

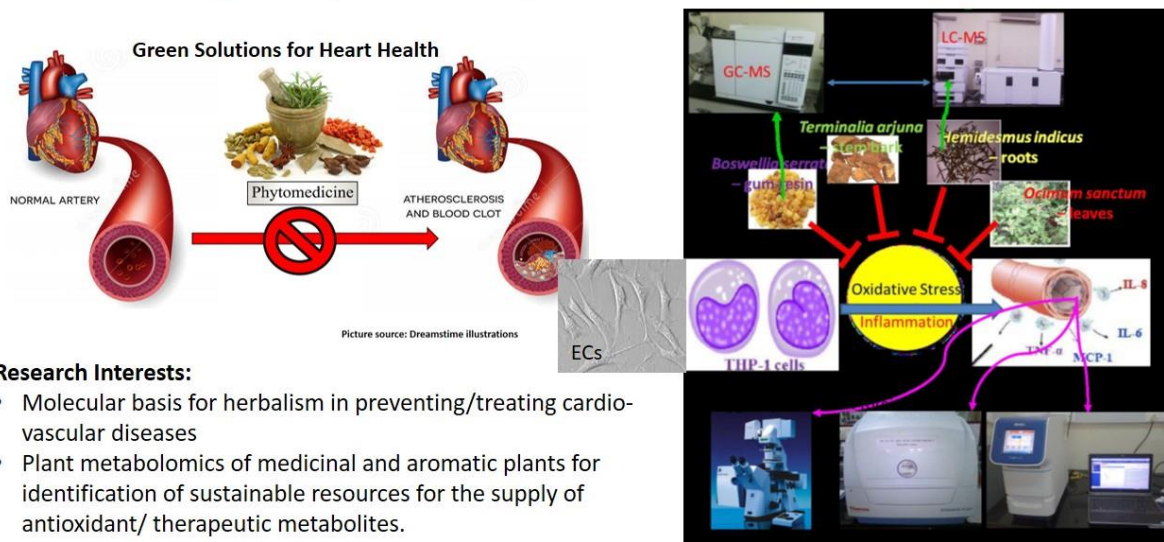


**Sarada D. Tetali, Ph.D.**  
**Professor, Department of Plant Sciences,**  
**University of Hyderabad. India**  
[stetali@uohyd.ac.in](mailto:stetali@uohyd.ac.in)  
 (or) [saradakanakagiri@gmail.com](mailto:saradakanakagiri@gmail.com)  
 +91-40-2313 4750/4512

## Professional Experience and Area of Research Interest

Prof. Tetali has more than thirty (30) years of experience in research and development. She has worked in several areas of Biology, including Metabolomics of medicinal and spice plants and their Pharmacological activities against cardiovascular diseases, human clinical nutrition- postprandial state and cardio-vascular Inflammation, Micro-Algal biotechnology towards improved photosynthetic efficiency and biomass production.

### Validation of Traditional Herbal Medicine for Cardiovascular Diseases: Molecular Basis for Athero-/Cardioprotective Properties of Botanicals and their Metabolites



#### Research Interests:

- Molecular basis for herbalism in preventing/treating cardiovascular diseases
- Plant metabolomics of medicinal and aromatic plants for identification of sustainable resources for the supply of antioxidant/ therapeutic metabolites.

Prof. Sarada D. Tetali's research group is engaged in investigating and identifying bioactive principles of those medicinal plants have been traditionally used for cardiovascular system disorders and diseases, using human cell culture (eg. Human monocytic and aortic endothelial cells) systems modeling inflammation and oxidative stress. These cell culture models are also being used to screen for toxicity of biomolecules and/or nanomaterials used in developing health care technology. Prof. Tetali's group is working towards enhanced production of bioactive metabolites using microbial technologies.

Molecular mechanism of herbal medicine in attenuating vascular inflammation is of great interest. It is well established that inflammation in the blood vessel walls sets the stage for the development of atherosclerosis, a blood vessel wall disease in which plaque builds up inside arteries. Arteries are blood vessels that carry oxygen-rich blood to heart and other parts of the body. Atherosclerotic cardiovascular disease is a multifactorial disease and is the most common cause for the morbidity and death in the world. Though the pharmacological industries are advancing in preventing and curing the disease, vascular disease remains as the most costly disease in terms of lives and money. Herbal medicines, those are historically known to be atheroprotective need attention in terms of understanding their molecular mechanism of action and identification of active chemical constituents. Such studies pave a way for their integration into the modern medicine.

