

## **Ramesh B. Jeganathan, Ph.D.**

Assistant Professor

Department of Nutrition, Dietetics, and Hospitality Management

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Ph.D. University of Madras.

Postdoc, Mayo Clinic Rochester, MN

Assistant Professor, Midwestern University, AZ.

### **RESEARCH INTERESTS**

Insulin signaling in animal models of obesity and type 2 diabetes; ubiquitination and trafficking of proteins in insulin signaling pathway; biochemical and cellular mechanisms responsible for insulin resistance in type 2 diabetes; linking Alzheimer's disease and type 2 diabetes.

### **HONORS AND AWARDS**

**2014:** Associate Editor, Journal of Alzheimer's Disease (JAD).

**2013:** Recipient of the Student Government Association (SGA) Outstanding Faculty Member for the College of Human Sciences, Auburn University, in recognition for outstanding teaching.

**2013:** Recipient of the Quality Life Faculty Award (\$3000), College of Human Sciences, Women's Philanthropy Board, in recognition for an effective mentor of undergraduate student's research

**2013:** Research featured at Auburn University Research 2012 Annual update

### **SELECTED PUBLICATIONS**

1. Zheng C, Geetha T, Gearing M, **Babu JR\***. Amyloid  $\beta$ -abrogated TrKA ubiquitination in PC12 cells analogous to Alzheimer's disease. **Journal of Neurochemistry** 2015; [Epub ahead of print] PMID: 25708205.
2. Rege SD, Geetha T, Broderick TL, **Babu JR\***. Resveratrol protects B amyloid induced oxidative damage and memory associated proteins in H19-7 hippocampal neuronal cells. **Current Alzheimer Research** 2015; 12: 147-156.
3. Pondugula SR, Flannery PC, Apte U, **Babu JR**, Geetha T, Rege SD, Chen T, Abott KL. PPM1A phosphatase is involved in regulating PXR-mediated CYP3A4 gene expression. **Drug Metabolism and Disposition** 2015; 23:385-391.
4. Zheng C, Geetha T, **Babu JR\***. Failure of ubiquitin proteasome system: Risk for neurodegenerative diseases. **Neurodegenerative Diseases** 2014; 14: 161-175.

5. Brust KB, Corbell KA, Al-Nakkash L, **Babu JR**, Broderick TL. Expression of gluconeogenic enzymes and 11beta-HSD type 1 in liver of diabetic mice after acute exercise. **Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy** 2014; 7: 495-504.
6. Rege SD, Geetha T, Griffin GD, Broderick TL, **Babu JR\***. Neuroprotective effects of resveratrol in Alzheimer pathology. 2014; **Frontiers in Aging Neuroscience**. 2014;6:218 doi: 10.3389/fnagi.2014.00218
7. Desai G, Zheng C, Geetha T, Mathews ST, White BD, Huggins KW, Zizza CA, Broderick TL, **Babu JR\***. The pancreas-brain axis: Insight into disrupted mechanisms associating type 2 diabetes and Alzheimer disease. **Journal of Alzheimer's disease**. 2014; 42:347-356
8. Rege SD, Kumar S, Wilson D, Tamura L, Geetha T, Mathews ST, Huggins KW, Broderick TL, **Babu JR\***. Resveratrol protects the brain of obese mice from oxidative damage **Oxidative Medicine and Cellular Longevity** 2013; 2013:419092.
9. Geetha T, Rege SD, Mathews SE, Meakin SO, White MF, **Babu JR\***. Nerve growth factor Receptor TrKA, a new receptor in insulin signaling pathway in PC12 cells. **Journal of Biological Chemistry** 2013; 288: 23807-23813.
10. Rege SD, Geetha T, Pondugula S, Zizza C, Wernette C, **Babu JR\***. Non-coding RNAs in Neurodegenerative Diseases. **ISRN Neurology** 2013 Apr 30; 2013:375852. doi: 10.1155/2013/375852.
11. Geetha T, Zheng C, McGregor WC, White DB, Diaz-Meco MT, **Babu JR\***. TRAF6 and p62 inhibit amyloid  $\beta$ -induced neuronal death through p75 neurotrophin receptor. **Neurochemistry International** 2012; 61: 1289-1293.
12. Geetha T, Zheng C, Vishwaprakash N, Broderick TL, **Babu JR\***. Sequestosome 1 / p62, a scaffolding protein, is a newly identified partner of IRS-1. **Journal of Biological Chemistry** 2012; 287: 29672-29678.
13. Geetha T, Zheng C, Unroe B, Sycheva M, Klues H, **Babu JR\***. Polyubiquitination of the neurotrophin receptor p75 directs neuronal cell survival. **Biochemical and Biophysical Research Communications** 2012; 421: 286-290.
14. Geetha T, Vishwaprakash N, Sycheva M, **Babu JR\***. Sequestosome 1 / p62: Across diseases. **Biomarkers** 2012; 17: 99-103.
15. Diarra A, Geetha T, Potter P, **Babu JR\***. Signaling of the neurotrophin receptor p75 in relation to Alzheimer's Disease. **Biochemical and Biophysical Research Communications** 2009; 390: 352-356.
16. **Babu JR**, Seibenhener ML, Peng J, Stroem AL, Kempainen R, Cox N, Zhu H, Wooten M, Diaz-Meco MT, Moscat J. Wooten MW. Genetic inactivation of p62 leads to accumulation of hyperphosphorylated tau and neurodegeneration. **Journal of Neurochemistry** 2008; 106: 107-120.

