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Education: BSc, Andhra University, India (Zoology, Botany, Chemistry) 1980
MSc, Andhra University, India (Biochemistry) 1982

Research Training: Junior Research Fellow, 1983-1984 of Parlakimidi Trust at National Institute of Nutrition, Hyderabad
Junior Research Fellow, 1986-1988 of Lady Tata Memorial Trust at National Institute of Nutrition, Hyderabad

Doctoral Training: PhD (Biochemistry)
Title of thesis: Oxidative stress and calcineurin mediated events in the toxicity of chronic renal failure.
Osmania University (1997- 2002)
under the guidance of Late Prof. C Subramanyam

Post Doctoral Training: Department of Biochemistry, Osmania University (2003-2005)

Cell Therapy training:

Stem cell Training: Imperial college London, Hammersmith Hospital (2010), UK

Islet Transplantation: Schulze's Diabetes Institute, University of Minnesota (2012), USA

Positions Held: Currently working as Chief Scientist and Director, managing a team of 40 scientific staff and 18 clinician scientists in Asian Institute of Gastroenterology Hospitals (AIGH), Hyderabad, India.

Awards

| S. No | Name of Award | Awarding Agency | |
|-------|----------------------------|------------------------------------|------|
| 1. | Award of Excellence | Leap India | 2022 |
| 2 | Award of excellence | Sri Satya Sai Central trust | 2015 |
| 3 | Win Medicare award | Indian Society of Gastroenterology | 2011 |
| 4 | Junior Research Fellowship | Lady Tata Memorial Trust | 1987 |
| 5 | Gold Medal | Andhra University | 1982 |
| 6 | National merit scholarship | Govt of India | 1980 |

Membership:

1. Member, Expert Committee, Department of Health Research, GoI, 2021
2. Fellow, Royal Society of Biology: 2020
3. Member, National Academy of Medical Sciences: 2011
4. Member of Association Clinical Biochemists of India: 2009
5. Member of Twin Cities Biochemists Association: 2009
6. Institutional member (to review progress and initiation of intramural projects)
 - a) Institutional review board-2008
 - b) Institutional committee for stem cell research and therapy-2011
 - c) Institutional research committee-2015
 - d) Nominated member of the CORE group formed to initiate islet transplantation Studies in India-2012

Major Achievements:

Organizational, administrative and Management capabilities:

- Established Institute of Translational Research at Asian Institute of Gastroenterology, Hyderabad (2007) including a GMP facility and First Islet transplantation unit in India.
- Established Aware Medical Education and Research Institute- Paramedical courses; 2003

Translational Science:

- Initiated Clinical Islet Transplantation program in India, at Asian Institute of Gastroenterology, Hyderabad. This procedure is performed in a very few specialized centers across the globe.

Statement of purpose:

I have been associated with medical Institutions after obtaining Master's degree in Science with distinction and doctoral degree in Biochemistry and joined Asian Institute of Gastroenterology to establish Institute of Translational Research in 2007. Endowed with analytical abilities and administrative skills contributed to the establishment of state-of-the art Research labs, has taken a lead role in successful initiation of clinical islet transplantation studies in the country. With more than 20 years of experience in clinical biochemistry/basic research contributed to Establishment of Translational Research Institute for advancement of research in gastrointestinal diseases.

Organizing abilities in conducting Conferences: National conferences:

1. Bench to bedside conference in Gastroenterology (2009)
2. Translational research in Gastroenterology Lab to Clinic: *Course Director* (2010)
Sponsored by Indian Society of Gastroenterology
3. Translating basic science to clinical practice IBD: *Organizing Member* (2014)
4. Basics to Innovations: International Hepato Biliary Pancreatic Disease Association *Organizing Member* (2015)
5. Inflammatory Bowel Disease Summit: *Organizing Member* (2016)

International Bilateral workshop:

1. Indo US Bilateral workshop: Pancreatic Islets: From isolation to Transplantation: Conducted the conference as *Organizing Secretary* in 2012.
The workshop was attended by 10 islet transplant experts from United States of America

Collaborating Institutions:

International:

1. Vanderbilt University Medical Centre, Tennessee, USA
2. Emory Global Diabetes research centre, Atlanta, USA
3. Wisconsin medical school, University of Wisconsin, USA for Esophageal Regeneration
4. St Jude Hospital, Memphis, Tennessee, USA, on Inflammation in pancreatitis
5. University of Minnesota, USA for Islet Transplantation techniques
6. Hammersmith Hospital, Imperial College, London, UK for stem cell Therapy for liver disease
7. Cedars-Sinai Medical Center, USA for understanding Pathogenesis of pancreatic diabetes

Collaborating Institutions: National

1. Indian Institute of Chemical Technology, Hyderabad, India
2. National Institute of Nutrition, Hyderabad, India
3. National Center for Cell Sciences, Pune, India
4. University of Hyderabad, India
5. Tea Research Board of India
6. Indian Institute of Technology, Hyderabad, India
7. Dr. Reddy's Institute of Life Sciences, Hyderabad, India

Focus of research:

1. Cell Therapy studies:

i) Islet Transplantation studies initiated in India for first time

Major achievements include:

- a. Initiated autologous islet transplantation studies for chronic pancreatitis patients in India and published as **corresponding author** for the **First case series from India (GV Rao et al 2018)**
- b. **First time Demonstration** of long term functions of encapsulated islets in non-human primates by Coordinating a collaborative study of islet transplantation using immunoisulatory device to avoid immunosuppression and develop a minimally invasive technique for islet transplantation (funded by Dept of Biotechnology, Govt of India). Published as **Sasikala M et al, 2013 as First and corresponding author.**

This publication was one among 3 references based on which Joslin Diabetes Institute commenced a program on Encapsulation technologies

- c. Awarded the prestigious Win Medicare award by Indian Society of Gastroenterology, 2011 on the topic “Implications of a novel immunoisulatory device in clinical islet cell transplantation: Studies with Non Human Primates”
- d. Organized Indo US bilateral work shop on Pancreatic Islets sponsored by Indo-US Science and Technology Forum in India to create awareness of Islet transplantation.
- e. Our team in collaboration with Indian Institute of Technology, Hyderabad is the only one in India working towards development of a biocompatible device for encapsulating islets and for transplantation under IMPRINT scheme of Government of India. This enables utilization of cadaver Pancreata in India which is as on date is not utilized.

ii) Stem cells and Regenerative medicine:

- a. **Initiated for the first time Autologous hematopoietic stem cell transplantation** studies for bridging the gap between chronic liver failure and liver transplantation (Sharma M et al 2015).

1. **Cellular and molecular basis of type3c diabetes associated with chronic pancreatitis** This work documented β cell dysfunction in chronic pancreatitis for the first time (Sasikala M et al 2010, 2012, 2016, 2018).

Research publications:

1. Vijaysarathy ketavarapu, vishnubhotla Ravikanth, Mitnala Sasikala, G.V. Rao, Ch. Venkataramana Devi, Prabhakar Sripadi, Murali Satyanarayana Bethu, Ramars Amanchy, H.v.V. Murthy, Stephen J.Pandol, D. Nageshwar Reddy. Integration of metabolites from meta-analysis with transcriptome reveals enhanced SPHK1 in PDAC with a background of pancreatitis. BMC Cancer. 2022; 22:792
2. Bale Govardhan, Mitnala Sasikala, Padaki nagaraja Rao, Mithun Sharma, Anand V Kulkarni, Smita C Pawar, D. Nageshwar Reddy, Ravikanth Vishnubhotla, I148M variant of PNPLA3-gene is not associated with metabolic syndrome in patients with NAFLD in the Indian ethnicity. Human Gene. (Accepted). 2022
3. Anand V Kulkarni, Sowmya Tirumalle, Madhumita Premkumar, Karan Kumar, Syeda Fatima, Bindu Rapole, Venu Simhadri, Baqar Ali Gora, Mitnala Sasikala, Deepika Gujjarlapudi, Sadhana Yelamanchili, Mithun Sharma, Rajesh Gupta, Padaki Nagaraja Rao, D Nageshwar Reddy. Primary Norfloxacin Prophylaxis for APASL-Defined Acute-on-Chronic Liver Failure: A Placebo-Controlled Double-Blind Randomized Trial. Am J Gastroenterol. 2022 Apr 1;117(4):607-616.
4. Naveen Vankadari, Vijayasarathy Ketavarapu, Sasikala Mitnala, Ravikanth Vishnubotla, Duvvur Nageshwar Reddy, and Debnath Ghosal. Structure of Human