In contrast to most modern medicine, herbal medicines contain multiple active ingredients, possibly having multiple targets in the body and thus can have potential solutions for addressing multifactorial diseases. Hence, metabolomics of herbal extracts, which are being used for cardiac health in traditional medicine, yield valuable information in designing new drugs for complexed diseases like cardio vascular diseases.

## **Education**

**M.Sc.** (Plant Sciences) 1989 Plant Sciences (Life Sciences) University of Hyderabad

**M.Phil.** (Plant Sciences) 1991 Plant Sciences (Plant Physiology and Biochemistry) UoH

**Ph.D.** (Plant Sciences) 1996 Plant Sciences (Plant Physiology and Biochemistry) UoH

## **Position and Employment**

Dec 2016-present	<b>Professor</b> <b>University of Hyderabad, Hyderabad, India</b>
2010-2016	Associate Professor University of Hyderabad, India
2007-2003	Reader University of Hyderabad, India
2003-2007	Assistant Project Scientist (Research Faculty position), Vascular Inflammation) <b>University of California, Davis, USA</b>
1999-2003	Postgraduate Researcher (Research Staff position) Micro-algal Biotechnology and Genetics <b>University of California, Berkeley, USA</b>
1996-1998	Post-Doctoral research fellow Micro-algal biotechnology and Genetics; Yeast molecular biology <b>Iowa State University, Ames, Iowa, USA</b>

## **Honors/Awards**

**2006.** The California Clinical Nutrition Research Unit and the Richard C. Woodard Award

**2010-11.** DBT-CREST Award (Research Area – Nanobiotechnology)

**Title:** *Application of Nanobiotechnology in removal of uremic toxins from the blood plasma of chronic renal failure patients*

**Host Institute:** Prof. J. Jankowski, Charité, Campus Benjamin Franklin (CBF), Berlin, Germany

**May 2014.** Visiting Professor at University of California, Davis, USA

## **Supervision of Research:**

Ph.D.: Degrees awarded:	<b>3</b> (Three);	Under Supervision: 4 (Four)
M. Sc. Project work:	<b>14</b> (Fourteen);	Under Supervision: 2 (Two)
Postdoctorates:	<b>1</b> (One)	

## **Research Publications/Grants:**

Gene sequences in Genbank:	<b>6</b> (Six)
Papers in Refereed journals:	<b>35</b> (Thirty five)
Research Grants:	<b>6</b> (Six completed)

Ph.D. Degrees Awarded under the Supervision of Prof. Sarada D. Tetali		
S.No.	Name of the Ph.D. student Guided and Awarded	Title of the Thesis
1.	Praveen Kumar Kokkiripati Enrolment No. 07LPPH01	Biochemical evaluation and GC-MS based metabolite analysis of three medicinal plants: Validation of anti-atherosclerotic properties of <i>Boswellia serrata</i> and <i>Terminalia arjuna</i> and cultivar variability of metabolites of <i>Curcuma</i> .
2.	Sudhansu Sekhar Choudhury Enrolment No. 08LPPH17	Metabolite profiling of <i>Ocimum sanctum</i> L. leaves and <i>Hemidesmus indicus</i> (L.) R. Br. Roots and their pharmacological activities
3.	Reddi Kiran Kumar Enrolment No. 09LPPH17	Immunomodulatory effect of <i>Tinospora cordifolia</i> and its metabolites in activated human monocytic (THP-1) cells.

