CURRICULUM VITAE

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Personal Statement

After completing a B.S. degree in Biological Sciences at the University of Sciences, in Monastir, Tunisia in 2001, I pursued both the M.Sc. and Ph.D. degrees at the University of Quebec at Montreal, Canada. In 2009, I joined the University of California, Davis where I began my training in the Department of Nutrition as a post-doctoral fellow. In 2012, I was promoted to Assistant Project Scientist then to Assistant Researcher in 2014. My passion for research however, started in 1999 when I began work in a laboratory that focused on the molecular mechanisms and genetic variants that influence fertility in humans. This positive experience inspired me to pursue a career in biomedical research. I applied to and was accepted into a M.Sc. program at the University of Quebec. I completed both my M.Sc. and Ph.D. degrees with Dr. Averill-Bates in the Department of Chemistry and Biochemistry with a focus on cancer biology. In particular, my research focused on the molecular mechanisms of cancer therapy using noninvasive biological methods, such as hyperthermia. Furthermore, during my graduate program, I gained extensive experience in cell biology and molecular techniques, including analysis of cell antioxidants and redox signaling. My training program gave me the opportunity to strengthen my knowledge base in the molecular mechanisms of disease and to enhance my public speaking skills through didactic training and seminars. I was successful in this program as reflected by my awards and publications. For example, I received the International Travel and Research Award from the Ministry of Higher Education and Biotechnology of Tunisia, the Excellence in Research Award offered by the Faculty of Sciences of the University of Quebec at Montreal and the Scholarship of Excellence Award from the Foundation of the University of Quebec. During my graduate studies in cancer biology, I became aware of the large amount of overlap between cancer biology and chronic metabolic diseases, especially obesity and saw this combination of training as a potentially powerful tool for my pursuit of a career in biomedical research. Furthermore, as I have watched many of my family members develop and suffer from metabolic diseases such as obesity and type 2 diabetes mellitus. I have developed a personal interest in this field of research. Consequently, I started learning about the field and I attended several seminars on obesity and diabetes, within the University of Quebec at Montreal but also at other universities including McGill University, Concordia University, and the University of Toronto. These seminars allowed me to meet and exchange ideas with other scientists and experts in the field. I found myself more attracted and fascinated by research focusing on metabolic diseases, which culminated in my decision to pursue post-doctoral training in molecular mechanisms of obesity and type 2 diabetes.

I pursued my post-doctoral training with Dr. Fawaz Haj in the Department of Nutrition at the University of California, Davis from 2009-2012. My training program with Dr. Haj greatly expanded my knowledge base in the pathophysiology of chronic metabolic disorders. Furthermore, I was able to gain further training in the use of animal models of disease and the performance of in vivo work which I had not been exposed to in my previous training. I was successful in this position and was able to publish 9 manuscripts with Dr. Haj during my post-doctoral studies. I was promoted in 2012 to Assistant Project Scientist then two years later to Assistant Researcher in the Department of Nutrition at UC Davis.

During my tenure at UC Davis, I have been able to establish several strong collaborative relationships. These collaborations have exposed me to the research endeavors of other investigators in the Division of Endocrinology, Immunology, Oncology, Clinical Nutrition and Vascular Medicine at the UCD-medical center (UCDMC), McGill University, and Harvard Medical School. Likewise, these collaborations were deeply

gratifying and fascinating as they allowed me to learning novel experimental techniques and new areas of expertise.

Based on my accomplishments, I was awarded a prestigious K99/R00 Award from the NIH in 2013 and in 2015; I joined the Nutrition Department at the University of Tennessee-Knoxville as an assistant Professor. Currently funded by the R00 portion of the K Award. My research activities focus on understanding the molecular and genetic mechanisms that contribute to the development of metabolic diseases including obesity, diabetes, chronic inflammation and cardiovascular diseases. My main goal is to develop translational research plans to improve the treatment and/or prevention of these diseases. In addition, I am lecturing at the undergraduate and graduate level and I am comfortable with both didactic and short course/seminar format courses. Additionally, I am currently mentoring undergraduate and graduate students and a postdoctoral fellow. Finally, I know I have the enthusiasm, capacity for hard work and the open and enquiring mind needed to succeed in my career. Crucially, I believe that I possess the tools that will enable me to forge a path towards a productive career in the field of metabolic diseases within the Department of Nutrition at the University of Tennessee-Knoxville.

Education & Training

INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Faculty of Center, Monastir, Tunisia	B.Sc.	06/2001	Reproductive Biology
University of Quebec at Montreal, Montreal, Canada	M.Sc. (Distinction)	01/2004	Cancer
University of Quebec at Montreal, Montreal, Canada	Ph.D.	01/2009	Cancer
University of California-Davis, Davis, CA, USA	Post-doc	01/2009-12/2011	Obesity, Diabetes, Cancer and Cardiovascular diseases.

Research & Work Experience

2015- Current: Assistant Professor, University of Tennessee-Knoxville, Department of Nutrition. Research in the field of Obesity, Diabetes, Cardiovascular Diseases, and Cancer.

2014-15: Assistant Researcher, University of California-Davis, California; USA. Department of Nutrition. Research in the field of Obesity, Diabetes, Cardiovascular diseases, Cancer development and metastasis. I helped develop courses related to Nutrition and Metabolic Diseases.

2012-14: Assistant Project Scientist, University of California-Davis, California; USA. Department of Nutrition. Research in the field of Obesity, Diabetes, Cardiovascular diseases, Cancer development and metastasis.

2008-11: Postdoctoral fellow, University of California-Davis, California; USA. Department of Nutrition. Research in the field of Obesity, Diabetes, Cardiovascular diseases, Cancer development and metastasis.

2007-08: Research Associate Scientist. University of Quebec at Montreal- INRS-Institut Armand-Frappier, Laval, Quebec; Canada. Department of Biological Sciences. Research in the field of Cancer and drug development.

2000-01: Research Associate Scientist. Hospital Farhat Hached, Sousse Tunisia. Research in the field of Reproductive Biology.

Teaching Experience

2017-: Invited Lecturer: NUTR 412, NUTR 543, and LFSC 515. University of Tennessee-Knoxville.

2015-: Instructor: NUTR 313, NUTR 420, NUTR 450, NUTR 493, NUTR 510 and NUTR 512. University of Tennessee-Knoxville.

2010- 2015: Invited Lecturer: Nutrition 104, 117 and 290 Courses. University of California, Davis.

2004-2008: Teaching Assistant: Instrumental Biochemistry Course. University of Quebec at Montreal-INRS-Institut Armand-Frappier, Laval, Quebec; Canada. Department of chemistry and Biochemistry.

2005-2006: Teaching Assistant: Analytical Biochemistry Course. University of Quebec at Montreal-INRS-Institut Armand-Frappier, Laval, Quebec; Canada. Department of chemistry and Biochemistry.

Publications

During my tenure at the University of Tennessee-Knoxville, I was able to made significant contributions to our understanding of molecular mechanisms of obesity and diabetes. For example, through a recent collaborative high-risk project with Dr. Bruce Hammock from the University of California, Davis, we uncovered a novel molecular mechanisms of diabetic neuropathy and the contribution of endoplasmic reticulum (ER) stress in driving neuropathic pain. According to popular science magazines, this discovery could revolutionize the development of therapies that help millions of diabetes patients suffering chronic pain, as well as patients with multiple sclerosis, post-traumatic shingles, and other conditions involving nerve damage. It was through this study that we were the first to introduce the concept of sEH inhibition as a therapeutic potential for treating diabetic neuropathy by modulating ER stress. Discover magazine described this study as "One of Top 100 Science Stories of 2015." My multidisciplinary training, broad experience, tenacity, and scientific thinking were instrumental in not only completing this study but in expanding upon these findings and embarking on new innovative projects. For example, in collaboration with investigators from the NIH, Harvard Medical School, and Spain, I recently identified sEH as a key signaling molecule in diabetic nephropathy and proteinuric kidney disease due to its modulation of key signaling pathways involved in tissue homeostasis and response to stress. Through these studies, we proposed new standards for potentially modulating ER stress and autophagy to treat diabetes and its complications.