- TMPRSS2 in Complex with SARS-CoV-2 Spike Glycoprotein and Implications for Potential Therapeutics. *J. Phys. Chem. Lett.* 2022, 13, 5324–5333.
5. Rajendra Karki, SangJoon Lee, Raghvendra Mall, Nagakannan Pandian, Yaqiu Wang, Bhesh Raj Sharma, RK Subbarao Malireddi, Dong Yang, Sanja Trifkovic, Jacob A. Steele, Jon P. Connelly, Gella Vishwanath, Mitnala Sasikala, Duvvur Nageshwar Reddy, Peter Vogel8, Shondra M. Pruett-Miller, Richard Webby, Colleen Beth Jonsson, Thirumala-Devi Kanneganti. ZBP1-dependent inflammatory cell death, PANoptosis, and cytokine storm disrupt IFN therapeutic efficacy during coronavirus infection. *Science Immunology*. First release: 19 May 2022.
 6. Kalyan Reddy Kannan, Kshiraja Damerla, Sasikala Mitnala, Venkata Krishna Vemula Naveen Reddy P, Ravikanth Vishnubhotla, Nageshwar Reddy Duvvur. Low dose dexamethasone in combination with Remdesivir does not cause immune dysregulation. *Research Square (Pre-Print)*
 7. Apoorva M, Sasikala M, Deepika G, Anand V Kulkarni, Krishna VV, Ismail MD, Ledo T, Ravikanth VV, Nageshwar Reddy D. Duration of Immunity against COVID-19 after vaccination in Indian subcontinent. (Pre-Print)
 8. Bhanu Prakash Reddy Attunuru, Podduturi Naveenchander Reddy, Sasikala Mitnala, Gujjarlapudi Deepika, Sadhana Yelamanchili Veturi, Duvvur Nageshwar Reddy. Safety and immunogenicity of mix-match of vaccines - covishield and covaxin – A pilot study. *Research Square (Pre-Print)*
 9. Jagadeesh Kumar V, Sofia Banu, Mitnala Sasikala, Kishore V. L. Parsa, Divya Tej Sowpati, Rupali Yadav, Karthik Bharadwaj Tallapaka, Archana Bharadwaj Siva, Ravikanth Vishnubhotla, G. V. Rao, Duvvur Nageshwar Reddy. Effectiveness of REGEN-COV antibody cocktail against the B.1.617.2 (delta) variant of SARS-CoV-2: A cohort study. *Journal of Internal Medicine*, 2022, 291;380-383.
 10. Mitnala Sasikala, Jaggaiahgari Shashidhar, Gujjarlapudi Deepika, Vishnubhotla Ravikanth, Vemula Venkata Krishna, Yelamanchili Sadhana, Kottapalli Pragathi, Duvvur Nageshwar Reddy. Immunological memory and neutralizing activity to a single dose of COVID-19 vaccine in previously infected individuals. *International Journal of Infectious Diseases* 2021;(108):183-186
 11. Mitnala Sasikala, Yelamanchili Sadhana, Ketavarapu Vijayasathy, Anand Gupta, Sarala kumari Daram, Podduturi Naveen chander Reddy, Duvvur Nageshwar Reddy. Comparison of Saliva with Healthcare Workers- and Patient-Collected Swabs in the Diagnosis of COVID-19 in a Large Cohort. *BMC Infectious Diseases* (2021) 21:648:1-7
 12. Vishnubhotla Ravikanth, Mitnala Sasikala, Vankadari Naveen, Sabbu Sai Latha, Kishore Venkata Laxmi Parsa, Ketavarapu, Vijayasathy, Ramars Amanchy, Steffie Avanthi, Bale Govardhan, Kalapala Rakesh, Daram Sarala Kumari, Bojja Srikanan, Guduru Venkat Rao, D. Nageshwar Reddy. A variant in TMPRSS2 is associated with decreased disease severity in COVID-19. *MetaGene*.2021(29):100930.
 13. Ravikanth Vishnubhotla, Mitnala Sasikala, Vijayasathy Ketavarapu, Duvvur Nageshwar Reddy. High-resolution HLA genotyping identifies alleles associated with