**Reearsch Publications** : 35 (Thirty five)

### GENE Sequences Published in NCBI-GENBANK

AF534571 *Chlamydomonas reinhardtii* chlorophyll antenna size regulatory protein (TLA1) mRNA, complete cds gi|22536149|gb|AF534571.1|[22536149]

AF534570 *Chlamydomonas reinhardtii* chlorophyll antenna size regulatory protein (TLA1) gene, complete cds gi|22536147|gb|

AF534570.1|[22536147] DQ647436 *Chlamydomonas reinhardtii* glycolate dehydrogenase (GDH) mRNA, complete cds gi|109659946|gb|DQ647436.1|[109659946]

AY324649 *Chlamydomonas reinhardtii* isoamylase mRNA, complete cds gi|32815059|gb|AY324649.1|[32815059]

AY323823 *Chlamydomonas reinhardtii* isoamylase (Isa1) gene, complete cds gi|32492887|gb|AY323823.1|[32492887]

*Vigna mungo* proteinase inhibitor mRNA, complete cds 416 bp linear mRNA  
Accession: KP966296.1 GI: 807072321

### **Selected Publications in Peer-reviewed Journals**

- 1992 **Kanakagiri, S.** and A. S. Raghavendra. Dark respiration protects photosynthesis against photoinhibition in mesophyll protoplasts of pea (*Pisum sativum*). **Plant Physiology**, 99: 1232-1237.
- 1994 Raghavendra, A. S., K. Padmasree and **S. Kanakagiri**. Interdependence of photosynthesis and respiration in plant cells: interactions between chloroplasts and mitochondria. **Plant Science**, 97: 1-14, 1994.
- 1994 **Kanakagiri, S.** and A. S. Raghavendra. Inhibition of photosynthesis by osmotic stress in pea (*Pisum sativum*) mesophyll protoplasts is intensified by chilling or photoinhibitory light: intriguing responses of respiration. **Plant, Cell and Environment**, 17: 739-745, 1994.

4. 1996 Lu, F., **S. Kanakagiri**, V. P. Chitnis and P. R. Chitnis. Molecular Genetics of Cyanobacteria. New Avenues in Biotechnology. **Journal of Scientific and Industrial Research**, 55: 555-563.
5. 1996 **Kanakagiri, S.**, K. Padmasree and A. S. Raghavendra. Correlation between the inhibition of photosynthesis and the decrease in area of detached leaf discs or volume/absorbance of protoplasts under osmotic stress in pea (*Pisum sativum*). **Physiologia Plantarum**, 96: 395-400, 1996.
6. 2003 Polle, J. E., **S. D. Kanakagiri** and A. Melis. tla1, a DNA insertional transformant of the green alga *Chlamydomonas reinhardtii* with a truncated light-harvesting chlorophyll antenna size. **Planta**, 217(1): 49-59.
7. 2004 Posewitz, M. C., S. L. Smolinski, **S. Kanakagiri**, A. Melis, M. Seibert and M. L. Ghirardi. Hydrogen photoproduction is attenuated by disruption of an isoamylase gene in *Chlamydomonas reinhardtii*. **The Plant Cell**, 16(8): 2151-2163.
8. 2005 Nakamura, Y., **S. Kanakagiri**, K. Van, W. He and M. H. Spalding. Disruption of a glycolate dehydrogenase gene in a high-CO<sub>2</sub>-requiring mutant of *Chlamydomonas reinhardtii*. **Canadian Journal of Botany**, 83: 796-809.
9. 2006 **Tetali, S. D.**, M. S. Budamagunta, J. C. Voss and J. C. Rutledge. C-terminal interactions of apolipoprotein E4 respond to the postprandial state. **Journal of Lipid Research**, 47(7): 1358-65.
10. 2007 **Tetali, S. D.**, M. Mitra and A. Melis. Development of the light-harvesting chlorophyll antenna in the green alga *Chlamydomonas reinhardtii* is regulated by the novel *Tla1* gene. **Planta**, (225) 813-29
11. 2007 Mullick AE, Powers AF, Kota RS, **Tetali SD**, Eiserich JP, Rutledge JC Apolipoprotein E3- and nitric oxide-dependent modulation of endothelial cell inflammatory responses. **Arteriosclerosis Thrombosis Vascular Biology (ATVB)** 2007 27(2):339-45
12. 2010 **Tetali SD**, Budamagunta MS, Simion C, Hatters DM, Higgins LJ, Weisgraber KH, Voss JC and Rutledge, JC, MD. VLDL lipolysis products increase VLDL fluidity and convert apolipoprotein E4 into a more expanded conformation. **Journal of Lipid Research**. 51: 1273-1283
13. 2011 Kokkiripati PK, Bhakshu LM, Marri S, Padmasree K, Row AT, Raghavendra AS, **Tetali SD**. Gum resin of *Boswellia serrata* inhibited human monocytic (THP-1) cell activation and platelet aggregation. **Journal of Ethnopharmacology** 137(1):893-901
14. 2012 den Hartigh LJ, Altman R, Hutchinson R, Petrlova J, Budamagunta MS, **Tetali SD**, Lagerstedt JO, Voss JC, Rutledge JC. Postprandial apoE isoform and conformational changes associated with VLDL lipolysis products modulate monocyte inflammation. **PLoS One**. 2012;7(11):e50513. doi: 10.1371/journal.pone.0050513. Epub 2012 Nov 28.
15. 2013 Kokkiripati PK, Kamsala RV, Bashyam L, Manthapuram N, Bitla P, Peddada V, Raghavendra AS, **Tetali SD**. Stem-bark of Terminalia arjuna attenuates human monocytic (THP-1) and aortic endothelial cell activation. **Journal of Ethnopharmacology** 2013. 27;146(2):456-64.

