

Curricular Vitae

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A. Education:

1992-1995: Bachelor of Science (BSc)

Silver Jubilee Government College, Kurnool, Andhra Pradesh
Major Subjects: Chemistry, Botany, Zoology.

1995-2001: Integrated PhD (MS plus PhD)

Indian Institute of Science (IISc), Bangalore, India.
Biological Sciences and Dept. of Biochemistry

MS thesis Project 1: Studies on the unfolding behavior of Calcium binding protein from *E. histolytica*

Mentor: Prof. MRN Murthy, Molecular Biophysics Unit

MS thesis Project 2: Purification and characterization of C203S and R269E Serine hydroxymethyltransferase mutants

Mentor: Prof. HS Savithri, Dept. of Biochemistry

PhD thesis title: Unraveling the structure-function relationships in Serine hydroxymethyltransferase: Targeted mutagenesis.

Mentor: Prof. HS Savithri, Dept. of Biochemistry

2001-2004: Post-Doctoral Fellow,

James Graham Brown Cancer Center,
University of Louisville, Louisville, KY, USA.

Field of study: The role of G-protein coupled receptors/chemokine receptors and their signal transduction pathways in the development of inflammatory diseases.

Mentor: Prof. Haribabu Bodduluri.

B. Academic Appointments:

1998-2001: Doctoral Scholar, Biochemistry, Indian Institute of Science, Bangalore-560012, India.

2001-2004: Post-Doctoral Fellow/Research Scientist, Department of Microbiology and Immunology, James Graham Brown Cancer Center, University of Louisville, Louisville, KY-40202, USA.

2004-Present: Assistant Professor, James Graham Brown Cancer Center, University of Louisville, Louisville, KY-40202, USA.

2007-Present: Assistant Professor, Dept. of Microbiology and Immunology, University of Louisville, Louisville, KY-40202, USA.

C. Honors and Awards:

1. Received **State Merit Scholarship (Telugu Vignana Parithoshikam)** from State Government of Andhra Pradesh, INDIA, 1992-1995.
2. Received '**GIRI MEMORIAL AWARD for the BEST PhD THESIS-**' in Department of Biochemistry at Indian Institute of Science, Bangalore, INDIA.
3. Received '**BEST POSTER AWARD**' at 68th annual meeting of Society for Biological Chemists (India) & Symposium on Current Trends in Biology in Bangalore, INDIA
4. Received '**BEST POSTER AWARD (1st Prize)**' at Research Louisville' 2003, Louisville, KY, USA.
5. Received '**Prof. A. KRISHNAMURTHY AWARD**' for the best paper published in Indian journals from Society for Biological Chemists (India) 2004.
6. Received '**YOUNG INVESTIGATOR AWARD**' at '11th International Bioactive Lipids in Cancer, Inflammation and related diseases conference' in Cancun, Mexico, Oct 25-28, 2009.
7. Received '**Roger Herzig Jr. Faculty Research Prize**' at Annual retreat of James Graham Brown Cancer Center, University of Louisville, Louisville, Oct 28, 2011.

D. Committee Assignments and Administrative Services:

1. **2008-2011:** Chairman of Curriculum committee, Dept. of Microbiology and Immunology, University of Louisville, Louisville, KY-40202, USA
2. **2008-Present:** Member of PhD student dissertation and qualifying examination committees.
3. **2004-Present:** In-charge of Imaging facility “real time live cell imaging microscopy” in James Graham Brown Cancer Center. (Nikon AR confocal microscope, Nikon 300 epi-fluorescence live cell microscope, Aperio Imagescope)
4. **2011-Present:** In-charge of ‘454-Roche next generation sequencer’ in James Graham Cancer Center.
5. **2012-Present:** Member of FACULTY FORUM representing Dept. of Microbiology and Immunology.

