

## **S.N. Murthy, Ph.D.**

### **Highlights of Work.**

- Published over 65 peer reviewed manuscripts including 7 book chapters; involved in close to 100 presentations (podium and poster) in national and international meetings.
- Major Advisor for three PhD students and one MS student in addition to supervising/instruction of research work of graduate students, fellows in endocrinology and training them in various aspects of research methodologies and teaching classes. Recognized in several MD, PhD (60 plus), and MS dissertations.
- Experienced in *in vivo* work, and over the years used animal models of diseases such as insulin resistance, diabetes, and pulmonary hypertension; conducted nutritional studies using rats and mice.
- Worked on a surrogate marker of cardiovascular disease (carotid Intima/Media ratio); several pharmaceutical compounds were evaluated in the context of recovery from carotid artery/vascular injury.
- Conversant with microsurgical methods, balloon catheter mediated denudation/injury of the carotid artery, catheterization of veins and arteries for injection of compounds and hemodynamic measurements (systemic arterial blood pressure, pulmonary arterial blood pressure)
- Used tail vein injections, particularly of monocrotaline for inducing pulmonary hypertension, and measurement of pulmonary arterial pressure by right heart catheterization in Rats.
- Familiar with amino acid analysis, protein purification, sub-cellular fractionations, and various chromatographic methods such as Paper, Ion-exchange, Affinity, Gel filtration and HPLC.
- Ongoing research focusses on studying the effects of feeding high cholesterol, high methionine, and their combination on inflammatory changes in rat heart, aorta and liver at gene, protein, and structural levels with emphasis on the role of sitagliptin and other DPP-4 inhibitors; majority of work including all animal experiments were carried out at the Pennington Biomedical Research Center (Louisiana State University).
- Have been teaching in Environmental Toxicology; ENTX 700 Bioethics, ENTX 721 and ENTX 722 Principles of Toxicology 1 & 2, ENTX 724 Advanced Biochemistry II, ENTX 736 Special Topics, ENTX 737 Biochemical Methods, ENTX 752 Advance Human Nutrition, ENTX 799 Research Practicum and ENTX 800 Dissertation Research. While at Tulane University School of Medicine, jointly coordinated Advances in Pharmacology course and participated in Problem Based Learning for Medical Students.
- Flair for editorial work; writing and reviewing manuscripts, thesis corrections, preparation of reports, grant proposals, and meeting materials using Slide write, ISIS Draw, Symyx Draw and other computer applications.

CV follows.

# CURRICULUM VITAE

## **S.N. Murthy, Ph.D.**

Professor

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## **PERSONAL INFORMATION**

Residence: 13949 Lexington Park Dr. Baton Rouge, LA 70810

## **IMMIGRATION STATUS**

Citizenship: United States

## **EDUCATION**

1996: **PhD** in Biochemistry; National Institute of Nutrition (Indian Council of Medical Research) Osmania University, Hyderabad, India.

*'Studies on the enzymatic conversion of L-lysine to pipercolic acid: Identification of L-amino acid oxidase in mouse brain'.*

1986: **MSc** in Food Science; Central Food Technological Research Institute (Council of Scientific and Industrial Research), University of Mysore, Mysore, India.

*'Effect of feeding infant food formulations on the free amino acid levels in blood & fatty acids in the erythrocyte membrane'.*

1970: **BSc** Osmania University, Hyderabad, India.

## **PROFESSIONAL EXPERIENCE**

06/18-Present: Professor, Southern University and A&M College, Baton Rouge, LA

07/12 to 05/18: Associate Professor, Southern University and A&M College, Baton Rouge, LA

01/11 to 06/12: Associate Professor/Research, Dept. of Medicine, Tulane Univ. School of Medicine.

01/11 to 06/12: Adjunct Associate Professor, Dept. of Pharmacology, Tulane Univ. School of Medicine.

06/05 to 12/10: Assistant Professor/Research, Dept. of Medicine, Tulane Univ. School of Medicine.

06/05 to 12/10: Adjunct Assistant Professor, Dept. of Pharmacology, Tulane Univ. School of Medicine.

10/01 to 05/05: Post-Doctoral Researcher, Tulane University School of Medicine, New Orleans, LA

07/99 to 09/01: Res Associate, College of Pharmacy, Univ. of Louisiana at Monroe, Monroe, LA

01/98 to 06/99: Post-Doctoral Res Associate, College of Pharmacy, Oregon State Univ., Corvallis, OR

09/89 to 12/97: Sr. Technical Officer-1, National Institute of Nutrition (NIN), Hyderabad, India.

07/73 to 12/97: National Institute of Nutrition, Hyderabad, India.