The University of Tennessee, Knoxville (UT) has strong research efforts in the field of metabolic regulation with a number of very active groups spread across campus performing exciting research. One element that was helpful in choosing UT was the strong collaborative nature of research between laboratories and the free sharing of ideas and tools among laboratories. In addition, my interest in modulation of metabolic disorders and cardiovascular diseases using dietary interventions, alongside other approaches, were the major factors that contributed to my decision to conduct my research in the Department of Nutrition. Further, I enjoy teaching and mentoring students, and pursuing a career in academia will give me the opportunity to engage students and fulfill my passion for teaching. Additionally, my diversified experience in the fields of nutrition, obesity, diabetes, cardiovascular diseases, cancer development and metastasis, nephropathy and neuropathy made me well poised for the successful mentoring of graduate and undergraduate students, as well as, national and international post-doctoral fellows and visiting scholars. Indeed, over the last 10 years I mentored 19 undergraduate students, 11 PhD students and 9 post-doctoral trainees. As a mentor, I lead informal discussions on the major concepts being studied, provide training on techniques ranging from simple techniques, such as western blotting to rodent

survival surgery, and even more complex techniques, such metabolic and proteomic data analysis. I also train my students on responsible conduct of research and collaboration, how to design a studies, as well as data acquisition, analysis, and presentation. In addition, I lead journal discussion groups on manuscripts relevant to the research project in order to encourage students to become more intellectually involved in the study and to give students experience with critical reading and insight into manuscript preparation. Furthermore, I have been teaching a training class aiming at training undergraduate students from the Nutrition Department, but also other Departments and campuses on how to design and conduct biomedical research. This class offers training in biochemical, genetic and imaging experimental approaches related to biomedical research. Students interested in conducting basic research will be selected based on their future career objectives and will be provided with the opportunity to engage in the active research projects in my laboratory and present their data in local and national undergraduate research conferences such as the Exhibition of Undergraduate Research and Creative Achievement (EURēCA) and the National Conference on Undergraduate Research. Finally, I often encourage all of my undergraduate students to collaborate with senior graduate students and postdoctoral employees, and actively engage in their research projects and secure authorship on manuscripts.

Select publications summarizing our work:

1. Puckett D, Alquraishi M, Alani D, Chahed S, Frankel VD, Donohoe DR, Voy BH, Whelan J, and Bettaieb A. Zyflamend, a Unique Herbal Blend, Inhibits Adipogenesis through the Coordinated Regulation of PKA and JNK. Adipocyte. 2020; 9:1, 454-471

2. Puckett D, Alquraishi M, Alani DA, Chahed S, Donohoe DR, Voy BH, Whelan J, and Bettaieb A. Zyflamend Induces Apoptosis in Pancreatic Cancer cells via Modulation of the JNK Pathway. Cell Communication and Signaling. 2020; 9:1, 454-471

3. Alquraishi, M., Donohoe, D., Voy, B.H., et al. (2019). Decreased adiposity and enhanced glucose tolerance in Zyflamend treated mice. The FASEB Journal 33, 754.755-754.755.

4. MacDonald, A.F., Bettaieb, A., Donohoe, D.R., et al. (2018). Concurrent regulation of LKB1 and CaMKK2 in the activation of AMPK in castrate-resistant prostate cancer by a well-defined polyherbal mixture with anticancer properties. BMC complementary and alternative medicine 18, 188.

5. Overby, H., Zu, Y., Wang, S., et al. (2017). Nanoparticles encapsulated with resveratrol induce browning of white adipocytes. The FASEB Journal 31, 44.43-44.43.

6. Bettaieb A, Koike S, Hsu MF, Ito Y, Chahed S, Bachaalany S, Gruzdev A, Calvo-Rubio M, Lee KSS, Inceoglu B, Imig JD, Villalba JM, Zeldin DC, Haj FG, Hammock BD. Soluble epoxide hydrolase in podocytes is a significant contributor to renal function under hyperglycemia. Biochim Biophys Acta. 2017. PubMed PMID: 28757338.

A. Research papers:

Complete list of publications:
https://www.ncbi.nlm.nih.gov/myncbi/16o7gUz8_0CQn/bibliography/public/

1. ***Bettaieb A***, Averill-Bates DA. Thermotolerance induced at a mild temperature of 40 degrees C protects cells against heat shock-induced apoptosis. Journal of cellular physiology. 2005; 205(1):47-57.

2. Wrzal PK, ***Bettaieb A***, Averill-Bates DA. Molecular mechanisms of apoptosis activation by heat shock in multidrug-resistant Chinese hamster cells. Radiation research. 2008; 170(4):498-511.

3. ***Bettaieb A***, Averill-Bates DA. Thermotolerance induced at a fever temperature of 40 degrees C protects cells against hyperthermia-induced apoptosis mediated by death receptor signaling. Biochemistry and cell biology. 2008; 86(6):521-38.

4. Roy J, Pallepati P, ***Bettaieb A***, Tanel A, Averill-Bates DA. Acrolein induces a cellular stress response and triggers mitochondrial apoptosis in A549 cells. Chemico-biological interactions. 2009; 181(2):154-67.

5. Roy J, Pallepati P, ***Bettaieb A***, Averill-Bates DA. Acrolein induces apoptosis through the death receptor pathway in A549 lung cells: role of p53. Canadian journal of physiology and pharmacology. 2010; 88(3):353-68.

6. Matsuo K, Delibegovic M, Matsuo I, Nagata N, Liu S, ***Bettaieb A***, Xi Y, Araki K, Yang W, Kahn BB, Neel BG, Haj FG. Altered glucose homeostasis in mice with liver-specific deletion of Src homology phosphatase 2. The Journal of biological chemistry. 2010; 285(51):39750-8.

7. Matsuo K******, ***Bettaieb A****, Nagata N, Matsuo I, Keilhack H, Haj FG. Regulation of brown fat adipogenesis by protein tyrosine phosphatase 1B. PloS one. 2011; 6(1):e16446.

8. ***Bettaieb A****, Liu S******, Xi Y, Nagata N, Matsuo K, Matsuo I, Chahed S[$], Bakke J[$], Keilhack H, Tiganis T, Haj FG. Differential regulation of endoplasmic reticulum stress by protein tyrosine phosphatase 1B and T cell protein tyrosine phosphatase. The Journal of biological chemistry. 2011; 286(11):9225-35.

9. Luria A******, ***Bettaieb A****, Xi Y, Shieh GJ, Liu HC, Inoue H, Tsai HJ, Imig JD, Haj FG, Hammock BD. Soluble epoxide hydrolase deficiency alters pancreatic islet size and improves glucose homeostasis in a model of insulin resistance. Proceedings of the National Academy of Sciences of the United States of America. 2011; 108(22):9038-43.

10. ***Bettaieb A***, Matsuo K, Matsuo I, Nagata N, Chahed S[$], Liu S, Haj FG. Adipose-specific deletion of Src homology phosphatase 2 does not significantly alter systemic glucose homeostasis. Metabolism: clinical and experimental. 2011; 60(8):1193-201.

11. Cummings BP, ***Bettaieb A***, Graham JL, Stanhope KL, Dill R, Morton GJ, Haj FG, Havel PJ. Subcutaneous administration of leptin normalizes fasting plasma glucose in obese type 2 diabetic UCD-T2DM rats. Proceedings of the National Academy of Sciences of the United States of America. 2011; 108(35):14670-5.

12. ***Bettaieb A***, Matsuo K, Matsuo I, Wang S, Melhem R[$], Koromilas AE, Haj FG. Protein tyrosine phosphatase 1B deficiency potentiates PERK/eIF2α signaling in brown adipocytes. PloS one. 2012; 7(4):e34412.

13. Nagata N, Matsuo K, ***Bettaieb A***, Bakke J[$], Matsuo I, Graham J, Xi Y, Liu S, Tomilov A, Tomilova N, Gray S, Jung DY, Ramsey JJ, Kim JK, Cortopassi G, Havel PJ, Haj FG. Hepatic Src homology phosphatase 2 regulates energy balance in mice. Endocrinology. 2012; 153(7):3158-69.

14. Inceoglu B, Wagner KM, Yang J, ***Bettaieb A***, Schebb NH, Hwang SH, Morisseau C, Haj FG, Hammock BD. Acute augmentation of epoxygenated fatty acid levels rapidly reduces pain-related behavior in a rat model of type I diabetes. Proceedings of the National Academy of Sciences of the United States of America. 2012; 109(28):11390-5.

15. Cummings BP, ***Bettaieb A***, Graham JL, Stanhope KL, Kowala M, Haj FG, Chouinard ML, Havel PJ. Vertical sleeve gastrectomy improves glucose and lipid metabolism and delays diabetes onset in UCD-T2DM rats. Endocrinology. 2012; 153(8):3620-32.

16. Vazquez Prieto MA, ***Bettaieb A***, Haj FG, Fraga CG, Oteiza PI. (-)-Epicatechin prevents TNFα-induced activation of signaling cascades involved in inflammation and insulin sensitivity in 3T3-L1 adipocytes. Archives of biochemistry and biophysics. 2012; 527(2):113-8.