severe COVID-19: A preliminary study from India. *Immun Inflamm Dis.* 2021;9:1781–1785

14. Mugdha V. Joglekar, Subhshri Sahu¹, Wilson KM Wong, Sarang N. Satoor Charlotte X. Dong, Ryan J Farr, Michael D. Williams, Prapti Pandya, Gaurang Jhala, Sundy N.Y. Yang, Yi Vee Chew, Nicola Hetherington, Dhan Thiruchevlam, Sasikala Mitnala, Guduru V Rao, Duvvuru Nageshwar Reddy, Thomas Loudovaris, Wayne J. Hawthorne, Andrew G. Elefanty, Vinay M. Joglekar, Edouard G. Stanley, David Martin, Helen E. Thomas, David Tosh, Louise T. Dalgaard, and Anandwardhan A. Hardika. A pro-endocrine pancreatic transcriptional program established during development is retained in human gallbladder epithelial cells. *CMGH*;8;2022
15. MUC1, CK20, and CDX2 immunohistochemical markers can sub-classify periampullary carcinomas into pancreaticobiliary, intestinal, and mixed subtypes. K. Murali Manohar, **M. Sasikala**, S. Anuradha, C. Ramji, R. B. Sashidhar, G. V. Rao, R. Pradeep, D. Nageshwar Reddy. *Indian Journal of Pathology and Microbiology.* 2021 (In Press)
16. Mithun Sharma, Pavan Kumar Pondugala, Shashidhar Jaggaihgar, Sasikala Mitnala, Vemula Venkata Krishna, Ganesh Jaishetwar, Pragati Naik, Pramod Kumar, Anand Kulkarni, Rajesh Gupta, Jagdeesh Rampal Singh, Santosh Darisetty, Anuradha Sekharan, DuvurrNageshwar Reddy, GuduruVenkat Rao, Fatima Syeda, Nitin Jagtap, Padaki Nagaraja Rao. Safety assessment of autologous stem cell combination therapy in patients with decompensated liver cirrhosis: a pilot study. *Journal of Clinical and Experimental Hepatology.* S0973-6883(21)00062-1
17. Mithun Sharma, Anand Kulkarni, **Mitnala Sasikala**, Pramod Kumar, Shasidhar Jaggaihgar, Kumar Pondugala, Ganesh Jaishetwar, Santosh Darisetty, Nitin Jagtap, Rajesh Gupta, Jagadeesh Rampal Singh, Syeda Fatima, Padaki Nagaraja Rao, Guduru Venkat Rao, Duvurr Nageshwar Reddy. Long-term Outcome of Autologous Hematopoietic Stem Cell Infusion in Cirrhosis: Waning Effect over Time. *Journal of Clinical and Translational Hepatology* 2020, vol: 9; 1–6
18. Rupa Banerjee, Vishnubhotla Venkata Ravikanth, Partha Pal, Govardhan Bale, Urmila Steffie Avanthi, Idan Goren, B. Ganesh Girish, **Sasikala Mitnala**, D. Nageshwar Reddy. NUDT15 C415T variant compared with TPMT genotyping in predicting azathioprine-induced leucopenia: prospective analysis of 1014 inflammatory bowel disease patients in India. *Aliment Pharmacol Ther.* 2020;00:1–12.
19. Anand V. Kulkarni, Mithun Sharma, Pramod kumar, Venu Simhadri, Tirumalige R. Sowmya, **Sasikala Mitnala**, Duvvuru Nageshwar Reddy, Padaki Nagaraja Rao. Adipocyte Fatty Acid–Binding Protein as a Predictor of Outcome in Alcohol-induced Acute-On-Chronic Liver Failure. *Journal of Clinical and Experimental Hepatology.* 2021;11(2):201-208
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21. Aakanksha Ruhelaa, Gokula Nathan Kasinathan, Subha N. Rath, **M. Sasikala**, Chandra S. Sharma, Electrospun freestanding hydrophobic fabric as a potential polymer semipermeable membrane for islet encapsulation, *Materials Science & Engineering C*, 2020;118:111409.
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23. Govardhan Bale, Ravikanth V Vishnubhotla, **SasikalaMitnala**, Mithun Sharma, Rao N Padaki, Smita C Pawar, Reddy N Duvvur. Whole-Exome Sequencing Identifies a Variant in