### **HONORS & RECOGNITIONS (*I do not compete or apply for awards*)**

1. 2006, Octo: Co-Chairperson (session); Global Conference on Heart Health & Disease, Winnipeg, Ca.
2. 2001, Sept: O1 VISA (Google to know more)
3. 1983 to 85: Secretary of CUBS - a scientific organization of graduate students at the NIN.
4. 1964, September 5<sup>th</sup>: Best Teacher Award - in High School on Self-government Day.

### **PROFESSIONAL MEMBERSHIPS**

1. Society of Biological Chemists (India).
2. Nutrition Society of India- Life Member.
3. Neuroscience Society of India- Life Member.
4. Society of Toxicology.
5. American Heart Association
6. The Pennington/Louisiana Nutrition Obesity Research Center

### **SCIENTIFIC/RESEARCH INTERESTS**

To continuously learn new and relevant aspects in Intermediary Metabolism, Biochemistry, Nutrition, Insulin Resistance, Pulmonary Hypertension, and allied areas for contributing to further the understanding of some processes related to human health.

### **TEACHING ACTIVITIES**

- Jan. 2014- Teaching Environmental Toxicology (ENTX): 700 Bioethics, 721 and 722 Principles of Toxicology, 724 Advanced Biochemistry II, 736 Special Topics, 737 Biochemical Methods, 752 Advance Human Nutrition, 799 Research Practicum and 800 Dissertation Research. courses.
- July 2016: Foreign Faculty in “India International Knowledge Forum; the Year in Diabetes-Endocrinology Medicine” 2016, Jnana Sanjeevini Diabetes Hospital and Medical Center, Bangalore, India.
- 06/05-06/12: Teaching fellows in endocrinology about labeling of hormones, titre determination, RIA, EIA, and related methodologies; jointly coordinate Advances in Pharmacology course.
- 06/05-06/12: Moderator in Problem based learning programs (MD students). Annually 3-4 undergraduate and graduate students and residents rotated in the lab for learning micro surgical methods viz., isolation and catheterization of arteries (carotid, femoral, pulmonary/right heart catheterization) and veins, and several *in vitro* techniques. Also, taught about balloon catheter mediated injury of carotid artery and testing drugs in recovery process, protein purification and immunohistochemistry among others.
- December 09: Foreign faculty in ‘Training Workshop on Non-invasive Techniques in Small Laboratory Animal Physiology’ at the National Institute of Nutrition, Hyderabad, India (Dec 15 to 19).
- 10/01-05/05: Taught one class on Research Methods for MS Pharmacology. The emphasis was on ultracentrifugation approaches for the isolation of sub-cellular particles.
- 07/99-09/01: Participated in teaching the graduate students and incoming postdoctoral fellows about the animal experimentations, chromatographic methods like HPLC, GLC, ion-exchange, and toxicological analysis and use of several pieces of equipment.
- 01/98-06/99: As a postdoctoral faculty member in Oregon State University, regularly participated in seminar clubs and group meetings and made presentations.
- 09/89-1996: National Institute of Nutrition, Hyderabad, India ‘Annual Training Program of Endocrinological Techniques and their Applications’ (1<sup>st</sup> August to 15<sup>th</sup> September)-Engaged in training Teachers from medical colleges and research institutions about radio iodination of insulin with <sup>125</sup>I, titre determinations and RIA of hormones and related aspects. Coordinated efforts between course participants and faculty members for the successfully completing the annual training program.
- 1979 - 1989: National Institute of Nutrition, Hyderabad, India- trained graduate students in enzyme/protein purification, amino acid analysis, microbiological assays, and bactericidal activity of leukocytes.

*Recognized in more than 60 PhD and several MS and MD dissertations for help rendered in planning of scientific experiments, problem solving, discussions and thesis preparations.*

### **Ph.D. Students Supervised-Major Advisor**

1. Ms. Rashmi Pathak: Effects of DPP-4 inhibitors on hepatic inflammation in rats fed atherogenic diets (graduated in spring 2019).
2. Mr. Avinash Kumar: Methionine attenuates hepatic oxidative stress and fibrosis in hypercholesterolemia with and without sitagliptin (graduated in spring 2019).
3. Mr. Henry A Palfrey: Effects of Sitagliptin on Cardiovascular Structural and Biochemical Changes in Rats Fed Atherogenic Diets (graduated in spring 2020)

### **Current Ph.D. Student:**

1. Mr. Poornasai Vaddi

### **Ph.D. THESIS COMMITTEE MEMBER (Tulane University School of Medicine, New Orleans, LA)**

1. Rose-Claire St Hilaire (2007) “Inhibition of vascular smooth muscle cell proliferation *in vitro* by adenoviral transfer of vasoactive intestinal peptide (VIP) gene.”
2. Joel A Greco (2007) “Analysis of cardiovascular responses to active products of ACE and ACE2.”
3. David B Casey (2011) “Response of sodium nitrite in the vascular bed of the rat mediated by xanthine oxidoreductase and aldehyde dehydrogenase 2.”
4. Adeleke M Badejo Jr. (2011) “The role of Rho kinase in the regulation of tone in the pulmonary vascular bed in the intact chest rat.”
5. Edward A Pankey (2013) “Role of soluble guanylyl cyclase in the regulation of pulmonary vascular tone in the intact chest rat.”