17. Wang YI, ***Bettaieb A***, Sun C, DeVerse JS, Radecke CE, Mathew S, Edwards CM, Haj FG, AG, Simon SI. Triglyceride-rich lipoprotein modulates endothelial vascular cell adhesion molecule (VCAM)-1 expression via differential regulation of endoplasmic reticulum stress. PloS one. 2013; 8(10):e78322. **Contributions to Jointly Authored Works:** Research paper by Wang YI, Ahmed Bettaieb, and colleagues. Experiments designed by all authors. Bettaieb performed experimental work for figures 4, 5, and S4-S6. Written by Passerini and Simon. ***Work completed at the University of California-Davis.***

18. Cummings BP, ***Bettaieb A***, Graham JL, Kim J, Ma F, Shibata N, Stanhope KL, Giulivi C, Hansen F, Jelsing J, Vrang N, Kowala M, Chouinard ML, Haj FG, Havel PJ. Bile-acid-mediated decrease in endoplasmic reticulum stress: a potential contributor to the metabolic benefits of ileal interposition surgery in UCD-T2DM rats. Disease models & mechanisms. 2013; 6(2):443-56.

19. ***Bettaieb A***, Nagata N, AbouBechara D[$], Chahed S[$], Morisseau C, Hammock BD, Haj FG. Soluble epoxide hydrolase deficiency or inhibition attenuates diet-induced endoplasmic reticulum stress in liver and adipose tissue. The Journal of biological chemistry. 2013; 88(20):14189-99.

20. Lackey DE, Lynch CJ, Olson KC, Mostaedi R, Ali M, Smith WH, Karpe F, Humphreys S, Bedinger DH, Dunn TN, Thomas AP, Oort PJ, Kieffer DA, Amin R, ***Bettaieb A***, Haj FG, Permana P, TG, Adams SH. Regulation of adipose branched-chain amino acid catabolism enzyme expression and cross-adipose amino acid flux in human obesity. American journal of physiology. Endocrinology and metabolism. 2013; 304(11):E1175-87.

21. ***Bettaieb A****, Bakke J***[$], Nagata N, Matsuo K, Xi Y, Liu S, AbouBechara D, Melhem R, Stanhope K, Cummings B, Graham J, Bremer A, Zhang S, Lyssiotis CA, Zhang ZY, Cantley LC, Havel PJ, Haj FG. Protein tyrosine phosphatase 1B regulates pyruvate kinase M2 tyrosine phosphorylation. The Journal of biological chemistry. 2013; 288(24):17360-71.

22. Bakke J[$], ***Bettaieb A***, Nagata N, Matsuo K, Haj FG. Regulation of the SNARE-interacting protein Munc18c tyrosine phosphorylation in adipocytes by protein-tyrosine phosphatase 1B. Cell communication and signaling: CCS. 2013; 11:57.

23. ***Bettaieb A***, Chahed S[$], Tabet G[$], Yang J, Morisseau C, Griffey S, Hammock BD, Haj FG. Effects of soluble epoxide hydrolase deficiency on acute pancreatitis in mice. PloS one. 2014; 9(11):e113019.

24. Warden CH, Slupsky C, Griffey SM, ***Bettaieb A***, Min E, Le A, Fisler JS, Hansen S, Haj F, Stern JS. Brown Norway chromosome 1 congenic reduces symptoms of renal disease in fatty Zucker rats. PloS one. 2014; 9(1):e87770.

25. ***Bettaieb A***, Xi Y, Hosein E[$], Coggins N[$], Bachaalany S[$], Wiede F, Perez S, Griffey SM, Sastre J, Tiganis T, Haj FG. Pancreatic T cell protein-tyrosine phosphatase deficiency ameliorates cerulein-induced acute pancreatitis. Cell communication and signaling: CCS. 2014; 12:13.

26. Cummings BP, ***Bettaieb A***, Graham JL, Stanhope K, Haj FG, Havel PJ. Administration of pioglitazone alone or with alogliptin delays diabetes onset in UCD-T2DM rats. The Journal of endocrinology. 2014; 221(1):133-44.

27. Tanel A, Pallepati P, ***Bettaieb A***, Morin P, Averill-Bates DA. Acrolein activates cell survival and apoptotic death responses involving the endoplasmic reticulum in A549 lung cells. Biochimica et biophysica acta. 2014; 1843(5):827-35.

28. ***Bettaieb A****, Vazquez Prieto MA******, Rodriguez Lanzi C, Miatello RM, Haj FG, Fraga CG, Oteiza PI. (-)-Epicatechin mitigates high-fructose-associated insulin resistance by modulating redox signaling and endoplasmic reticulum stress. Free radical biology & medicine. 2014; 72:247-56.

29. Liu S, Xi Y, ***Bettaieb A***, Matsuo K, Matsuo I, Kulkarni RN, Haj FG. Disruption of protein-tyrosine phosphatase 1B expression in the pancreas affects β-cell function. Endocrinology. 2014; 155(9):3329-38.

30. ***Bettaieb A***, Morisseau C, Hammock B, Haj F. Soluble epoxide hydrolase deficiency ameliorates acute pancreatitis in mice. Free radical biology & medicine. 2014; 75 Suppl 1:S32.

31. Glory A******, ***Bettaieb A****, Averill-Bates DA. Mild thermotolerance induced at 40°C protects cells against hyperthermia-induced pro-apoptotic changes in Bcl-2 family proteins. International journal of hyperthermia: the official journal of European Society for Hyperthermic Oncology, North American Hyperthermia Group. 2014; 30(7):502-12.

32. Tomilov A, ***Bettaieb A***, Kim K, Sahdeo S, Tomilova N, Lam A, Hagopian K, Connell M, Fong J, Rowland D, Griffey S, Ramsey J, Haj F, Cortopassi G. Shc depletion stimulates brown fat activity in vivo and in vitro. Aging cell. 2014; 13(6):1049-58.

33. Xi Y, Liu S, ***Bettaieb A***, Matsuo K, Matsuo I, Hosein E[$], Chahed S[$], Wiede F, Zhang S, Zhang ZY, Kulkarni RN, Tiganis T, Haj FG. Pancreatic T cell protein-tyrosine phosphatase deficiency affects beta cell function in mice. Diabetologia. 2015; 58(1):122-31.

34. ***Bettaieb A***, Averill-Bates DA. Thermotolerance induced at a mild temperature of 40°C alleviates heat shock-induced ER stress and apoptosis in HeLa cells. Biochimica et biophysica acta. 2015; 1853(1):52-62.

35. Vazquez Prieto MA******, ***Bettaieb A****, Rodriguez Lanzi C, Soto VC, Perdicaro DJ, Galmarini CR, Haj FG, Miatello RM, Oteiza PI. Catechin and quercetin attenuate adipose inflammation in fructose-fed rats and 3T3-L1 adipocytes. Molecular nutrition & food research. 2015; 59(4):622-33.

36. Jialal I, Devaraj S, ***Bettaieb A***, Haj F, Adams-Huet B. Increased adipose tissue secretion of Fetuin-A, lipopolysaccharide-binding protein and high-mobility group box protein 1 in metabolic syndrome. Atherosclerosis. 2015; 241(1):130-7.

37. Harris TR, ***Bettaieb A***, Kodani S, Dong H, Myers R, Chiamvimonvat N, Haj FG, Hammock BD. Inhibition of soluble epoxide hydrolase attenuates hepatic fibrosis and endoplasmic eticulum stress induced by carbon tetrachloride in mice. Toxicology and applied pharmacology. 2015; 286(2):102-11.

38. Inceoglu B******, ***Bettaieb A****, Trindade da Silva CA, Lee KS, Haj FG, Hammock BD. Endoplasmic reticulum stress in the peripheral nervous system is a significant driver of neuropathic pain. Proceedings of the National Academy of Sciences of the United States of America. 2015; 112(29):9082-7.

39. ***Bettaieb A***, Chahed S[$], Bachaalany S[$], Griffey S, Hammock BD, Haj FG. Soluble epoxide hydrolase pharmacological inhibition ameliorates experimental acute pancreatitis in mice. Molecular pharmacology. 2015; 88(2):281-90.

40. ***Bettaieb A****, Jiang JX******, Sasaki Y, Chao TI, Kiss Z, Chen X, Tian J, Katsuyama M, Yabe-Nishimura C, Xi Y, Szyndralewiez C, Schröder K, Shah A, Brandes RP, Haj FG, Török NJ. Hepatocyte nicotinamide

adenine dinucleotide phosphate reduced oxidase 4 regulates stress signaling, fibrosis, and insulin sensitivity during development of steatohepatitis in mice. Gastroenterology. 2015; 149(2):468-80.e10.

41. McGavigan AK, Garibay D, Henseler ZM, Chen J, ***Bettaieb A***, Haj FG, Ley RE, Chouinard ML, Cummings BP. TGR5 contributes to glucoregulatory improvements after vertical sleeve gastrectomy in mice. Gut. 2015; 2015-309871

42. ***Bettaieb A***, Hosein E[$], Chahed S[$], Abdulaziz A[$], Kucera HR, Gaikwad NW, Haj FG. Decreased adiposity and enhanced glucose tolerance in shikonin treated mice. Obesity (Silver Spring, Md.). 2015; 23(11):2269-77.

