncoding RNA
Section Editor: Juan Cui