E. Teaching

1. Courses: Method in Microbiology and Immunology (Every Fall from 2006-2013), Microbiota in health and disease; Topics in advanced microbiology.
2. Doctoral students: 1 (Completed PhD in July 2013).
3. Mentored several high school students, under graduate, graduate students as well as post-doctoral fellows including in the laboratory of Dr. Bodduluri, University of Louisville.
4. Mentored several summer students (Sanal, Jamal, Eric, Cody) under James Graham Brown Cancer Center Summer Research Internship Program.

F. Publications:

(Note: J.V. Krishna Rao is another way of writing my name, which was used in my initial publications).

1. B. Gopal, **J. V. Krishna Rao**, C. J. Thomas, A. Bhattacharaya, S. Bhattacharya, M. R. N. Murthy, A. Surolia (1998) Induction of a spectroscopically defined transition by guanidinium hydrochloride on a recombinant calcium binding protein from *Eantamoeba histolytica*. *FEBS Lett.* **441**, 71-76

2. **J.V. Krishna Rao**, J. R. Jagath, B. Sharma, N. Appaji Rao and H. S. Savithri (1999) Asp 89: A critical residue in maintaining the oligomeric structure of sheep liver cytosolic serine hydroxymethyltransferase. *Biochem. J.* **343**, 257-263.
3. **J. V. Krishna Rao**, V. Prakash, N. Appaji Rao, H. S. Savithri (2000) The role of Glu74 and Tyr82 in the reaction catalyzed by sheep liver cytosolic serine hydroxymethyltransferase. *Eur. J. Biochem.* **267**, 5967-5976.
4. R. Talwar, V. Leelavathy, **J. V. Krishna Rao**, N. Appaji Rao and H. S. Savithri (2000) Role of Pro-297 in the catalytic mechanism of sheep liver serine hydroxymethyltransferase. *Biochem. J.* **350**, 849-853.
5. Trivedi V, Gupta A, **Jala VR**, Saravanan P, Rao GS, Rao NA, Savithri HS, Subramanya HS (2002) Crystal structure of binary and ternary complexes of serine hydroxymethyltransferase from *Bacillus stearothermophilus*: insights into the catalytic mechanism. *J Biol Chem.* **277**, 17161-9.
6. **Jala VR**, Prakash V, Rao NA, Savithri HS (2002), Overexpression and characterization of dimeric and tetrameric forms of recombinant serine hydroxymethyltransferase from *Bacillus stearothermophilus*. *J Biosci.* **27**, 233-42.
7. **Jala VR**, Rao NA, Savithri HS (2003) Identification of amino acid residues, essential for maintaining the tetrameric structure of sheep liver cytosolic serine hydroxymethyltransferase, by targeted mutagenesis. *Biochem J.* **369**, 469-76.
8. Appaji Rao N, Ambili M, **Jala VR**, Subramanya HS, Savithri HS. (2003) Structure-function relationship in serine hydroxymethyltransferase *Biochim Biophys Acta.* **1647 (1-2)**, 24-9.
9. Khan F, **Jala VR**, Rao NA, Savithri HS. (2003) Characterization of recombinant diaminopropionate ammonia-lyase from *Escherichia coli* and *Salmonella typhimurium*. *Biochem Biophys Res Commun.* **306**, 1083-8.
10. **Jala VR**, Ambili M, Prakash V, Rao NA, Savithri HS (2003). Disruption of distal interactions of Arg 262 and of substrate binding to Ser 52 affect catalysis of sheep liver cytosolic serine hydroxymethyltransferase. *Indian J Biochem Biophys* **40**, 226-237.
11. Bhavani S, Trivedi V, **Jala VR**, Subramanya HS, Kaul P, Prakash V, Appaji Rao N, Savithri HS. (2005) Role of Lys-226 in the catalytic mechanism of *Bacillus stearothermophilus* serine hydroxymethyltransferase--crystal structure and kinetic studies, *Biochemistry* **44**, 6929-37
12. **Jala VR***, Subbarao K*, Mathis S, Suttles J, Zacharias W, Ahamed J, Ali H, Tseng MT, Haribabu B. (2004)-*contributed equally to the manuscript. Role of Leukotriene B4

Receptors in the Development of Atherosclerosis: Potential Mechanisms. *Arterioscler Thromb Vasc Biol.* **24**, 369-75.