43. Cremonini E***, ***Bettaieb A****, Haj FG, Fraga CG, Oteiza PI. (-)-Epicatechin improves insulin sensitivity in high fat diet-fed mice. Archives of biochemistry and biophysics. 2016; 599:13-21.

44. Tomilov A, Tomilova N, Shan Y, Hagopian K, ***Bettaieb A***, Kim K, Pelicci PG, Haj F, Ramsey J, Cortopassi G. p46Shc inhibits thiolase and lipid oxidation in mitochondria. The Journal of biological chemistry. 2016; 291(24):12575-85.

45. Sirish P, Li N, Timofeyev V, Zhang XD, Wang L, Yang J, Lee KS, ***Bettaieb A***, Ma SM, Lee JH, Su D, Lau VC, Myers RE, Lieu DK, López JE, Young JN, Yamoah EN, Haj F, Ripplinger CM, Hammock BD, Chiamvimonvat N. Molecular mechanisms and new treatment paradigm for atrial fibrillation. circulation. arrhythmia and electrophysiology. 2016; 9(5).

46. ***Bettaieb A***, Koike S[$], Chahed S[$], Bachaalany S[$], Griffey S, Sastre J, Haj FG. Pancreatic protein tyrosine phosphatase 1B deficiency exacerbates acute pancreatitis in mice. The American journal of pathology. 2016; 186(8):2043-54.

47. ***Bettaieb A****, Cremonini E*, Kang H, Kang J, Haj FG, Oteiza PI. Anti-inflammatory actions of (-)-epicatechin in the adipose tissue of obese mice. The international journal of biochemistry & cell biology. 2016; S1357-2725(16)30261.

48. Johnstone M, Bennett N, Standifer C, Smith A, Han A, ***Bettaieb A***, Whelan J. and Donohoe D. Characterization of the pro-inflammatory cytokine il-1beta on butyrate oxidation in colorectal cancer cells. J Cell Biochem. 2016; 118(6):1614-1621.

49. Hsu MF, ***Bettaieb A***, Ito Y, Graham J, Havel PJ, Haj FG. Protein tyrosine phosphatase Shp2 deficiency in podocytes attenuates lipopolysaccharide-induced proteinuria. Sci Rep. 2017; 7: 461.

50. Trindade-da-Silva CA***, ***Bettaieb A****, Napimoga MH, Lee KSS, Inceoglu B, Ueira-Vieira C, Bruun D, Goswami SK, Haj FG, Hammock BD. Soluble epoxide hydrolase pharmacological inhibition decreases alveolar bone loss by modulating host inflammatory response, rank-related signaling, endoplasmic reticulum stress, and apoptosis. J Pharmacol Exp Ther. 2017; 361: 408-416

51. ***Bettaieb A***[#], Koike S[$], Chahed S[$], Zhao Y[$], Bachaalany S[$], Hashoush N, Graham J, Fatima H, Havel PJ, Gruzdev A, Zeldin DC, Hammock BD, Haj FG. Podocyte-specific soluble epoxide hydrolase deficiency in mice attenuates acute kidney injury. FEBS J. 2017; 284: 1970-1986.

52. ***Bettaieb A***, Koike S[$], Hsu MF, Ito Y, Chahed S[$], Bachaalany S[$], Gruzdev A, Calvo-Rubio M, Lee KSS, Inceoglu B, Imig JD, Villalba JM, Zeldin DC, Hammock BD, Haj FG. Soluble epoxide hydrolase in podocytes is a significant contributor to renal function under hyperglycemia. Biochimica et biophysica acta. 2017: S0304-4165(17)30238-6.

53. Inceoglu B*[#], ***Bettaieb A***[*#], Haj FG, Gomes AV, Hammock BD. Modulation of mitochondrial dysfunction and endoplasmic reticulum stress are key mechanisms for the wide-ranging actions of epoxy fatty acids and soluble epoxide hydrolase inhibitors, Prostaglandins Other Lipid Mediat. 2017; 133:68-78.

54. Ito Y, Hsu MF, ***Bettaieb A***, Koike S[$], Mello A, Calvo-Rubio M, Villalba JM, Haj FG. Protein tyrosine phosphatase 1B deficiency in podocytes mitigates hyperglycemia-induced renal injury. Metabolism. 2017; 76:56-69.

55. Warden CH, ***Bettaieb A***, Min E, Fisler JS, Haj FG, Stern JS. Chow fed UC Davis strain female Lepr fatty Zucker rats exhibit mild glucose intolerance, hypertriglyceridemia, and increased urine volume, all reduced by a Brown Norway strain chromosome 1 congenic donor region. PLoS One. 2017; 12(12):e0188175.

56. Cremonini E, Wang Z, Bettaieb A, Adamo AM, Daveri E, Mills DA, Kalanetra KM, Haj FG, Karakas S, Oteiza PI. (-)-Epicatechin protects the intestinal barrier from high fat diet-induced permeabilization: Implications for steatosis and insulin resistance. Redox Biol. 2018: 588-599.

57. MacDonald AF, ***Bettaieb A***, Donohoe DR, Alani DS[$], Han A, Zhao Y[$], Whelan J. Concurrent regulation of LKB1 and CaMKK2 in the activation of AMPK in castrate-resistant prostate cancer by a well-defined polyherbal mixture with anticancer properties. BMC Complement Altern Med. 2018; 18(1):188.

58. Han A, Bennett N, **Bettaieb A**, Whelan J, Donohoe DR. Butyrate decreases its own oxidation in colorectal cancer cells through inhibition of histone deacetylases. Oncotarget. 2018; 9(43):27280-27292.

59. Tomilov A, Allen S, Hui CK, **Bettaieb A**, Cortopassi G. Idebenone is a cytoprotective insulin sensitizer whose mechanism is Shc inhibition. Pharmacol Res. 2018;137:89-103.

60. Alquraishi M[$], Puckett DL[$], Alani DS[$], Humidat AS[$], Frankel VD[$], Donohoe DR, Whelan J, **Bettaieb A** Pyruvate kinase M2: a simple molecule with complex functions. Free Radic Biol Med. 2019; 143:176-192.

61. Puckett D[$], Alquraishi M[$], Alani D[$], Chahed S[$], Frankel VD, Donohoe DR, Voy BH, Whelan J, and ***Bettaieb A***. Zyflamend, a Unique Herbal Blend, Inhibits Adipogenesis through the Coordinated Regulation of PKA and JNK. Adipocyte. 2020; 9:1, 454-471

62. Puckett D[$], Alquraishi M[$], Alani DA[$], Chahed S[$], Donohoe DR, Voy BH, Whelan J, and ***Bettaieb A***. Zyflamend Induces Apoptosis in Pancreatic Cancer cells via Modulation of the JNK Pathway. Cell Communication and Signaling. 2020; 14;18(1):126.

63. Strong MD, Hart MD, Z. Tang TZ, Ojo BA, Wu L, Nacke MR, Agidew WT, Hwang HJ, Hoyt PR, ***Bettaieb A***., Clarke SL, Smith BJ, Stoecker BJ, Lucas EA, Lin D, Chowanadisai W. Role of zinc transporter ZIP12 in susceptibility-weighted brain magnetic resonance imaging (MRI) phenotypes and mitochondrial function. The FASEB Journal. 2020. 2020;34:12702–12725.

64. Overby H, Yang Y, Xu X, Graham K, Hildreth K. Choi S, Wan D, Morisseau C, Zeldin DC, Hammock BD, Wang S, ***Bettaieb A***, and Zhao L. Soluble Epoxide Hydrolase Inhibition by t-TUCB Promotes Brown Adipogenesis and Reduces Serum Triglycerides in Diet-Induced Obesity. 2020. Int J Mol Sci 21(19).

65. Puckett D, Alquraishi M, Chowanadisai W, and ***Bettaieb A***. The Role of PKM2 in Metabolic Reprogramming: Insights into the Regulatory Roles of Non-Coding RNAs. 2021. Int J Mol Sci 22(3).

66. Yang Y, Xu X, Wu H, Yang J, Chen J, Morisseau C, Hammock BD, ***Bettaieb A***, and L. Zhao L. Differential Effects of 17,18-EEQ and 19,20-EDP Combined with Soluble Epoxide Hydrolase Inhibitor t-TUCB on Diet-Induced Obesity in Mice. 2021. Int J Mol Sci 22(15).

67. Davis DN, Strong MD, Chambers E, Hart MD, ***Bettaieb A***, Clarke SL, Smith BJ, Stoecker BJ, Lucas EA, Lin D, Chowanadisai W. A role for zinc transporter gene SLC39A12 in the nervous system and beyond. 2021. Gene 799-145824.