### **Ph.D. THESIS COMMITTEE MEMBER (Southern University and A&M College, Baton Rouge, LA)**

1. Lulit Affin (2014) “Nanosilver Impregnated Activated Carbon/Polyurethane Foam Composite for Water Filtration.”
2. Augusta Smith (2018) “Characterization of Oncogenic HOXA1 Targets in Human Mammary Carcinoma Cells.”
3. Gagandeep Kaur (2019) “Epigenetic Regulation of Immune And Autophagy-Related Genes On Cigarette Smoke Exposure.”
4. Ogad A Agu (2019) “Studies on Oxidative Degradation of Select Olefinic Organic Aqua-Pollutants by Ozone.”
5. Swathi Kasibhatla (2020) “UV-B INDUCED DNA Damage in Select Southern Tree Species.”
6. Shilpa Thota (2023) “Pentachlorophenol Mediated Regulation of Autophagy and Inflammation in Human Lung and Liver Epithelial Cells.”
7. Abubakar S Abdulkadir (2023) “Diesel Particulate Extract Induced Immunotoxicity: a hybrid study in pulmonary cells.”
8. Rizwana Begum (2023) “Role and Regulation of Proteasome/Immunoproteasome during Ecigarette Vapor Condensate Exposure.”

### **THESIS SUPERVISOR FOR MS PHARMACOLOGY**

1. Neal W Bost (2009)-The effect of salsalate on balloon catheter injury in the carotid artery of the Zucker fatty rat.

### **MS PHARMACOLOGY THESIS COMMITTEE MEMBER (partial list)**

- 1) Lasker George, 2) Rao Ashwin, 3) Nguyen Diem, 4) Nwosu Desire, 5) Tran Kelvin, 6) Haider Umair, 7) Jackson Andrew, 8) Leonard Sean, 9) McCutcheon John, 10) Das S and 11) Chris Hodnette

### **GRADUATE STUDENTS AND MEDICAL DOCTORS WHO ROTATED IN THE LAB (partial list)**

- 1) Promil Kukreja, 2) Demian Obregon, 3) Anil S Matta, 4) Angelle Gifford, 5) Siddaraju Boregowda, 6) Edward Pankey, 7) George Lasker, 8) Ajaz Banka, and 9) Surabhi Chandra