17. Wooten MW, Geetha T, **Babu JR**, Seibenhener ML, Peng J, Cox N, Diaz-Meco MT, Moscat J. Essential role of SQSTM1/p62 in regulating accumulation of K63-ubiquitinated proteins. **Journal of Biological Chemistry** 2008; 283: 6783-6789.
18. Zhou X<sup>#</sup>, **Babu JR**<sup>#</sup>, Silva S\*, Shu Q, Graef I, Oliver T, Tomoda T, Tani T, Wooten MW, and Wang, F. Unc-51-like kinase ½- mediated endocytic process regulate NGF signaling and filopodia extension in sensory axons. **Proceedings of the National Academy of sciences** 2007; 104: 5842-5847. (<sup>#</sup> Equal Contribution)
19. Wooten MW, Hu X, **Babu JR**, Seibenhener, ML, Geetha T, Paine MG, and Wooten MC. Signaling, polyubiquitination, trafficking, and inclusions: sequestosome 1/p62's role in neurodegenerative disease. **Journal of Biomedicine and Biotechnology** 2006; 62079-62096.
20. Paine MG, **Babu JR**, Seibenhener ML, and Wooten MW. Evidence for p62 aggregate formation: role in cell survival. **FEBS Letters** 2005; 579: 5029-5034.
21. Wooten MW, Geetha T, Seibenhener ML, **Babu JR**, Diaz-Meco MT, and Moscat J. The p62 scaffold regulates nerve growth factor-induced NF-kappa B activation by influencing TRAF6 polyubiquitination. **Journal of Biological Chemistry** 2005; 280: 35625-35629.
22. **Babu JR**, Geetha T, Wooten MW. Sequestosome 1/p62 shuttles polyubiquitinated tau for proteasomal degradation. **Journal of Neurochemistry** 2005; 94: 192-203.
23. Seibenhener ML, **Babu JR**, Geetha T, Wong H, Krishna NR, Wooten MW. Sequestosome/p62 is a polyubiquitin chain binding protein involved in ubiquitin proteasomal degradation. **Molecular and Cellular Biology** 2004; 24: 8055-8068.
24. **Babu JR**, Jeganathan KB, Baker DJ, Wu X, Kang-Decker N, van Deursen JM. Rae1 is an essential checkpoint regulator that cooperates with Bub3 to prevent missegregation. **Journal of Cell Biology** <sup>@</sup> 2003; 160: 341-353.

<sup>@</sup>Editorial text <http://www.jcb.org/cgi/content/full/160/3/284-a>

25. Wang X, **Babu JR**, Harden JM, Jablonski SA, Gazi MH, Lingle WL, de Groen PC, Yen TJ, van Deursen JM. The mitotic checkpoint protein hBUB3 and the mRNA export factor hRAE1 interact with GLE2p-binding sequence (GLEBS)-containing proteins. **Journal of Biological Chemistry** 2001; 276: 26559-26567.

**\*Corresponding author**

**Publications in the name of Jeganathan Ramesh Babu (Babu JR)**

## **COURSES TAUGHT AT AUBURN**

NTRI 2000: Nutrition and Health

NTRI 4980: Undergraduate Research and Study

NTRI 7530: Human Nutrient Metabolism

NTRI 7990: Research and Thesis

NTRI 8970: Advanced Topics in Nutrition and Food Sciences - Diabetes

NTRI 8990: Research and Dissertation