13. **Jala VR** and Haribabu B (2004) Leukotrienes and inflammation: New roles for old mediators. *Trends Immunol* **25**, 315-22.
14. **Jala VR***, Galliera E*, Trent JO, Bonecchi R, Signorelli P, Lefkowitz RJ, Mantovani A, Locati M, Haribabu B. (2004) (*contributed equally to the manuscript) β -Arrestin dependent constitutive internalization of the human chemokine decoy receptor D6. *J Biol Chem* **279**, 25590-7.
15. **Jala VR**, Shao, WH and Haribabu B (2005) Phosphorylation Independent beta -arrestin translocation and internalization of leukotriene B4 receptors. *J Biol Chem* **280**, 4880-7
16. Uriarte SM, Joshi-Barve S, Song Z, Sahoo R, Gobejishvili L, **Jala VR**, Haribabu B, McClain C, Barve S. (2005). Akt Inhibition Upregulates FasL, Downregulates c-FLIPs and Induces Caspase-8 Dependent Cell Death in Jurkat T Lymphocytes. *Cell Death Differ* **12**, 233-42.
17. Kucia M, Reza R, **Jala VR**, Dawn B, Ratajczak J, Ratajczak MZ. (2005) Bone marrow as a home of heterogenous populations of nonhematopoietic stem cells *Leukemia.* **19**, 1118-27.
18. **Jala VR** and Haribabu B (2006). Real time analysis of G-protein coupled receptor signaling in live cells. *Methods Mol Biol Vol* **332** (eds H Ali and B Haribabu) pp 159-165.
19. Brown SL, **Jala VR**, Raghuwanshi SK, Nasser MW, Haribabu B and Richardson RM (2006) Activation and Regulation of Platelet-Activating Factor Receptor: Role of G_i and G_q in receptor-mediated chemotactic, cytotoxic and cross-regulatory signals *J Immunol* **177**, 3242-3249
20. Jog NR, **Jala VR**, Ward RA, Haribabu B, McLeish KR (2007) Heat shock protein 27 (Hsp27) regulates neutrophil chemotaxis and exocytosis through two independent mechanisms. *J Immunol* **178**, 2421-2428.
21. Basu S, **Jala VR**, Mathis S, Prete AD, Maturu P, Trent JO, and Haribabu B (2007). Polar Residues in the Transmembrane Domains are critical in coupling Leukotriene B₄ Binding to BLT1 activation. *J. Biol. Chem* **282**, 10005-17
22. Mathis S, **Jala VR** and Haribabu B. (2007) Role of Leukotriene B₄ Receptors BLT1 and BLT2 in Rheumatoid Arthritis *Autoimmunity Reviews* **7**, 12-17
23. Lenz AM, Franklin GA, Fairweather M, McClintock ML, **Jala VR**, Peyton JC, Gardner S, Cheadle WG (2007) Endogenous IL-10 leads to impaired bacterial clearance and reduced survival in a murine model of chronic peritonitis. *Cytokine* **40**, 207-215