## BIBLIOGRAPHY:

1. Pathak R, Kumar A, Palfrey HA, Stone KP, Raju NR, Gettys TW and **Murthy SN**. (2022). Prolonged effects of DPP-4 inhibitors on steato-hepatic changes in Sprague Dawley rats fed a high cholesterol diet. *Inflamm Res*. 71(5-6):711-722.
2. Kumar A, Pathak R, Palfrey HA, Stone KP, Gettys TW and **Murthy SN**. High levels of dietary methionine improves sitagliptin-induced hepatotoxicity by attenuating oxidative stress in hypercholesterolemic rats. *Nutrition & Metabolism*. 2020. 17:2.
3. Pathak R, Kumar A, Palfrey HA, Forney LA, Stone KP, Raju NR, Gettys TW, **Murthy SN**. The incretin enhancer, sitagliptin, exacerbates expression of hepatic inflammatory markers in rats fed a high-cholesterol diet. *Inflamm Res*. 2019 Jul;68 (7):581-595.
4. Kumar A, Palfrey HA, Pathak R, Kadowitz PJ, Gettys TW and **Murthy SN**. The Metabolism and Significance of Homocysteine in Nutrition and Health. *Nutrition & Metabolism*. 2017. 14:78.
5. Pankey EA, Edward JA, Swan KW, Bourgeois CRT, Bartow MJ, Yoo D, Peak TA, Song BM, Chan RA, **Murthy SN**, Prieto M, Giles TD, Kadowitz PJ. Nebivolol has a beneficial effect in monocrotaline-induced pulmonary hypertension. *Can J Physiol Pharmacol*. 2016 Jul;94(7):758-68.10.1139/cjpp-2015-0431.
6. Somanna NK, Wörner PM, **Murthy SN**, Pankey EA, Schachtele D, St Hilaire RC, Jansen D, Chafin AE, Nossaman BD, Alt EU, Kadowitz PJ, Izadpanah R. Intratracheal Administration of Cyclooxygenase-1 Transduced Adipose Tissue Derived Stem Cells Ameliorates Monocrotaline Induced Pulmonary Hypertension in Rats. *Am J Physiol Heart Circ Physiol*. August 22, 2014.
7. Lasker GF, Pankey EA, Dhaliwal JS, Stasch JP, **Murthy SN** and Kadowitz PJ. Analysis of the Erectile Response to BAY 41-8543 and Muscarinic Receptor Stimulation in the Rat. *J Sex Med*. 2013 Mar;10(3): 704-18.
8. Lasker GF, Pankey EA, Allain AV, **Murthy SN**, Stasch JP, Kadowitz PJ. The Selective Rho-kinase Inhibitor Azaindole-1 Has Long-lasting Erectile Activity in the Rat. *Urology*. 2013 Feb;81(2):465.e7-465.
9. **Murthy SN**, Pankey EA, Banka AA, Badejo AM Jr, Wekerle R, Vilija V, Izadpanah R, Kadowitz PJ, Fonseca VA. Effects of insulin detemir on balloon catheter injured carotid artery in Zucker fatty rats. *The Journal of Diabetes and Its Complications*. 2012; 26(6):470-5.
10. Valente A, Yoshida T, **Murthy SN**, Sakamuri S, Katsuyama M, Clark R, Delafontaine P, and Chandrasekar B. Angiotensin-II enhances AT1-Nox1 binding, and stimulates arterial smooth muscle cell migration and proliferation through AT1, Nox1, and interleukin-18. *Am J Physiol Heart Circ Physiol*. 2012 Aug; 303 (3):H282-96.
11. Nossaman BD, Pankey EA, Badejo AM Jr, Casey DB, Uppu S, **Murthy SN**, Kadowitz PJ. Analysis of responses to glyceryl trinitrate and sodium nitrite in the intact chest rat. *Nitric Oxide*. 2012 May 15; 26 (4):223-8.
12. Pankey EA, Badejo AR, Casey DB, Lasker GF, Riehl RA, **Murthy SN**, Nossaman BD, and Kadowitz PJ. Effect of Chronic Sodium Nitrite Therapy on Monocrotaline-Induced Pulmonary Hypertension. *Nitric Oxide*. 2012 Jun 30; 27 (1):1-8.
13. Pankey EA, Byun RJ, Smith WB II, Bhartiya M, Bueno FR Jr, Badejo AR Jr, Stasch JP, **Murthy SN**, Nossaman BD, Kadowitz PJ. Bay77-7549, an azaindole-based Rho kinase inhibitor has long-acting vasodilator activity in the pulmonary vascular bed of the intact chest rat. *Can J Physiol Pharmacol*. 2012; 90(7):825-35.
14. Casey DB, Pankey EA, Badejo AR Jr, Bueno FR Jr, Bhartiya M, **Murthy SN**, Uppu RM, Nossaman BD, Kadowitz PJ. Peroxynitrite has potent pulmonary vasodilator activity in the rat. *Can J Physiol Pharmacol*. 2012 Apr; 90 (4):485-500.
15. Pankey EA, Bhartiya M, Badejo AM, Haider U, Stasch JP, **Murthy SN**, Nossaman BD, and Kadowitz PJ. Pulmonary and Systemic Vasodilator Responses to the Soluble Guanylyl Cyclase Activator, Bay 60-2770, are Nitric Oxide and Heme-Independent in the Rat. *Am J Physiol Heart Circ Physiol*. 2011; 300(3):H792-802.
16. Allain AV, Hoang VT, Lasker GF, Pankey EA, **Murthy SN**, Kadowitz PJ. Role of nitric oxide in developmental biology in plants, bacteria and man. *Curr Top Pharmacol*. 2011; 15(2):25-33.
17. Alt EU, Senst C, **Murthy SN**, Slakey DP, Dupin CL, Chaffin AE, Kadowitz PJ, Izadpanah R. Age-Related Effects on Gene Regulation and Regenerative Potential of Tissue Resident Stem Cells. *Stem Cell Research*. 2012 Mar; 8 (2):215-25.