68. Koike S, Hsu MF, ***Bettaieb A***, Chu B, Matsumoto N, Morisseau C, Havel PJ, Huising MO, Hammock BD, and Haj FG. Genetic deficiency or pharmacological inhibition of soluble epoxide hydrolase ameliorates high fat diet-induced pancreatic β-cell dysfunction and loss, Free radical biology & medicine. 2021. 48-57.

B. Book Chapter

2012: ***Ahmed Bettaieb,*** Paulina Wrzal and Diana Averill-Bates. Book title: Current Cancer Treatment - Novel Beyond Conventional Approaches Chapter title: Hyperthermia: Cancer Treatment and Beyond.

C. Oral and Poster Presentations

2003- ***Bettaieb A*** and Averill-Bates DA. Protection against apoptosis by thermotolerance induced At 40°C. 1st International Congress on Stress Responses in Biology and Medicine. Mount Saint-Anne castle, QC, Canada.

2003- ***Bettaieb A*** and Averill-Bates DA. Thermotolerance protects cells against apoptosis induced by oxidative stress and heat shock. 28th Congress of the Biologist association of Quebec. Montreal, QC, Canada.

2003- ***Bettaieb A*** and Averill-Bates DA.; Molecular mechanisms of cytotoxicity induced by hyperthermia. Annual meeting of TOXEN Center. Montreal, QC, Canada.

2003- Averill-Bates DA and ***Bettaieb A***, Hyperthermia and anticancer drugs; ways to oxidative stress. University of Iowa. Iowa, IA, USA.

2003- Averill-Bates DA and ***Bettaieb A***. The induction of apoptosis by hyperthermia in HeLa cells. University of Montreal. Montréal, QC, Canada.

2003- Averill-Bates DA and ***Bettaieb A***. Thermotolerance protects cells against apoptosis induced by oxidative stress and heat shock. 10th Annual Meeting of the Society for Free Radical & Medicine. Seattle, WA, USA.

2004- ***Bettaieb A*** and D.A Averill-Bates. Thermotolerance protects cells against apoptosis induced by oxidative stress a d heat shock. 4th Annual Meeting of the Oxidative Stress Consortium on Health and Disease. Toronto, Canada.

2004- ***Bettaieb A*** and Averill-Bates DA. Thermotolerance protects cells against apoptosis induced by oxidative stress and heat shock. Annual meeting of TOXEN Center. Montreal, QC, Canada.

2004- ***Bettaieb A*** and Averill-Bates DA. Thermotolerance protects cells against apoptosis induced by oxidative stress and heat shock. 4th Oxidative Stress Consortium Meeting. Montreal, QC, Canada. D.A.

2004- Averill-Bates DA and ***Bettaieb A***. Induction of apoptosis by heat shock: relevance to cancer. 4th Canadian Oxidative Stress Consortium. Montreal, QC, Canada.

2005- ***Bettaieb A*** and Averill-Bates DA. Hyperthermia induces apoptosis via the cell death receptor Fas pathway. Annual Meeting of TOXEN Center. Montreal, QC, Canada.

2005- Averill-Bates DA and ***Bettaieb A***. Thermotolerance induced at a mild temperature of 40°C protects cells against heat shock-induced apoptosis, poster presentation. Society for Thermal Medicine Workshop on Thermal Medicine Heat Shock Proteins and Cancer. NIH Natcher Center Bethesda, MD, USA.

2005- Ouellette ME, ***Bettaieb A***, and Averill-Bates DA. Pro-apoptotic properties of carnosic acid. Annual Meeting of TOXEN Center. Montreal, QC, Canada.

2006- ***Bettaieb A*** and Averill-Bates DA. Thermotolerance protects HeLa cells against Fas/Apo-1 mediated apoptosis induced by heat shock. Annual Meeting of BioMed Center. Montreal, QC, Canada.

2006- Averill-Bates DA and ***Bettaieb A***. Thermotolerance protects cells against Fas/Apo-1 mediated apoptosis induced by heat shock. Annual Meeting of the Society for Thermal Medicine (formerly the North American Hyperthermia Society-NAHS). Bethesda, MD, USA.

2006- Averill-Bates DA and ***Bettaieb A***, Wang Z. Role of oxidative stress in hyperthermia-induced Apoptosis. Annual Meeting of the Society for Thermal Medicine. Washington, DC, USA.

2007- ***Bettaieb A***, and Averill-Bates DA. Carnosic acid induces apoptosis of HeLa cells via death receptor and mitochondrial pathways. 5th Canadian Oxidative Stress Consortium Meeting. Montreal, QC, Canada.

2007- ***Bettaieb A*** and Averill-Bates DA. Thermotolerance protects HeLa cells against Fas/Apo-1 mediated apoptosis induced by heat shock. 5th Canadian Oxidative Stress Consortium Meeting. Montreal, QC, Canada.

2007- ***Bettaieb A*** and Averill-Bates DA. Protective effects of thermotolerance against alterations of calcium homeostasis by lethal heat shock. Annual Meeting of TOXEN Center. Montreal, QC, Canada.

2007- ***Bettaieb A*** and Averill-Bates DA. Thermotolerance protects HeLa cells against Fas/Apo-1 mediated apoptosis induced by heat shock. 9th Annual Chemistry and Biochemistry. Graduate Research Conference, Concordia University. Montreal, QC, Canada.

2007- Zilber Y, ***Bettaieb A***, and Averill-Bates DA. Acrolein induces apoptosis via endoplasmic reticulum stress in A549 cells. 9th Annual Chemistry and Biochemistry. Graduate Research Conference, Concordia University. Montreal, QC, Canada.

2007- ***Bettaieb A*** and Averill-Bates DA. Thermotolerance: the other side of hyperthermia. Annual Meeting of TOXEN Center. Montreal, QC, Canada.

2007- ***Bettaieb A***, Ouellette ME, and Averill-Bates DA. Carnosic acid induces apoptosis of HeLa cells via death receptor and mitochondrial pathways. Annual Meeting of TOXEN Center. Montreal, QC, Canada.

2008- Averill-Bates DA, Roy J, ***Bettaieb A***. Role of p53 in acrolein induced apoptosis in A549 cells. 15th Annual Meeting of the Society for Free Radical & Medicine. San Francisco, CA, USA.

2009- Averill-Bates DA, Roy J, Tanel A, Pallepati P, and ***Bettaieb A***. Activation of apoptotic signalling cascades by the lipid peroxidation-derived aldehyde acrolein: implication for human health. 6th meeting of the Canadian Oxidative Stress Consortium. Winnipeg, Canada.

2010- ***Bettaieb A***, Kinkhabwala A, Schultz C, Neel B, Bastiaens P, Haj FG. Dynamic regulation of signaling at regions of cell-cell contact by endoplasmic reticulum-bound protein-tyrosine phosphatase 1B. Oxygen Club of California Annual Meeting. Santa Barbara, CA, USA.

2012- ***Bettaieb A***, Matsuo K, I. Matsuo, F.G. Haj. Adipose-specific deletion of protein-tyrosine phosphatase 1b alters energy balance in mice. 94th Annual Meeting of the Endocrine Society. Houston, TX, USA

2012- Cremonini E, ***Bettaieb A***, Vazquez Prieto MA, Cervellati C, Haj FG, Oteiza PI. (−)-Epicatechin prevents TNFα-induced activation of signaling cascades involved in inflammation and insulin sensitivity in 3T3-L1 adipocytes. 5th International Conference on Polyphenols and Health. Sitges, Spain.

2013- ***Bettaieb A***, Bakke J[$], Nagata N, Matsuo K, Cantley LC, Havel PJ, and Haj FG. New insights into metabolic regulation by Protein-Tyrosine Phosphatase 1B. 5th International Symposium in Nutrition and free radicals biology. Paris, France.

2013- Cremonini E, ***Bettaieb A***, Vazquez Prieto MA, Cervellati C, Haj FG, Oteiza PI. (-)-Epicatechin and its metabolites in the modulation of hepatic NADPH oxidase. 5th International Symposium in Nutrition and free radicals biology. Paris, France.

2013- Cremonini E, ***Bettaieb A***,Cervellati C, Haj FG, Vazquez Prieto MA, Oteiza PI. (-)-Epicatechin and its metabolites inhibit hyperlipidemia-induced oxidative stress through the transcriptional and post trascriptional modulation of NADPH oxidase. 6th International congress Polyphenols and Health, Buenos Aires, Brazil.