24. Bonecchi R, Borroni EM, Anselmo A, Doni A, Savino B, Mirolo M, Fabbri M, **Jala VR**, Haribabu B, Mantovani A, Locati M. (2008) Regulation of D6 chemokine scavenging activity by ligand- and Rab11-dependent surface up-regulation. *Blood*. **112**, 493-503.
25. Estrada R, Wang L, **Jala VR**, Lee JF, Lin CY, Gray RD, Haribabu B, Lee MJ (2009). Ligand-induced nuclear translocation of S1P(1) receptors mediates Cyr61 and CTGF transcription in endothelial cells. *Histochem Cell Biol*. **131**, 239-49. 2009.
26. Salogni L, Musso T, Bosisio D, Mirolo M, **Jala VR**, Haribabu B, Locati M, Sozzani S (2009) Activin A induces dendritic cell migration through the polarized release of CXCL12 and CXCL14. *Blood*. 2009 **113**, 5848-56.
27. Nasser MW, Raghuwanshi SK, Grant DJ, **Jala VR**, Rajarathnam K, Richardson RM (2009) Differential activation and regulation of CXCR1 and CXCR2 by CXCL8 monomer and dimer. *J Immunol* **183**, 3425-3432.
28. Mathis SP, **Jala VR**, Lee DM, Haribabu B (2010). Nonredundant roles for leukotriene B4 receptors, BLT1 and BLT2 in inflammatory arthritis. *J Immunol* **185**, 3049-3056
29. **Jala, V.R.***, and Haribabu, B*. (2010). Real-time imaging of leukotriene B mediated cell migration and BLT1 interactions with beta-arrestin. *Journal of visualized experiments* : *JoVE*.46. pii: 2315. doi: 10.3791/2315. (* corresponding author)
30. Spite, M., Hellmann, J., Tang, Y., Mathis, S.P., Kosuri, M., Bhatnagar, A., **Jala, V.R.**, and Haribabu, B. (2011). Deficiency of the leukotriene B4 receptor, BLT-1, protects against systemic insulin resistance in diet-induced obesity. *Journal of immunology* **187**:1942-1949.
31. Cai Y, Shen X, Ding C, Qi C, Li K, Li X, **Jala VR**, Zhang HG, Wang T, Zheng J, Yan J. (2011) Pivotal Role of Dermal IL-17-Producing gammadelta T Cells in Skin Inflammation. *Immunity* **35**, 596-610.
32. Chakraborty A, Chakraborty S, **Jala VR**, Haribabu B, Sharp MK, Berson RE (2012): Effects of biaxial oscillatory shear stress on endothelial cell proliferation and morphology. *Biotechnology and bioengineering*. **109**: 695-707.
33. Kakar SS, **Jala VR**, Fong MY (2012) Synergistic cytotoxic action of cisplatin and withaferin A on ovarian cancer cell lines. *Biochem Biophys Res Commun*. **423**, 819-825.
34. **Jala VR***, Radde BN, Haribabu B, and Klinge CM (2012) Enhanced expression of G-protein coupled estrogen receptor (GPER/GPR30) in lung cancer. (*Corresponding author). *BMC Cancer*, **12**, 624-635.

35. Sharma RK, Chheda Z, **Jala VR** and Haribabu B (2013) Expression of leukotriene B4 receptor-1 on CD8+ T cells is required for their migration into tumors to elicit effective anti-tumor immunity *J Immunol* **191**, 3462-70.
36. Gorla SK, McNair NN, Yang G, Gao S, Hu M, **Jala VR**, Haribabu B, Striepen B, Cuny GD, Mead JR, Hedstrom L. (2014) Validation of IMP dehydrogenase inhibitors in a mouse model of cryptosporidiosis. *Antimicrobial Agents and Chemotherapy*. **58**, 1603-14.
37. Hester CM*, **Jala VR***, Langille MG, Umar S, Greiner KA, Haribabu B(2014). Fecal microbes, short chain fatty acids and colorectal cancer across racial/ethnic groups *World Journal of Gastroenterology* (In press) (*Equally contributed)
38. Roy BC, Subramaniam D, Ahmed I, **Jala VR**, Hester C, Greiner KA, Haribabu B, Anat S, Umar S (2014). Role of bacterial infection in epigenetic regulation of Wnt antagonist WIF1 by PRC1 protein EZH2 *Oncogene* 2014 Dec 8. doi: 10.1038/onc.2014.386. [Epub ahead of print]
39. Sharma RK, Chheda ZS, **Jala VR**, Haribabu B (2014). Regulation of cytotoxic T-Lymphocyte trafficking to tumors by chemoattractants: implication for immunotherapy. *Expert Rev Vaccines*. 2014 Dec 8:1-13. [Epub ahead of print]