18. **Murthy SN**, Desouza CV, Bost NW, St Hilaire RC, Casey DB, Badejo AM, Dhaliwal JS, McGee J, McNamara DB, Kadowitz PJ, Fonseca VA. Effects of salsalate therapy on recovery from vascular injury in female Zucker fatty rats. *Diabetes*. 2010; 59(12):3240-6.
19. **Murthy SN**, St Hilaire RC, Casey DB, Badejo AM Jr., McGee J, McNamara DB, Kadowitz PJ and Fonseca VA. The synthetic analog of GLP-1, exenatide reduces intimal hyperplasia in insulin resistant rats. *Diabetes and Vascular Disease Research*, 2010; 7(2):138-44.
20. Lasker GF, Badejo AM Jr., Casey DB, Dhaliwal JS, Matt CJ, **Murthy SN**, Kadowitz PJ. Intracavernosal administration of sodium nitrite as an erectile pharmacotherapy. *Can J Physiol Pharmacol*. 2010; 88(7):770-6.
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22. Badejo AM Jr, Hodnette C, Dhaliwal JS, Casey DB, Pankey EA, **Murthy SN**, Nossaman BD Hyman AL, and Kadowitz PJ. Mitochondrial Aldehyde Dehydrogenase Mediates Vasodilator Responses of Glyceryl Trinitrate and Sodium Nitrite in the Pulmonary Vascular Bed of the Rat. *Am J Physiol Heart Circ Physiol*. 2010; 299(3):H819-26.
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25. **Murthy SN**, Nossaman, BD, and Kadowitz PJ. New approaches to the treatment of pulmonary hypertension: from bench to bedside. *Cardiol Rev*. 2010 March/April; 18(2): 76-84.
26. Casey DB, Badejo AM, Dhaliwal JS, Sikora JL, Fokin A, Golwala NH, Greco AJ, **Murthy SN**, Nossaman BD, Hyman AL, Kadowitz PJ. Analysis of responses to the Rho-kinase Inhibitor Y-27632 in the Pulmonary and Systemic Vascular Bed of the Rat. *Am J Physiol Heart Circ Physiol*. 2010; 299(1):H184-92.
27. Nossaman BD, Scruggs BA, **Murthy SN**, Kadowitz PJ. History of Right Heart Catheterization: 100 years of Experimentation and Methodology Development. *Cardiology in Review*. 2010 March/April; 18(2): 94-101.
28. Nossaman BD, Nossaman VE, **Murthy SN**, Kadowitz PJ. The role of the RhoA/Rho-kinase pathway in the regulation of pulmonary vasoconstrictor function. *Can J Physiol Pharmacol*. 2010; 88(1):1-8.
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30. **Murthy SN**, Sukhanov S, McGee J, Greco JA, Chandra S, Delafontaine P, Kadowitz PJ, McNamara DB, Fonseca VA. Insulin Glargine reduces carotid intimal hyperplasia after balloon catheter injury in Zucker fatty rats possibly by IGF-1 mediated reduction in oxidative stress. *Mol Cell Biochem*. 2009; 330(1-2):1-8.
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33. Chandra S, **Murthy SN**, Mondal D, Agrawal KC. Therapeutic effects of *Nigella sativa* on chronic HAART-induced hyperinsulinemia in rats. *Can J Physiol Pharmacol*. 2009; 87(4):300-9.
34. Dhaliwal JS, Casey DB, Badejo AM Jr., **Murthy SN**, Kadowitz PJ. Analysis of Pulmonary Vasodilator Responses to SB-772077-B a Novel Aminofurazan Based Rho-kinase inhibitor. *J Pharmacol Exp Ther*. 2009; 330(1): 334-41.
35. McNamara DB, **Murthy SN**, Fonseca AN, Desouza CV, Kadowitz PJ, and Fonseca VA. Animal models of catheter-induced intimal hyperplasia in type 1 and type 2 diabetes and the effects of pharmacologic intervention. *Can J Physiol Pharmacol*. 2009. 87(1):37-50.
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41. Sathishkumar K, **Murthy SN**, and Uppu RM. Cytotoxic Effects of Biologically Active Oxysterols Produced During Ozonolysis of Cholesterol in Murine GT1-7 Hypothalamic Neurons. *Free Radical Research* 2007; 41(1):82-8.
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45. **Murthy SN**, Fonseca VA, and McNamara DB. Hyperhomocysteinemia Exacerbates the Development of Intimal Hyperplasia in Sprague Dawley rats; Alleviation by Rosiglitazone. *Experimental and Clinical Cardiology* (2005) 10 (3): 154-159.
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54. Asnani S, Desouza C, Homan J, **Murthy SN**, McNamara DB, Fonseca VA: Hormones and homocysteine. *Minerva Endocrinol*. (2002) 27:141-155.
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59. Raghunath M, **Murthy SN** and Narasinga Rao BS. Protein digestion in vivo: Peptides and free amino acids in the jejunum of rats fed different dietary proteins. *J. Clin. Biochem. & Nutr.* (1987) 3:217-226.
60. Vijayasathya C, Siddiqui LK, **Murthy SN** and Bamji MS. Rise in plasma trimethyl lysine levels in humans after oral lysine load. *Amer. J. Clin. Nutr* (1987) 46: 772-777.

#### MANUSCRIPTS IN PIPELINE

1. Methionine protects against NASH like symptoms induced by chronic exposure to high cholesterol and sitagliptin.
2. Palfrey HA, Kumar A, Pathak R. et al. Sitagliptin induces acute cardiac inflammatory and structural changes in rats fed a high cholesterol diet.