2014- ***Bettaieb A***, Xi Y, Hosein E[$], Coggins N[$], Bachaalany SM[$], Perez FS, Griffey s, J. Sastre S, Tiganis T, and Haj FG. Pancreatic T cell protein-tyrosine phosphatase deficiency ameliorates cerulein-induced acute pancreatitis. Oxygen Club of California Annual Meeting. Davis, CA, USA.
[$]***Co-authored by a mentored student.***

2014- Cremonini E, ***Bettaieb A***, Cervellati C, Haj FG, Vazquez Prieto MA, Oteiza PI. (-)-Epicatechin modulates hepatic redox-sensitive signals in animal and cell models of metabolic syndrome. 17th Biannual Meeting of Society for Free Radical International Research. Kyoto, Japan.

2014- Cremonini E, ***Bettaieb A***, Haj FG, Oteiza PI. Effects of (-)-epicatechin on hepatic redox-signaling and insulin sensitivity in in vitro and in vivo obesity models. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2014- Cremonini E, ***Bettaieb A***, Billiard L, Haj FG, Fraga GC, Oteiza PI. Dietary (-)-epicatechin supplementation improves insulin sensitivity by modulation redox-sensitive signals. 3rd International Conference of Cellular Environmental stress in biology and medicine. Ferrara, Italy.

2014- Cremonini E, ***Bettaieb A***, Vazquez Prieto MA, Billiard L, Haj FG, Fraga GC, Oteiza PI. (-)-Epicatechin mitigates insulin resistance by modulating redox-sensitive signals in animal models of metabolic syndrome. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2014- Hsu MF, ***Bettaieb A***, Chahed S[$], Tabet G[$], Morisseau C, Griffey S, Hammock BD, Haj FG. Soluble epoxide hydrolase deficiency ameliorates cerulein-induced acute pancreatitis in mice. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2014- Ito Y, Chahed S[$], Koike S[$], Baachaalany SM[$], ***Bettaieb A***, Haj FG. PTP1B deficiency exacerbates cerulein-induced acute pancreatitis in mice. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2014-***Bettaieb A***, Bakke J, Nagata N, Matsuo K, Xi Y, , Liu S, Bechara DA[$], Melhem R[$], Stanhope K, Cummings B, Graham J, Bremer A, Zhang S, Lyssiotis C A, Zhang ZY, Cantley L C, Havel PJ, Haj FG. Protein-tyrosine phosphatase 1B regulates pyruvate kinase M2 tyrosine phosphorylation. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2014- Tomilov A, ***Bettaieb A***, Kim K, Sahdeo S, Tomilova N, Lam A, Hagopian K, Conell M, Fong J, Ronald D, Griffey S, Ramsey JJ, Haj FG, Cortopassi G. SHC depletion stimulates brown fat activity in-vivo and in-vitro. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2014-Bakke J[$], ***Bettaieb A***, Nagata N, Matsuo K, Haj FG. SNARE-protein, munc18c, is regulated by protein tyrosine phosphatase 1b in adipocytes. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2015- Cremonini E, ***Bettaieb A***, Haj FG, Oteiza PI. (-)-Epicatechin improves hepatic insulin sensitivity and redox-signaling in in vitro and in vivo obesity models. 7th International Conference on Polyphenols and Health. Tours, France.

2015- Cremonini E, ***Bettaieb A***, Haj FG, Oteiza PI. Effects of (-)-Epicatechin on hepatic redox-signaling and insulin sensitivity in in vitro and in vivo obesity models. Oxygen Club of California Annual Meeting. Valencia, Spain.

2015- Haj FG, ***Bettaieb A***, and Hammock BD. Targeting diabetic nephropathy through podocyte-specific soluble epoxide hydrolase deficiency in mice. Oxygen Club of California Annual Meeting. Valencia, Spain.

2016- ***Bettaieb A***, Hsu MF, Ito Y, Chahed S[$], Bachaalany SM[$], Rubio, Inceoglu B, Lee KSS, Gruzdev A, Villalba JM, Zeldin DC, Hammock BD, Haj FG. Soluble epoxide hydrolase podocyte deficiency protects against hyperglycemia-induced renal injury and improves systemic glucose homeostasis. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2016- ***Bettaieb A***, Koike S[$], Chahed S[$], Bachaalany SM[$], Graham J, Havel PJ, Zeldin DC, Hammock BD, Haj FG. Soluble epoxide hydrolase deficiency in the glomerular podocytes attenuates lipopolysaccharide-induced proteinuria. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2016- Haj FG, and ***Bettaieb A*** ER Stress as a Possible Unifying Mechanism for the Action of EETs and Other Regulatory Lipids for Diabetes and Associated Diseases. International Winter Eicosanoid Conference. Baltimore, MD. USA.

2016- Haj FG, ***Bettaieb A*** and Hammock BD Targeting diabetic nephropathy through podocyte-specific soluble epoxide hydrolase deficiency in mice. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2016- Bachaalany SM[$], ***Bettaieb A***, Chahed S[$], Griffey S, Hammock BD, Haj FG. Soluble epoxide hydrolase pharmacological inhibition ameliorates experimental acute pancreatitis in mice. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2016- Wang Z, Cremonini E, ***Bettaieb A***, F.G. Haj, Oteiza PI. (-)-Epicatechin prevents high-fat diet-induced intestinal permeabilization and endotoxemia in mice: a link to insulin sensitivity. Oxygen Club of California Annual Meeting. Davis, CA, USA.

2016- Wang Z, Cremonini E, ***Bettaieb A***, Haj FG, and Oteiza PI. (-)-Epicatechin prevents high-fat diet-induced intestinal permeabilization and insulin resistance in mice. Experimental Biology Annual Meeting. Los Angeles, CA.USA.

2016- ***Bettaieb A***, Chahed S[$], Bachaalany SM[$], Griffey S, Hammock BD, Haj FG. Pharmacological Inhibition of Soluble Epoxide Hydrolase Ameliorates Experimental Acute Pancreatitis in Mice. Experimental Biology Annual Meeting. Los Angeles, CA.USA.

2016- Whitehead K[$], Chahed S[$], Koike S[$], Bachaalany SM[$], and Haj FG, ***Bettaieb A***. Pancreatic Protein Tyrosine Phosphatase 1B Deficiency Exacerbates Acute Pancreatitis in Mice. Experimental Biology Annual Meeting. Los Angeles, CA.USA.

2016- Warden CH, ***Bettaieb A***, Min E, Haj FG, and Stern J. Effects Of Body And Fat Depot Weights On Quantitative Levels Of Kidney Expressed Kidney Disease Genes In Lean And Obese, Male And Female Zucker Rats. 13th International Congress on Obesity. Vancouver, Canada.

2016- ***Bettaieb A.*** Beige can be slimming, new insights into the metabolic functions of adipose Pyruvate kinase M2. Los Angeles, CA. Global summit on Obesity and Diet management. September 2016.

2016- MacDonald AF, Zhao Y[$], Han A, Donohoe DR, ***Bettaieb A***, and Whelan J. A combination of herbal extracts increases LKB1-dependent activation of AMPK in a model of advanced prostate cancer. Poster Presentation at the 25th annual American Institute for Cancer Research. Bethesda, MD.

2017- ***Bettaieb A.*** New insights into the metabolic functions of protein tyrosine phosphatase 1B. Spring 2017 BCMB Graduate Research Colloquium, UT, Knoxville, TN.

2017- Alquraishi M[$] and ***Bettaieb A.*** Soluble epoxide hydrolase in podocytes is a significant contributor to renal function under hyperglycemia. Poster Presentation at the 13th Annual CEHHS Graduate Student Research Colloquium (March), Knoxville, TN.

2017- Alquraishi M[$] and ***Bettaieb A.*** Podocyte-specific soluble epoxide hydrolase deficiency attenuates acute kidney injury. Poster Presentation at the 13th Annual CEHHS Graduate Student Research Colloquium (March), Knoxville, TN.

2017- MacDonald AF, Zhao Y[$], Han A, Donohoe DR, ***Bettaieb A***, Whelan J. A combination of herbal extracts targets prostate cancer by upregulating AMPK thru the tumor suppressor protein LKB1. Poster Presentation at the 13th Annual CEHHS Graduate Student Research Colloquium (March), Knoxville, TN.

2017- MacDonald AF, Zhao Y[$], Han A, Donohoe DR, ***Bettaieb A***, Whelan J. A combination of herbal extracts increases LKB1-dependent activation of AMPK in a model of advanced prostate cancer. Poster Presentation at the 25th annual American Institute for Cancer Research 2016 (November), Bethesda, MD.

2017- Han A, MacDonald A, ***Bettaieb A***, Whelan J, and Donohoe DR. Butyrate regulates its own metabolic fate as an HDAC inhibitor in colorectal cancer cells. The FASEB Journal. 2017;31:300.302.

2017- MacDonald A, Donohoe DR, ***Bettaieb A***, Han A, Zhao Y[$], and Whelan J. A Combination of herbal extracts targets prostate cancer by upregulating ampk thru the tumor suppressor protein lkb1. The FASEB Journal. 2017;31:646.636.