16. 2013 Villablanca AC, **Tetali SD**, Altman R, Ng KF, Rutledge JC. Testosterone-derived estradiol production by male endothelium is robust and dependent on p450 aromatase via estrogen receptor alpha **SpringerPlus** 2013. 2:214 doi:10.1186/2193-1801-2-214.
17. 2014 Choudhury SS, Bashyam L, Manthapuram N, Bitla P, Kollipara P, **Tetali SD**. *Ocimum sanctum* leaf extracts attenuate human monocytic (THP-1) cell activation. **Journal of Ethnopharmacology**. 2014 May 28;154(1):148-55.
18. 2015 Vishwakarma A., **Tetali S.D.**, Selinski J., Scheibe R. and Padmasree K. Importance of the alternative oxidase (AOX) pathway in regulating cellular redox and ROS homeostasis to optimize photosynthesis during restriction of the cytochrome oxidase pathway in *Arabidopsis thaliana*. **Annals of Botany** 2015;116: 555-569.
19. 2016 Kumar RK, Basu S, Lemke HD, Jankowski J, Kratz K, Lendlein A, **Tetali SD**. Effect of extracts of poly(ether imide) microparticles on cytotoxicity, ROS generation and proinflammatory effects on human monocytic (THP-1) cells. **Clin Hemorheol Microcirc**. 2016;61(4):667-80. doi: 10.3233/CH-152027.
20. 2016 **Tetali SD**, Jankowski V, Luetzow K, Kratz K, Lendlein A, Jankowski J. Adsorption capacity of poly(ether imide) microparticles to uremic toxins. **Clin Hemorheol Microcirc**. 2016;61(4):657-65. doi: 10.3233/CH-152026.
21. 2016 Kumar RK, Basu S, Lemke HD, Jankowski J, Kratz K, Lendlein A, **Tetali SD**. Influence of nanoporous poly (ether imide) particle extracts on human aortic endothelial cells (HAECs). **Clin Hemorheol Microcirc**. 2016 64(4):931-940
22. 2016 Vishwakarma A, Dalal A, **Tetali SD**, Kirti PB, Padmasree K. Genetic engineering of AtAOX1a in *Saccharomyces cerevisiae* prevents oxidative damage and maintains redox homeostasis. **FEBS Open Bio**. 2016; 6(2):135-46. doi: 10.1002/2211-5463.12028. eCollection 2016 Feb.
23. 2016 Kulyal P, Kuchibhatla LN, Maheshwari KU, Babu KN, **Tetali SD** and Raghavendra AS. Highly sensitive HPLC method for estimation of total or individual curcuminoids in *Curcuma* cultivars and commercial turmeric powders. **Current Science**, 2016 VOL. 111 (11) 1816-24.
24. 2016 Mukherjee PK, Harwansh RK, Bahadur S, Biswas S, Kuchibhatla LN, **Tetali SD** and Raghavendra AS. Metabolomics of medicinal plants – a versatile tool for standardization of herbal products and quality evaluation of Ayurvedic formulations. **Current Science** 2016 Vol. 111 (10) 1624-30.
25. 2018 Mohanraj SS, **Tetali SD**, Mallikarjuna N, Dutta-Gupta A, Padmasree K. Biochemical properties of a bacterially-expressed Bowman-Birk inhibitor from *Rhynchosia sublobata* (Schumach.) Meikle seeds and its activity against gut proteases of *Achaea janata*. **Phytochemistry**. 2018 Jul;151:78-90. doi: 10.1016/j.phytochem.2018.02.009.