#### PARTIAL LIST OF CLOSE TO 100 PRESENTATIONS (ORAL AND POSTER) AT NATIONAL AND INTERNATIONAL MEETINGS

1. Methionine Protects against Sitagliptin-Induced Oxidative and Fibrotic Responses in Male Sprague Dawley Rats Fed a High Cholesterol Diet. A Kumar, R Pathak, HA Palfrey, TW Gettys, **SN Murthy**. Society of Toxicology 58th Annual Meeting, March 2019, Baltimore, MD.
2. Sitagliptin Exacerbates Hepatic Inflammation and Necrosis in Rats Fed High Cholesterol Diet. R Pathak, A Kumar, HA. Palfrey, TW Gettys, **SN Murthy**. Society of Toxicology 58th Annual Meeting, March 2019, Baltimore, MD.
3. Acute and Chronic Effects of DPP-4 Inhibitors on Hepatic Inflammation in Rats Fed a High Cholesterol Diet. R Pathak, A Kumar, HA Palfrey, KP Stone, TW Gettys, **SN Murthy**. AASLD's The Liver Meeting, November 2018, San Francisco, CA
4. McNamara DB, **Murthy SN**, Dunne BJ, Kadowitz PJ, Fonseca VA. Serum homocysteine levels and intimal hyperplasia are reduced by rosiglitazone in high methionine diet fed SD rats. The 2nd World Congress of the International Conf of International Acad of Cardiovascular Sci. July 14-16, 2005 Sapporo, Japan.
5. Janardanasarma MK and **Murthy SN**. Optimization of membrane preparation procedure for solubilization of opiate receptor from sheep brain striatum. P10-19, 377, 16th International Cong. of Biochemistry and Molecular Biology. New Delhi, India1994.
6. **Murthy SN** and Janardanasarma MK. Enzymatic  $\alpha$ -deamination of L-lysine to  $\alpha$ -keto- $\epsilon$ -amino caproic acid in mouse brain. 2nd Meeting of the Asian Pacific Society for Neurochemistry, 1994. *J. Neurochem.* 63, Suppl. [2] S 28 D.
7. **Murthy SN**. Amino acid analysis of protein hydrolysates and physiological fluids using a single column with lithium citrate buffers. Annual meeting of Soc. of Biol. Chem. (Ind.) Hyderabad, India1992.
8. **Murthy SN** & Narasinga Rao BS. Spectrophotometric measurement of pipercolic acid without interferences from cysteine & proline. Annual meeting of the Soc. of Biol. Chem. (Ind.) Hyderabad, India 1992.

#### BOOK CHAPTERS

1. **Murthy SN**, Kadowitz PJ and McNamara DB (2011). Cellular and Molecular Mechanisms Associated with Salicylate Inhibition of Intimal Hyperplasia Following Balloon Catheter-Induced Vascular Injury. *Molecular Defects in Cardiovascular Disease*; Dhalla NS, Nagano M and Ostadal B (Eds) Part 3, 305-314 Springer Link Publishers.
2. Deng W, Bivalacqua TJ, Champion HC, Hellstrom WJ, **Murthy SN**, Kadowitz PJ. Superoxide dismutase – a target for gene therapeutic approach to reduce oxidative stress in erectile dysfunction. *Methods Mol Biol.* 2010; 610:213-27.
3. Deng W, Bivalacqua TJ, Champion HC, Hellstrom WJ, **Murthy SN**, Kadowitz PJ. Gene therapy techniques for the delivery of endothelial nitric oxide synthase to the lung for pulmonary hypertension. *Methods Mol Biol.* 2010; 610:309-21.



4. Sathishkumar K, Gao X, Raghavamenon AC, **Murthy SN**, Kadowitz PJ, Uppu RM. Determination of glutathione, mitochondrial transmembrane potential, and cytotoxicity in H9c2 cardiomyoblasts exposed to reactive oxygen and nitrogen species. *Methods Mol Biol.* 2010; 610:61-61.
5. Nossaman BD, **Murthy SN**, and Kadowitz PJ (2008). Disruption of the Nitric Oxide Signaling System in Diabetes. V.A. Fonseca (Ed): Humana Press.
6. **Murthy SN**, Fonseca VA, and McNamara DB (2005). Intimal Hyperplasia after Balloon Catheter Induced Carotid Artery injury in Zucker Rats: Effects of Peroxisome proliferator activator receptor ligands  $\alpha$  and  $\gamma$ . *Pharmacotherapy of Heart Failure*: S.K. Gupta, Pawan K. Singal and S.S. Agrawal (Eds). Anamaya Publishers, New Delhi, India.
7. **Murthy SN**, Fonseca VA, and McNamara DB (2005). Peroxisome proliferator activator receptor  $\alpha$  and  $\gamma$  ligands differentially affect intimal hyperplasia after balloon catheter induced vascular injury in Zucker rats. *Diabetes Mellitus Epidemic Combat the Challenge*. B. Mukherjee & PK Debnath (Chief. Eds). Tata McGraw-Hill Publishing Co. New Delhi, India.