Manuscripts submitted/under preparation

40. *Absence of leukotriene B4 receptor-1 promotes colon tumorigenesis in the Apc^{Min/+} mice by modulating gut microbiota.* **Venkatakrishna R. Jala***, Paramahansa Maturu*, Elangovan Krishnan*, Steven P. Mathis, Krishnaprasad Subbbarao, Sobha R. Bodduluri, Min Wang, Alfred B. Jensen, Mary L. Proctor, Haribabu Bodduluri (* equally contributed to the work) (Revised version need to be submitted)
41. Ablation of CCR2 reduced the spontaneous intestinal tumorigenesis in Apc^{Min/+} mouse model. **Venkatakrishna R. Jala*** Sobha R Bodduluri, Michele E Smith and Haribabu Bodduluri (* Corresponding author)
42. *Absence of leukotriene B4 receptor 1 delays crystalline silica-mediated progression of activated K-ras^{LA1} initiated lung cancer.* Shuchismita R. Satpathy, **Venkatakrishna R. Jala**, Gary Hoyle, Mostafa Fraig, Haribabu Bodduluri. (Manuscript Submitted).
43. *Inflammatory chemokines mediate immune surveillance of intestinal cancer.* Sobha R. Bodduluri, Steven P. Mathis, Paramahansa Maturu, Elangovan Krishnan, Michelle E. Smith, Paula M. Chilton, Thomas C. Mitchell, Massimo Locati, Alberto Mantovani, **Venkatakrishna R. Jala***, Haribabu Bodduluri* (* Corresponding author) (Manuscript under preparation).

44. *Structure-Function relationship of resolvin E1-leukotriene B4 receptor 1.* **Venkatakrishna R Jala**, Indira Choudary, Bindu Hegde, Steven P. Mathis, John O. Trent and Haribabu Bodduluri (manuscript under preparation)
45. *Absence of leukotriene B4 receptor-1 (BLT1) protects against lung cancer.* Shuchismita R. Satpathy, Elangovan Krishnan, Rajesh K. Sharma, **Venkatakrishna R. Jala**, W. Glenn McGregor, Haribabu Bodduluri (Manuscript under preparation).
46. *Enhanced Claudin-9 expression is associated with lung cancer metastasis.* Rajesh K. Sharma, **Venkatakrishna R. Jala**, Shuchismita R. Satpathy, Bodduluri Haribabu. (Manuscript under preparation).
47. *Characterization of the Upper Respiratory Tract Microbiome of Hospitalized Patients with Community-Acquired Pneumonia of Unknown Etiology.* Venkatakrishna Rao Jala*, Timothy L Wiemken*, Robert R Kelley, Paula Peyrani, Forest Arnold, Jose Bordon, Patricio W Cabral, Rodrigo Cavallazzi, James T Summersgill, Colleen B Jonsson, Haribabu Bodduluri, Julio A Ramirez. (* corresponding authors) (Manuscript under preparation).
48. *Biaxial oscillatory fluidic shear stress increases pro-atherogenic gene expression in endothelial cells* by Chakraborty A, **Jala VR**, Chakraborty S, Sharp MK, Berson RE and Haribabu B (Manuscript under preparation).

List of terms describing my scientific expertise:

G-protein coupled receptors (GPCR), Chemokines, Chemokine receptors, Microbiome, Host-Microbe interactions, Leukotrienes, GPR30, Estrogen, Structure-function relationship, Inflammation, Lung cancer, Colon cancer, Live cell imaging, Mouse models of cancer.