26. 2018 Kumar RK, Heuchel M, Kratz K, Lendlein A, Jankowski J, **Tetali SD**. Effects of extracts prepared from modified porous poly(ether imide) microparticulate absorbers on cytotoxicity, macrophage differentiation and proinflammatory behavior of human monocytic (THP-1) cells. **Clin Hemorheol Microcirc.** 2018;69(1-2):175-185. doi: 10.3233/CH-189112.
27. 2019 Reddi KK, **Tetali SD**. Dry leaf extracts of *Tinospora cordifolia* (Willd.) Miers attenuate oxidative stress and inflammatory condition in human monocytic (THP-1) cells. **Phytomedicine.** 2019 Aug;61:152831. doi: 10.1016/j.phymed.2019.152831.

#### Research Support Obtained from Extramural Funding Agencies

S. No.	Title	Agency	Period	Grant / Amount Mobilized (Rs. Lakhs)
1.	Immuno-phenotyping of human aortic endothelial cells and monocytes to study antiatherogenic activity of <i>Boerhaavia diffusa</i> and <i>Hemidesmus indicus</i>	ICMR PI	2012-2015	17.30
2.	Development, characterisation and validation of nanoparticles for the adsorption of hydrophobic, characterisation uremic toxins in renal failure patients (NPORE)	IGSTC PI on Indian side	2012-2015	155.54
3.	Purification and Characterization of Boswellic Acids and their Derivatives from the Gum Resin of <i>Boswellia serrata</i> (Burseraceae) using Bioassay Guided Fractionation and TOF-MS	CSIR PI	2012-2015	23.42
4	Phytomedicine for Vascular Inflammation: Effect of Leaf Extracts of <i>Ocimum sanctum</i> and Gum Resin of <i>Boswellia serrata</i> on Vascular Cell Inflammation	DBT	Jun 12 <sup>th</sup> , 2008 for 3 years	21.27
5.	Effect of <i>Terminalia arjuna</i> 's bark extract on cytokine induced activation of human aortic endothelial cells	UGC	Feb 1 <sup>st</sup> , 2010 for 3 years	8.95
6.	Metabolite library of <i>Curcuma longa</i> L. and <i>C. aromatica</i> : Resolution variability in cultivars	DBT (co-PI)	2010-2013	84.49

#### GRANTS (COMPLETED at University of California, Davis)

1. 2003-2005 \$60,000, **Tetali SD: Principal Investigator**, Genetic basis for the endothelial cell response to vascular injury, **Nora Eccles Treadwell Foundation Research Portfolio** in Diabetes, Cardiovascular Disease & Arthritis. New Investigator Award

2. Sep/30/2004- Oct/01/2008 Grant# Grant# HL 78615, \$2,027,574, **Tetali SD: Co-Investigator**, Molecular cell imaging grant -- Imaging lipoprotein-endothelial cell interactions (Dr. John C. Rutledge, M.D., Principal Investigator), **NIH R01**. The major goal of this proposal is to determine how triglyceride-rich lipoproteins (TGRL) and their associated apoprotein E (apoE) isoforms interact with endothelial cell plasma membrane micro domains, including lipid rafts, in the postprandial state. The major goal of this proposal is to determine how triglyceride-rich lipoproteins (TGRL) and their associated apoprotein E (apoE) isoforms interact with endothelial cell plasma membrane micro domains, including lipid rafts, in the postprandial state.