#### **EDITORIAL ASSIGNMENTS:**

1. **Book** on 'Free Radicals and Antioxidant Protocols Series: Methods in Molecular Biology.' Uppu RM; **Murthy SN**; Pryor WA; Parinandi NL. (Eds); Humana Press, 2010.

#### **AD HOC JOURNAL REVIEWER**

1. Diabetes
2. British Journal of Nutrition
3. Journal of Diabetes and Its Complications
4. Molecular and Cellular Biochemistry
5. Canadian Journal of Physiology and Pharmacology
6. Frontiers in Bioscience
7. Translational Research
8. Ageing Research Reviews
9. Life Sciences
10. *American Society for Nutrition-Abstracts Reviewer for Annual Meetings*

#### **GUEST LECTURES (partial list)**

1. M V Diabetes Specialties Centre, Chennai, India (2007)
2. National Institute of Nutrition, Hyderabad, India (2007; 2009; 2011; 2014; 2016 & 2018)
3. Center for Food Technological Research Institute, Mysore, India (2009)
4. Samatvam Endocrinology Diabetes Center, Bangalore, India (2009)
5. Dr. Mohan's Diabetes Specialties Center, Chennai, India (2009)
6. International Institute of Biotechnology and Toxicology, Padappai, India (2009)
7. Jnana Sanjeevini Diabetes Hospital and Medical Center, Bangalore, India. (2016, 2018)
8. MS Ramaiah University of Applied Sciences, Bangalore, India (2016; 2018)

#### **DEPARTMENTAL AND INSTITUTIONAL COMMITTEES**

1. 2008-2012: Institutional Animal Care and Use Committee, Tulane University School of Medicine
2. 2007-2012: Interviewer for endocrinology fellowship program
3. 2009-2012: Interviewer for admission into MD
4. 2010-2012: Interviewer for admission into PhD program
5. 2017-Current: Member, Southern Institute for One Health One Medicine (SIOHOM) advisory board.

## **COURSES AND WORKSHOP ATTENDED**

1. MCB 525 *Techniques in Molecular and Cellular Biology* - Molecular and Cell Biology Program, Oregon State University, Corvallis, OR (7-19 September 1998).
2. Workshop on *Modern techniques in Neurosciences*, at Indian Institute of Science and National Institute of Mental Health and Neurosciences, Bangalore, India. (12-25 Dec.1993).
3. Workshop on *Affinity Chromatography*, at Primate Research Laboratory, Indian Institute of Science, Bangalore, India. (1-7 August 1993).
4. *Hormone assays and their clinical applications*, at National Institute of Health and Family Welfare, New Delhi, India. (31st July-18th Aug 1989).

## **RESEARCH GRANTS COMPLETED AS CO-INVESTIGATOR**

1. NIH RO1 HL62000; **Cardiopulmonary Surgery Research**-PI: Dr. P.J. Kadowitz. The major goal was to improve our current understanding of the regulation of the pulmonary circulation by COX-1 & 2.
2. NIH RO1 HL77421; **Stem cell therapy for pulmonary hypertension**-PI: Dr. P.J. Kadowitz. The major goal of this project was to improve our current understanding of the use of mesenchymal stem cells for the therapy of pulmonary hypertension.
3. Louisiana Board of Regents; **Development of peptide therapeutics for pulmonary hypertension**- PI: Dr. P.J. Kadowitz
4. The effect of insulin Lantus (Insulin Glargine) and Apidra (Insulin Glulisine) on intimal hyperplasia following balloon catheter injury in insulin resistance and early diabetes-PI: Dr. V.A. Fonseca.
5. The effect of Exenatide on intimal hyperplasia following balloon catheter injury in insulin resistance and early diabetes [Zucker fatty rats]-PI: Dr. V.A. Fonseca.
6. The effect of Welchol on intimal hyperplasia following balloon catheter injury in insulin resistance and early diabetes [Zucker fatty rats]-PI: Dr. V.A. Fonseca.