2018- Humidat A[$], Chahed S[$], Hammock BD, and ***Bettaieb A.*** Soluble epoxide hydrolase deficiency in podocytes improves renal function under hyperglycemia. 4th Annual Women in STEM Research Symposium. UT, Knoxville TN. Poster. Corresponding author.

2018- Alquraishi M[$], Alani D[$], Chahed S[$], Frankel VD[$], Whelan J, and ***Bettaieb A.*** Adipose-specific soluble epoxide hydrolase deficiency attenuates high fat diet-induced obesity in mice. 2018. 2018 Graduate Student Research Colloquium. UT, Knoxville, TN. Oral.

2018- Alquraishi M[$], Alani D[$], Chahed S[$], Frankel VD[$], Whelan J, and ***Bettaieb A.*** Zyflamend induces apoptosis in pancreatic cancer cells via modulation of endoplasmic reticulum stress and autophagy. Experimental Biology April 2018. San Diego, CA, USA. Poster.

2018- Puckett DL[$], Alani D[$], Chahed S[$], Frankel VD[$], Whelan J, and ***Bettaieb A.*** Zyflamend induces apoptosis in pancreatic cancer cells via modulation of endoplasmic reticulum stress and autophagy. Experimental Biology April 2018. San Diego, CA, USA. Oral. Corresponding author.

2018- Frankel VD[$], Chahed S[$], Alani D[$], Puckett DL[$], Voy B, Donohoe DR, Whelan J, and ***Bettaieb A.*** Effects of Zyflamend treatment on adipogenesis. Experimental Biology April 2018. San Diego, CA, USA. Poster.

2018- Overby H, Kearns J, Hildreth K, Chahed S, Kodani S, Morisseau C, Hammock BD, Wang S, ***Bettaieb A***, and Zhao L. Pharmacological inhibition of soluble epoxide hydrolase promotes brown adipogenesis. Experimental Biology. April 2018. San Diego, CA, USA. Poster.

2018- Whelan J, MacDonald AF, ***Bettaieb A***, Donohoe DR, Anna Han A, and Zhao Y. Cancer regulatory proteins LKB1 and CaMKK2 are antithetically regulated via the activation of PKCzeta and DAPK, respectively, by a well-defined polyherbal blend (PHB). American Society for Nutrition. 2018. Boston, MA, USA. Poster. Co-author.

2018- Alquraishi M[$], Alani D[$], Chahed S[$], Frankel VD[$], Whelan J, and ***Bettaieb A.*** Zyflamend attenuates high fat diet-induced obesity in mice. American Society for Nutrition. June 2018. Boston, MA, USA. Poster.

2018- Alquraishi M[$], Alani D[$], Chahed S[$], Frankel VD[$], Whelan J, and ***Bettaieb A.*** Zyflamend attenuates high fat diet-induced obesity in mice. Obesity Middle East 2018. Dubai, UAE. Oral.

2018- ***Bettaieb A***, Frankel VD[$], Alani D[$], Chahed S[$], Donohoe DR, and Whelan J. Zyflamend alters adipocytes differentiation and attenuates high fat diet-induced obesity in mice. The Obesity Society 2018. Nashville, TN, USA. Poster.

2019- ***Bettaieb A***, Puckett DL[$], Chahed S[$], and Whelan J. Zyflamend Induces Apoptosis in pancreatic cancer cells via modulation of the JNK pathway. The FASEB Journal, 2019, 33, lb282-lb282. Experimental Biology. April 2019. Orlando, FL, USA. Poster.

2019- Alquraishi M[$], Frankel VD[$], Donohoe DR, Voy B, Whelan J, and ***Bettaieb A.*** Decreased adiposity and enhanced glucose tolerance in Zyflamend treated mice. Experimental Biology. April 2019. Orlando, FL, USA. Poster.

2019- Ojo B, Hart M, Strong M, Hwang H, Hoy P, ***Bettaieb A***, Clarke S, Smith B, Lin D, Lucas E, and Chowanadisai W. Knockdown of Zinc Transporter ZIP12 by shRNA Alters Genes Related to Mitochondria and Neuronal Differentiation in Neuro-2a Cells. Current Developments in Nutrition. 3(S1).39.

2019- Hildreth K, Overby H, Kodani S, Morisseau C, Hammock B, ***Bettaieb A***, and Zhao L. Soluble Epoxide Hydrolase Inhibitor t-AUCB Promotes Murine Brown Adipogenesis: Role of PPAR Gamma and PPAR Alpha. Current Developments in Nutrition. 3(S1).39.

2019- Donohoe D, Park B, Kim JY, Porter H, Whelan J, and ***Bettaieb A***. Implications for Ulcerative Colitis and Colorectal Cancer: Role of Pyruvate Kinase M2 in Regulating the Oxidation of Fiber-derived Butyrate in the Diseased Colonocyte (OR04-04-19). Current Developments in Nutrition. 3(S1).39.

2019- Whelan J, MacDonald AF, ***Bettaieb A***, Donohoe DR, Han A, and Zhao Y[$]. LKB1 and CaMKK2, a tumor suppressor and a tumor promotor, are antithetically regulated by a well-defined blend of herbal extracts. 27th Conference of Functional Food Center on *"Functional Foods, Bioactive Compounds and Biomarkers: Health Promotion and Disease Management"*. Harvard Medical School. Oral

2019- Whelan J, Mountain DJH, Buckley MR, Terry PD, Kirkpatrick SS, Arnold JD, McNally MM, Grandas OH, Freeman MF, and Goldman MH. Treatment of 3T3-MBX preadipocytes with a well-defined blend of herbal extracts mediates anti-adipogenic effects via activation of AMPK, PKA and JNK signaling. 27th Conference of Functional Food Center on *"Functional Foods, Bioactive Compounds and Biomarkers: Health Promotion and Disease Management"*. Harvard Medical School. Oral

2020- Alquraishi M[$], Puckett DL[$], Chahed S[$], and ***Bettaieb A***. Novel Insights into the Role of Soluble Epoxide Hydrolase in Adipogenesis. The FASEB Journal **34**(S1): 1-1. Poster.

2020- Alquraishi M[$], Puckett DL[$], Chahed S[$], and ***Bettaieb A***. Pyruvate Kinase M2 Deficiency Promotes Brown Fat Adipogenesis in Vitro and Enhances Adaptive Thermogenesis in Vivo. The FASEB Journal **34**(S1): 1-1. Poster

2020- Puckett DL[$], Alquraishi M[$], Alani D[$], Chahed S[$], Donohoe DR, Whelan J, and ***Bettaieb A***. "Zyflamend Induces Apoptosis in Pancreatic Cancer cells via Modulation of the JNK Pathway. The FASEB Journal **34**(S1): 1-1. Poster

2020- Puckett DL[$], Alquraishi M[$], Alani D[$], Chahed S[$], Frankel VD[$], Donohoe DR, Voy B, J. Whelan J, and ***Bettaieb A***. " Zyflamend, a Unique Herbal Blend, Inhibits Adipogenesis Through the Coordinated Regulation of PKA and JNK." Current Developments in Nutrition. 4(S2): 454-454. Poster

2020- Graham K, Yang Y, ***Bettaieb A***, and Zhao L. Cytochrome P450 Epoxygenase Cyp2j13 Regulates Murine Brown Adipogenesis. Current Developments in Nutrition, 4(Supplement_2): p. 1639-1639.

2020- Yang Y, Xu X, Graham K, ***Bettaieb A***, Morissseau C, Hammock B, Wang S, and Zhao L. Pharmacological Inhibition of Soluble Epoxide Hydrolase by t-TUCB Improves Brown Adipose Tissue Activities in Diet-Induced Obesity. Current Developments in Nutrition, 4(S2): p. 1703-1703.

2020- Chambers E, Clarke S, Lucas E, Stoeker B, Chowanadisai W, ***Bettaieb A***, and Worknah W. Coding Polymorphisms in Zinc Transporter Gene SLC39A12 (ZIP12) Associated with Brain MRI Pattern Differences Have Reduced Zinc Transport Activity. Current Developments in Nutrition, 4(S2): p. 1783-1783.

2021- ***Bettaieb A***, Hubbard K, Puckett D, Dowker P, Alani D, Chahed S, Alquraishi M, and Whelan J, Zyflamend Supplementation Alleviates High-Fat Diet-Induced Obesity and Impairment of Skeletal Muscle Insulin Sensitivity, The FASEB Journal 35(S1).

2021- Dowker P, Hubbard K, Chahed S, Alani D, and ***Bettaieb A***, Pyruvate Kinase M2 Deficiency Enhances Brown Fat Adipogenesis and Activity, The FASEB Journal 35(S1).

2021- Hubbard K, Alquraishi M, Dowker P, Puckett D, Alani D, Chahed S, Chowanadisai W, and ***Bettaieb A***, Podocytes Specific Deletion of PKM2 Ameliorates LPS-induced Podocyte Injury through Regulation of Beta-Catenin Activity, The FASEB Journal 35(S1).