### **Short List of PRESENTATIONS AT SCIENTIFIC MEETINGS**

- Jul 1997 Poster presentation at Third International Symposium on Inorganic Carbon Utilization by Aquatic Photosynthetic Organisms. University of British Columbia, Vancouver, Canada
- Aug 1997 Poster presentation at Plant Biology'97 University of British Columbia, Vancouver, Canada
- Mar 1999 Oral presentation at Mid-West American Society of Plant Physiologists (ASPP) meeting, DeKalb, Illinois, USA
- Jan 2000 Oral presentation at Ninth Western Regional Photosynthesis Conference, Asilomar, Pacific Grove, California, USA
- April 2000 Posters presentations at 9<sup>th</sup> International Conference on the Cell and Molecular Biology of *Chlamydomonas*, Noordwijkerhout, The Netherlands
- July 2000 Posters presentation at Annual Meeting of the American Society of Plant Physiologists, San Diego, California, USA
- Jun 2002 Poster presentation at Tenth International Conference on the Cell & Molecular Biology of *Chlamydomonas*, Vancouver, Canada
- Dec 2007 Oral Presentation at Third Singapore-India Joint Symposium on Biological Sciences, NUS, Singapore
- Oct 2009 Poster presentation at 8TH International Congress on Coronary Artery Disease (ICCAD), Prague, Czech Republic
- Feb 2011 Oral presentation at International Congress on Plant Science Post Genomics Era (ICPSPGE), Sambalpur University, Odisha, India
- Feb 2012 Oral presentation at 12<sup>th</sup> International Congress of Ethnopharmacology on "Traditional Medicine and Globalization-The Future of Ancient System of Medicine, Jadavpur University, Kolkata, India
- Apr 2013 Oral presentation at Academia Sinica UoH-AS joint workshop on "Frontiers in Biological Sciences, University of Hyderabad, Hyderabad, India
- Nov 2014 Invited Speaker at 5<sup>th</sup> Annual International Conference of Medichem (ICM-2014)', Suzhou, China
- Feb 2014 Oral presentation at Annual Meeting of NPORE-IGSTC' at Charite, Campus Benjami Franklin, Berlin, Germany
- Jul 2014 Tetali SD Invited speaker at National Seminar (18-19 Jul, 2014) on 'Plant made pharmaceuticals & approaches to the synthesis of bio-active natural products' at Hindu College, Department of Chemistry, Guntur, Andhra Pradesh, India.
- Feb 2015 Invited Chair at 2<sup>nd</sup> International Congress of Society for Ethnopharmacology, India (SFEC - 2015) on "*Validation of Medicinal Plants and Traditional Medicines - Global Perspectives*, Nagpur, India
- Feb 2015 Oral presentation at annual IGSTC Meeting, Bernried, Germany.
- Feb 2016 Oral presentation at annual IGSTC Meeting, New Delhi, India.

- Mar 2016 Invited as Panel speaker National Seminar on Food Security for Women and Children in India: Challenges and Opportunities, from 21st-22nd March, 2016 at The Centre for Women's Studies, Kakatiya University, Warangal-506009, Telangana State, India
- Oct, 2017 Invited seminar 'Lead Molecules from Medicinal Plants: Prospects for the Drug Development' at BioQuest, School of Life Sciences, University of Hyderabad
- Oct 2017 Oral presentation 'Development, characterization and validation of nanoparticles for adsorption of hydrophobic uremic toxins in CKD patients' at IGSTC meeting, Jodhpur, India
- Nov 2017 Importance of Dark Respiration in Optimizing Photosynthetic Performance of Plants - A Turn of the Role from In-significance to Significance: A Personal Perspective Dedicated to Prof. A.S. Raghavendra at 8th International Conference on Photosynthesis and Hydrogen Energy Research for Sustainability-2017, University of Hyderabad, India
- Feb 2019 Seminar titled 'Therapeutic potential of *Tinospora cordifolia* (Willd.) Miers and its biomolecules at "Plants with health benefits and biomolecules of interest" Indo-French Joint Workshop, University of Hyderabad, India
- Nov 2019 Invited seminar 'Plant metabolomics: A tool for authentication of medicinal plant products' at 2nd Indian - French Symposium Hyderabad – Bordeaux on "Plants with Health Benefits and Biomolecules of Interest, From the plantlets to the tablet" during Nov. 27-29th 2019 at University of Bordeaux, Bordeaux, France
- Nov 2019 Invited Round Table Talks: From the plantlet to the tablet 'Quality of Medicinal plant from India' at 2nd Indian - French Symposium Hyderabad – Bordeaux on "Plants with Health Benefits and Biomolecules of Interest, From the plantlets to the tablet" during Nov. 27-29th 2019 at University of Bordeaux, Bordeaux, France