## **RESEARCH GRANTS (COMPLETED):**

1. **Louisiana Biomedical Research Network - Research Grant - 05/01/2015-04/30/2019**  
Role: Principal Investigator  
Title: *DPP4 inhibitors in combating the effects of homocysteine and cholesterol*
2. **Louisiana Biomedical Research Network – Carryover Funds for Purchase of Instruments**  
Role: Principal Investigator along with Dr. Sanjay Batra
3. **Southern University System Foundation Grant - 01/30/2015-01/29/2016**  
Role: Principal Investigator  
Title: *Evaluation of antihypertensive, hypolipidemic, and antidiabetic drugs for bactericidal effects using S. aureus.*
4. **Louisiana Biomedical Research Network - Research Grant – 2016**  
Role: Co-Principal Investigator  
Title: *Studies on increased intake of L-Methionine in relation to energy expenditure*
5. **Louisiana Biomedical Research Network - Research Grant – 2018**  
Role: Co-Principal Investigator  
Title: *Sitagliptin Exacerbates Expression of Inflammatory Markers in Sprague Dawley Rats Fed a High Cholesterol Diet*

## **RESEARCH GRANTS (CURRENT):**

1. **NSF-Excellence in Research: Stress-induced expression and release of DAMPs: Regulatory role of Epigenetic Factors and Post-translational modifications.**  
Role: Co-Principal Investigator
2. **Louisiana Biomedical Research Network - 2022**  
Title: *Beneficial effects of Methionine in hepatic inflammation due to hypercholesterolemia*  
Role: Principal Investigator

## RESEARCH EXPERIENCE

- 07/12-12/13: Environmental Toxicology, Southern University and A&M College, Baton Rouge, LA; involved in research work of graduate students and research presentations.
- 01/14-Present: Environmental Toxicology, Southern University and A&M College, Baton Rouge, LA; carrying out studies on the hepatic and vascular effects of dietary enrichment of L-methionine and cholesterol and intervention with a dipeptidyl peptidase (DPP4) inhibitor-sitagliptin. Animal experiments were conducted at the Pennington Biomedical Research Center (PBRC). In addition to analyzing the vascular effects, metabolomics, lipidomics and indirect calorimetry data obtained will be used to understand the dietary changes. The PBRC is a world-renowned research facility of the Louisiana State University focused on studies on nutrition, insulin resistance/diabetes and obesity.
- 10/01-06/12: Tulane University School of Medicine; Involved in work on evaluating intima/media ration (a surrogate marker of CVD) in insulin resistant and normal rats to study the effects of various anti-diabetic drugs in attenuation of intimal hyperplasia/restenosis following balloon catheter injury. Additionally, worked on monocrotaline induced pulmonary hypertension in SD rats to investigate prospective therapeutics and this among others included nitric oxide donors, and mesenchymal stem cells (both naïve and gene modified). Extensively worked on isolation of various vessels like carotid and femoral arteries and jugular and femoral veins for catheterization (right heart) and hemodynamic measurements and pulmonary artery and aorta for several studies. Administration of chemicals and drugs by tail vein, ip, sc injections and oral gavaging methods were routinely done.
- 07/09-09/01: College of Pharmacy, University of Louisiana at Monroe, LA: Engaged in the toxicological studies of binary mixtures of chloroform, thioacetamide, trichloroethylene, and allyl alcohol. Both, injury (ALT, AST, SDH) as well as tissue repair responses (isolation of DNA after pulse chase with <sup>3</sup>H-thymidine) were studied. Involved in preparing project proposals/reports and manuscripts and supporting graduate students.
- 01/98-06/99: College of Pharmacy, Oregon State University, Corvallis, OR: Isolation and purification of L-pipecolic acid oxidase from yeast (*R. glutinis*) and primate sources were regularly carried out for conducting inhibitor studies. Routine chromatographic methods including hydrophobic interaction, ion exchange, HPLC etc., were used for purification purposes.
- 07/73-12/97: National Institute of Nutrition (Indian Council of Medical Research) Hyderabad-500007: Experienced in preparative ultra-centrifugation methods both differential centrifugation and density gradient methods. Experienced in the synthesis of N-t-boc and N-dansyl amino acids; used the amino acid analyzer for over 10 years. Improved the acid ninhydrin method for the estimation of pipecolic acid, a definite interference from cysteine was detected. Therefore, conditions were worked out to overcome this and interference from proline rendering the method specific for pipecolic acid.

## TECHNIQUES EXTENSIVELY USED

Amino acid analysis, determination of trace elements using atomic absorption spectrophotometers, preparative ultra-centrifugation, spectrophotometric methods, radio iodination of Insulin & peptide hormones, radio-immuno assay (RIA) of insulin (raising of anti-bodies, titre determinations). Familiar with affinity chromatography, Size exclusion, Paper chromatography, Ion-exchange chromatography, hydrophobic interaction chromatography (HIC), HPLC, GLC, TLC, and PAGE methods. Over the years used extensively sub-cellular fractionations, immunological methods, bactericidal activity of leukocytes, microbiological assays, etc. Very well experienced in animal experimentations using rat, mouse, guinea pigs and rabbits (for raising the antisera), and monkey liver and brain tissue for enzyme studies. Among others, experienced in balloon catheter denudation of the carotid arteries in rats and isolation of various vessels like carotid and femoral arteries and jugular and femoral veins for catheterization (right heart) for hemodynamic measurements.

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