BIOGRAPHICAL SKETCH
DO NOT EXCEED FIVE PAGES.

NAME: Singh, Soudamani

eRA COMMONS USER NAME (credential, e.g., agency login): SOUDAMANI SINGH

POSITION TITLE: Postdoctoral Researcher

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Andhra University, Visakhapatnam, Andhra Pradesh, India	B.Sc.	04/1994	Botany, Zoology & Chemistry
University of Madras, Chennai, India	M.Sc.	05/1999	Zoology
	M.Phil.	4/2000	Zoology
Dr. ALM Institute of Basic Medical Sciences University of Madras, Chennai, India	PhD	01/2008	Zoology-Endocrinology
Section of Digestive Diseases, Department of Medicine, WVU, Morgantown, WV	Post doctorate research	07/2010	Gastroenterology

A. Personal Statement

I have the necessary background and preparation to be considered as a future junior investigator for this COBRE, which is focused on cellular transport physiology in obesity related disorders. The extensive training that I received as part of my postdoctoral program has given me an in-depth understanding on intestinal nutrient transporters, specifically glutamine co-transporters, and how they are regulated during chronic intestinal inflammation. With reference to the current research proposal, my specific focus will be to decipher the intracellular pathways responsible for the PGE2 mediated transcriptional regulation of Na-glutamine co-transporter B0AT1. The molecular mechanisms that might possibly be involved in the transcriptional regulation of B0AT1 transporter proteins will be elucidated through phosphorylation studies on transcription factor proteins, specifically CREB, using metabolic labeling, immune-precipitation and Western Blot techniques. Because of my training in the past 5 years under the supervision of the principal investigator Dr. Uma Sundaram, I can say with confidence that I have the necessary expertise to be an integral part of the current research proposal.

B. Positions and Honors

Positions and Employment

2010-2013 Postdoctoral Fellow, Section of Digestive Diseases, Department of Medicine, Health Sciences Centre, West Virginia University, Morgantown, WV

2013-Present Postdoctoral Fellow, Department of Clinical and Translational Sciences, Joan C. Edwards School of Medicine, Marshall University, Huntington, WV

Other Experience and Professional Memberships

2002-Present Society for Reproductive Biology and Comparative Endocrinology (SRBCE)

2010-2016 Trainee member, American Gastroenterological Association

Honors

2003	Best poster presentation (third prize) at XXIV Society for Reproductive Biology and Comparative Endocrinology in the Benaras Hindu University, Benaras, India
2004-2006	Project fellow in project entitled "Molecular approach to reproductive toxicity of aflatoxin." funded by the University with Potential for Excellence (UWPFE), under the University Grants Commission (UGC) of the Government of India
2006	Best poster presentation (first prize) for the in XXI Society for Reproductive Biology and Comparative Endocrinology in the Indian Institute of Technology, Roorkee, India
2006	Senior Research Fellowship (SRF) awarded by the Indian council of Medical Research (ICMR) for project entitled "Effects of experimental diabetes and insulin replacement on epididymal structure and function". Awarded but deferred
2007-2010	Women Scientists award in project entitled "Effects of experimental diabetes and insulin replacement on epididymal structure and function" funded by the Department of Science and Technology (DST) Women Scientist Scheme – A (WOS-A)
2015	Poster of Distinction awarded at Digestive Disease Week in Washington, D.C.

C. Contribution to Science

1. My recent publication on mast cell regulation of Na-glutamine co-transporters during chronic intestinal inflammation demonstrates that mast cells regulate the Na-dependent glutamine co-transporters: B0AT1 in villus cells and SN2 in crypts cells. Inhibition of B0AT1 in villus and stimulation of SN2/SNAT5 in crypt cells are regulated back to normal by mast cell stabilization in the chronically inflamed rabbit small intestine. The outcome of these findings provides a better understanding of how these broad-spectrum immune system modulators are responsible for the regulation of B0AT1 in villus and SN2/SNAT5 in crypt cells during chronic intestinal inflammation. The findings of this study have been well appreciated by the scientific community in the DDW research conference.
    a. Singh S, Arthur S, Talukder J, Palaniappan B, Coon S, Sundaram U. Mast cell regulation of Na-glutamine co-transporters B0AT1 in villus and SN2 in crypt cells during chronic intestinal inflammation. BMC gastroenterology. 2015; 15(1):47. PMID: 25884559

2. In another study, we have shown that chronic and specific inhibition of basolateral Na-K-ATPase in IEC-18 cells increases intracellular Na. In this study, we have shown that Na-K-ATPase stimulates entrance of glucose via the brush border membrane SGLT1, but not influx of Na via NHE3. The mechanism of stimulation of SGLT1 is secondary to an increase in the affinity of the co-transporter for glucose. Na-K-ATPase regulates the brush border membrane SGLT1, possibly in a compensatory manner for the loss of trans-membrane Na, leading to its inhibition.
    a. Manoharan P, Gayam S, Arthur S, Palaniappan B, Singh S, Dick GM, Sundaram U. Chronic and selective inhibition of basolateral membrane Na-K-ATPase uniquely regulates brush border membrane Na absorption in intestinal epithelial cells. Am J Physiol. Cell Physiol. 2015 Apr 15;308 (8):C650-6. PMID: 25652450

3. In addition to my research, I am serving as a reviewer for the following journals: PLoS One, Medicine, Journal of Cellular Biochemistry, and Microbial Pathogenesis.

Complete List of Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/soudamani.singh.1/bibliography/48015628/public/?sort=date&direction=descending

D. Additional Information: Research Support and/or Scholastic Performance