- Phosphatidylethanolamine N-Methyltransferase Gene to be Associated With Lean-Nonalcoholic Fatty Liver Disease. *Journal of Clinical and Experimental Hepatology*, 2019; 9;5: 561-568
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 27. **M. Sasikala***, Ravikanth VV, Murali Manohar K, Neha Deshpande, Sandhya Singh, Pavan Kumar P, R. Talukdar, Sudip Ghosh, Mohsin Aslam, GV. Rao, R. Pradeep, D. Nageshwar Reddy. Bach2 repression mediates Th17 cell induced inflammation and associates with clinical features of advanced disease in chronic pancreatitis. *United European Gastroenterology Journal*: 2018; 6(2), 272–282
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 29. Ratnakar Reddy B, Aparna J, **Sasikala M**,Subramanyam C, Ramaiah J, Rao GV. Talukdar R, Reddy DN. Pancreatic stellate cell: The pandora’s box for pancreatic disease biology. *World Journal of Gastroenterology*, 2017;21;23(3):382-405.
 30. Neha Deshpande, Radhika Chavan, Govardhan Bale, Urmila SteffieAvanthi, Mohsin Aslam, Mohan Ramchandani, D. Nageshwar Reddy, V. V. Ravikanth. Hereditary persistence of alpha fetoprotein is associated with -119 G>A polymorphism in AFP gene. *ACG Case Rep J* 2017;4:e33,1-3.
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Book Chapters: 4

- Kulwinder S. Dua and **Mitnala Sasikala**. Stem Cells for Tissue Repair of the GI Tract. Gastrointestinal and Pancreatico-Biliary Diseases: Advanced Diagnostic and Therapeutic Endoscopy pp 1-24.
- Sandhya Singh, **Mitnala Sasikala***, G. V. Rao, D. Nageshwar Reddy: Intestinal Stem Cells in Homeostasis and Cancer. Regenerative Medicine – from protocol to patient. Ed G. Steinhoff. 241-271. DOI 10.1007/978-36-319-27610-6_9
- **M. Sasikala***, G. V. Rao, Manu Tandan, D. Nageshwar Reddy: Gastrointestinal Stem Cells. In Regenerative Medicine, Ed Prof Gustav Steinhoff & Dr. Hoang Tu-Rapp. 365-412. DOI 10.1007/978-94-007-5690-8_14 (Springer)
- G. V. Rao, R. Pradeep, M. J. Mansard, **M. Sasikala**. Islet Cell Transplantation – What is New? In Recent Advances in Pancreas, Ed D. Nageshwar Reddy (Elsevier) 167-176.
- A Maheshwari, **M. Sasikala**. Microenvironment and islet functions. In Islet Transplantation, Ed Prof. C. Subramanyam (Elsevier) 8-16

Research Grants:

1. Indian Council of Medical Research: Proteomic analysis of pancreatic protein plugs in pursuit to identify pathways that lead to ductal obstruction in chronic pancreatitis. 2021-2024. PI
2. Science and Engineering Research Board: Understanding the regulatory role of co-activator binding protein PIMT in the pancreatic β -cells of diabetic animals and T3C diabetic humans. Co-PI
3. Science and Engineering Research Board: Plasma metabolomic profiling to identify metabolic biomarkers for early detection of prediabetes associated with Pancreatogenic diabetes (Type3cDM) in chronic pancreatitis. 2019-2022. (DST, GOI, India). PI
4. Science and Engineering Research Board: Molecular characterization of the functional role of ser/thr phosphatase PHLPP in pancreatic beta cells to gain mechanistic insights into diabetes. 2019-2022. (DST, GOI, India). Co-PI
5. Ministry of Human Resource Development, Govt of INDIA: IMPRINT Scheme. Development of macroencapsulation device for islet cell transplantation for diabetes treatment (collaborative project with Indian Institute of Technology, Hyderabad), 2017-2020 Co-PI
6. Indian Council of Medical Research: Functional and gene expression studies in islets during progression of chronic pancreatitis. 2010-2013. PI

7. Department of Biotechnology. Functional assessments of adult human pancreatic islets following autologous transplantation. 2010-2012. Co-PI
8. Indian Council of Medical Research: Nutraceutical and protective influence of epigallocatechin gallate on islet functions in chronic pancreatitis-A proof of concept study in rodents. 2017-2019, PI.
9. Indian Council of Medical Research: Impact of genetic polymorphisms of CYP2C19 and CYP3A4 on the pharmacokinetics and pharmacodynamics of proton pump inhibitors in Andhra Pradesh population (Telugu origin). 2012 - 2015. Co-PI

Research Advisor:

To DBT Wellcome Trust intermediate fellow 2012-2017 (Dr.RupjyotiTalukdar)

Title of the project: **Studies on pathogenesis of human acute pancreatitis**

Research Supervisor:

Recognized as Research supervisor by Dr. NTR University of Health Sciences, Vijayawada, Andhra Pradesh (2008-2016)

Recognized as Research supervisor by Dept of Biochemistry, College of Science, Osmania University, Telangana (2013 onwards)

Research Training to PhD students since 2009

PhD awarded to 3 students

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|----|-------------------|-------------|---|
| 1. | P. Pavan Kumar | 2009 -2013 | Characterization of islets in chronic pancreatitis: suitability for transplantation |
| 2. | P. Balkumar Reddy | 2011- 2015 | Genome variants of hepatitis B virus therapeutic response |
| 3. | B Ratnakar Reddy | 2012 - 2017 | Biochemical studies on Pancreatic stellate cells: Effects of stellate cells On β cell functions in chronic pancreatitis |
| 4. | K Murali Manohar | 2017- 2020 | miRNA in pancreatic diseases. |

PhD ongoing for 4 students

- | | | | |
|----|----------------|-------------|---|
| 5. | K. Vijayasathy | 2018 - 2021 | Proteomic and metabolomic studies in secondary diabetes in chronic pancreatitis |
| 6. | G. Sheethal | 2018 - 2021 | Cellular and molecular basis of islet dysfunction in chronic pancreatitis in mice |
| 7. | G. Renuka | 2019 – 2022 | Molecular profiling of pancreatic cancer and the Response to treatment |

Training imparted to students:

1. Imparting training to Biotechnology Consortium of India Limited students under Biotechnology Industry Training Programme, Dept of Biotechnology, Government of India (Trained 60 students)
2. Guided graduates and post graduate students for the dissertation work (120 students)
3. Training medical graduates to develop as clinician scientists in India (18)

Teaching Experience:

1. Appointed as lecturer in Dept of Biochemistry, J.J.M. Medical College in 1998 and worked for a short time.
2. Imparted theoretical and practical knowledge to paramedical students from 2003-2006 in the rank of Associate professor at Aware Medical Education and Research Institute
3. Teaching and training students selected by Biotechnology Consortium of India Limited, DBT,GOI
4. Theory classes to students who registered for PhD programme

Pre PhD Examiner: Worked as Examiner, for three years for students registered for PhD under Dr. NTR university of Health Sciences 2012-2015

Manuscripts Reviewed for Pancreatology, Digestive Disease Sciences, Clinical and Translational Gastroenterology, World journal of Gastroenterology, Tumor Biology.

Patents:

1. A Kit for Amplification and Detection of a Minority Genome Variant of Hepatitis B Virus. Application No: 3385/CHE/2010. Published in Government website.
- 2.