2021- Yang Y, Xu X, Morisseau C, Hammock BD, ***Bettaieb A***, and Zhao L. Differential Effects of Combined Soluble Epoxide Hydrolase inhibitor t-TUCB and n-3 Epoxide in Diet-Induced Obesity, The FASEB Journal 35(S1) (2021).

2021- Yang Y, Xu X, Morisseau C, Hammock BD, ***Bettaieb A***, Zhao L. Differential Effects of Combined Soluble Epoxide Hydrolase Inhibitor t-TUCB and n-3 Epoxides in Diet-Induced Obesity. Current Developments in Nutrition 5(Supplement_2) 1260-1260.

Awards & Fellowships

2020: Mary Helen Byers Award, The University of Tennessee-Knoxville.
2019: Frances Speight Clark Faculty Support Award, The University of Tennessee-Knoxville
2017: The Board of Advisors Faculty Support Award, The University of Tennessee-Knoxville
2012: The Carpenter Travel Award: Department of Nutrition, University of California, Davis
2007: Excellence Award: Ministère de l'Éducation du Québec (MEQ). Two years duration.
2007: Best poster presentation Award: 5th Oxidative Stress Consortium; University of Quebec at Montreal.
2007: Best poster presentation Award: The Spring Conference; University of Montreal.
2007: Excellence Award: Faculty of sciences of the University of Quebec at Montreal (Funds of the department of biological sciences).
2006: Excellence Award: Ministère de l'Éducation du Québec.
2005: Excellence Award: The foundation of University of Quebec at Montreal.
2005: Excellence Award: Faculty of Sciences of the University of Quebec
2005: Best poster presentation. TOXEN (Research center for environmental toxicology) annual meeting; University of Quebec at Montreal.
2004: Excellence Award: The foundation of University of Quebec at Montreal.
2004: Best presentation Award: 28th annual congress of the biologist association of Quebec.
2004: Best poster Award: TOXEN (Research center for environmental toxicology) annual meeting; University of Quebec at Montreal.
2002: The International Research Scholarship award: the ministry for the higher education of Tunisia: Five-year duration.

Services

2020- UTK- Classroom Upgrade Committee
2019- ORNL Member of the Institutional Biosafety Committee (IBC)
2019- UTK Member of the Institutional Animal Care and Use Committee (IACUC)
2019- UTK/College of Education Health and Human sciences. Member of the undergraduate curriculum review committee
2017- UTK; Student Conduct Board
2017- UTK; Department of Nutrition Graduate Handbook Review Committee

2017- UTK; Department of Biochemistry, Cellular and Molecular Biology: Hunsicker Research Incentive Award review committee
2017: UTK; Department of Biochemistry, Cellular and Molecular Biology: Donald L. Akers, Jr. Faculty Award review committee
2016-2019: Member of the College Senate Committee
2016-2017: Obesity Summit international conference organizing Committee
2016-2017: UTK: Science Supplies Bid Committee
2016: The American University of Beirut Junior faculty Award review committee
2016: Member of the College Senate Committee
2016- Member of American Society for Pharmacology and Experimental Therapeutics
2010- Member of Oxigen Club of Clifornia
2007- Member of the Society for Redox Biology and Medicine

Editorial board:

- 2013- Vitamins and Minerals Reports
- 2016- Journal of Nutrition & Food Sciences
- 2017- Journal of Nutrition and Dietetics.
- 2017- Obesity Research
- 2018- Journal of Obesity and Medical Complications
- 2018- International Journal of Food Science, Nutrition and Dietetics
- 2019- Nutritional Science Journal
- 2021- International Journal of Molecular Sciences

Conference organization

- Global Summit on Obesity & Diet Management, Los Angeles, CA, September 2016.
- Global Summit on Obesity and Diet Management, Chicago, October 2017.

Grant Review

- ***American Heart Association*** – AHA- CELL pre and postdoc fellowship program. 2021.
- ***USDA/AFRI***: Diabetes Study Section Panelist- 2020-2021.
- ***Society for Redox Biology and Medicine***-Young Investigator Award Committee during the SfRBM 2020.
- ***The DBT/Wellcome Trust India Alliance*** (India Alliance)/Government of India funding agency. July 2020.
- ***Department of Defense***- Peer Reviewed Medical Research Program (PRMRP) for the Congressionally Directed Medical Research Programs (CDMRP). 2018-2019.
- ***The American University of Beirut***. Junior Faculty Award-2016.

Scientific Committee Member

- International Nutrition Research Conference (Nutrition 2020), Rome; Italy. July 2019. Role: Scientific Committee.
- International Nutrition Research Conference (Nutrition 2020), Rome; Italy. July 2019. Role: Scientific Committee.
- UTK. Limited submission competition for the NIH Collaborative Program Grant for Multidisciplinary Teams (RM1) Review Committee-2018.
- UTK; Department of Biochemistry, Cellular and Molecular Biology: Donald L. Akers, Jr. Faculty Award Review Committee-2017.
- Global Summit on Obesity and Diet Management, Chicago, IL, October 2017. Role: Conference Organizer and Plenary Speaker.

- UTK; Department of Biochemistry, Cellular and Molecular Biology: Hunsicker Research Incentive Award Review Committee-2017
- Global Summit on Obesity & Diet Management, Los Angeles, CA, September 2016. Role: Conference Organizer and Plenary Speaker.

Reviewer for

1. Adipocyte
2. BBA-General Topics
3. BBA-Molecular Basis of Disease
4. Biomedicine & Pharmacotherapy
5. Cell Cycle
6. Diabetes
7. FASEB
8. Federation of European Biochemical Societies (FEBS) Letters
9. Food & Function Journal
10. Free Radical Biology & Medicine
11. Frontiers in Pharmacology
12. In Vitro Cellular & Developmental Biology
13. International Journal of Molecular Sciences
14. Journal of Applied Biomedicine
15. Journal of Biological Chemistry
16. Journal of Diabetes and Its Complications
17. Journal of Gerontology: Biological Sciences
18. Journal of Pharmaceutical Analysis
19. Metabolism & Cardiovascular Diseases
20. Diabetes, Metabolic Syndrome and Obesity
21. Metallomics
22. Molecular and Cellular Endocrinology
23. Molecular nutrition
24. Nutrients
25. Nutrition
26. Nutrition Research
27. Obesity and Metabolism
28. PLosOne
29. Surgery for Obesity and Related Diseases
30. The Journal of Nutritional Biochemistry
31. Toxicology and Applied Pharmacology
32. World Journal of Surgical Oncology

Research Support

Ongoing Research Support

UTK/UTIA Center of Excellence/NIFA. Fibro-adipogenic precursors: a new target for the prevention of breast myopathies in broiler chickens. **Role: Co-P.I.** Ahmed Bettaieb Department of Nutrition Department of Nutrition, The University of Tennessee, Knoxville. **P.I.** Brynn Voy. Department of Animal Science, The University of Tennessee, Institute of Agriculture. 06/2020-05/2021. Total Award: $ 30,000.00.

NIH/NIDDK*: **1R15DK114790**. n-3 derived epoxides and sEH inhibitor in brown adipogenesis*. **Role: Co-PI. P.I.** Dr. Ling Zhao, Department of Nutrition, The University of Tennessee, Knoxville. 06/2018-05/2021. Total Award: $ 442,654.00.

USDA National Institute of Food and Agriculture/AFRI: 2019-67017-29261. *Impact of Interleukin-1 signaling on butyrate oxidation mediates the response of a high-fiber diet in the colonic injury and repair process.* **Role:** Co-Investigator. **P.I.** Dr. Dallas Donohoe, Department of Nutritional Sciences, The University of Tennessee, Knoxville. 07/2019-06/2022. Total Award: $ 500,000.00.

Completed Research Support

NIH/NIDDK*:* **K99 DK100736.** *Metabolic functions of adipose pyruvate kinase M2.* **Role:** Sole Principal Investigator. 09/2013-05/2015. Total Award: $ 180,000 ($162,000 direct cost).

NIH/NIDDK*: **R00DK100736**. Metabolic functions of adipose pyruvate kinase M2.* **Role:** Sole Principal Investigator. 09/2013-05/2020. Total Award: $ 927,000 ($682,087 direct cost)

USDA National Institute of Food and Agriculture- Oklahoma Agricultural Experiment Station Hatch/1012752. *Role of ZIP12 in preventing mitochondrial dysfunction and neurodegenerative disorders.* **Role:** Co-Investigator. **P.I.** Dr. Winyoo Chowanadisai, Department of Nutritional Sciences, Oklahoma State University-Stillwater. 08/2017-07/2019. Total Award: $ 90,000.00.