

# Dr. Sarath Babu, Nukala

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## Work Experience

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- Feb 2020 – present    **Postdoctoral Research Associate**, Center for Stem Cell and Regenerative Medicine, University of Illinois at Chicago (UIC), Chicago, Illinois, United States.  
Scientific area: *Stem Cells, Heart Failure, and Cardio-Oncology*
- Feb 2016 – Jan 2020    **Marie Skłodowska-Curie Early Stage Researcher**, University of Milan, Italy.  
Thesis title: *Bioanalytical and proteomic approaches in the study of pathologic ECs dysfunctionality, oxidative stress and the effects of PFKFB3 modulators.*  
Scientific area: *Cardiovascular Diseases*
- Feb 2013 – Dec 2015    **PhD Internship at Ingenus Pharmaceuticals**, Lugano, Switzerland.  
Quality Assurance, Quality Control, and Project Management Specialist.
- Feb 2013 – Dec 2015    **Project Assistant**, Centre for Cellular and Molecular Biology (CCMB), Hyderabad, India.  
Scientific area: *Neurodegenerative Diseases and Developmental Biology*
- Oct 2011 – Dec 2012    **Teaching Assistant**, Sri Venkateswara university, Tirupati, India.  
Subjects: Microbiology, Immunology, Molecular Biology, Recombinant DNA Technology, Industrial Microbiology, and Bioanalytical Techniques.

## Education

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- Feb 2016 – Jan 2020    **Ph.D., Biotechnology**, University of Barcelona, Spain.  
**Ph.D., Pharmaceutical Sciences**, University of Milan, Italy.
- Jun 2009 – Jun 2011    **M.Sc. Industrial Microbiology**, Sri Venkateswara University, Tirupati, India.  
Grade: *Outstanding*
- Jun 2006 – Apr 2009    **B.Sc. Microbiology, Zoology, and Chemistry**, Sri Venkateswara University, Tirupati, India.  
Grade: *Distinction*

## Skills

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- Laboratory    **Stem Cells and Tissue Culture related:**  
Induced Pluripotent Stem Cell (iPSC) maintenance, reprogram, and differentiation into cardiomyocytes and endothelial cells; 3D personalized patient-specific organ-on-a-chip models (Mimetas); isolation of primary cells; passaging and cryopreservation; high-throughput screening (HTS); and other cell-based assays.
- Proteomics related:**  
SILAC, iTRAQ, label free quantitative approach, 1D and 2D electrophoresis, peptide purification, HPLC, LC MS/MS analysis, and western blotting.
- Metabolomics related:**  
Quantification of metabolites – AbsoluteIDQ p180 kit.

## Skills (continued)

- **Genomics related:**  
RNA-seq, chromatin immunoprecipitation (ChIP-seq), real-time PCR, lentiviral mediated gene over-expression and siRNA mediated gene knockdown, molecular cloning, CRISPR-Cas9 gene editing, RACE assay, southern and northern blotting.
  - **Histology or imaging related related:**  
Fluorescent in situ hybridization, confocal microscopy, immunohistochemistry, and immunofluorescence.
  - **Microbiology related:**  
Isolation of bacteria, fungi from different sources; preparation of competent cells; transformation, transduction; antibody sensitivity assay, LAL test and other microbiological experiments.
  - **Bioinformatics related related:**  
STRING, DAVID, Reactome, GeneGo and IPA pathway analysis; MaxQuant, Cytoscape, Proteome Discoverer and Perseus software handling.
- Languages ■ English (Fluent), Hindi (Intermediate), Italian (Basic), Spanish (Basic), and Telugu (native).
- Computer ■ **Professional Course:** Post-Graduation Diploma in Computer Applications (PG-DCA), Grade A+.
- Strengths ■
- Ability to read, analyze and interpret scientific documents.
  - Ability to work independently, as well as with team environment.
  - Adheres to punctuality at work and able to efficiently multi-task.
  - Ability to learn required techniques quickly.
  - Good verbal and writing skills.
  - Multidisciplinary experience. Effectively troubleshoot technical issues.

## Miscellaneous Experience

### Professional Achievements

- 2016 ■ **Marie Skłodowska-Curie ITN Research Fellowship**, H2020-MSCA-Actions, European Commission.
- 2015 ■ **CSIR-FYP- miND Fellowship**, Council of Scientific and Industrial Research.
- 2013 ■ **CSIR-NWP-MEDCHEM Fellowship**, Council of Scientific and Industrial Research.
- 2012 ■ **Assistant Professorship**, qualified in APSET exam, awarded by Govt. of Andhra Pradesh, India.

### Awards

- 2020 ■ **Prestigious Scientist**, International Scientist Awards on Engineering, Science and Medicine, India.
- 2016 ■ **Best poster Presentation**, European Molecular Biology Laboratory (EMBL), Germany.
- 2011 ■ **Department Prize for Outstanding Student Performance**, awarded by Department of Microbiology and Virology, Sri Venkateswara University, India.
- 2010 ■ **Best Oral Presentation**, awarded by Sri Krishnadevaraya University, India.

## Miscellaneous Experience (continued)

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### Certification

- 2020    ■ **Hands-on mouse training.** Biological Resources Laboratory, Chicago, United States of America.
- 2018    ■ **In vivo CRISPR-Cas9 genome editing.** Institute of Genetics and Molecular and Cellular Biology (IGBMC)/CNRS formation enterprises, Strasbourg, France.
- 2017    ■ **PET Imaging and Radiopharmaceutical development.** University of Aberdeen, Scotland, United Kingdom (UK).
- 2016    ■ **Quantitative proteomics: strategies and tools to probe biology.** EMBL, Heidelberg, Germany.

### Memberships

- 2020–Present    ■ American Heart Association

### Conference Proceedings

- 2019    ■ Journal Club Presentation on "Bone marrow niche trafficking of miR-126 controls the self-renewal of leukemia stem cells in chronic myelogenous leukemia", Karolinska Institute, Stockholm, Sweden; 18 June 2019.
  - Generation of patient endothelial cell lines: study of cellular metabolism and mitochondria, IDIBAPS, Barcelona, Spain; 14 Jan 2019.
- 2018    ■ Pharmaceutical Analysis: Advanced Analytical Methods for Ligand-Target Interaction Studies in Drug Discovery, Rimini, Italy; 19–21 Sep 2018.
  - Italian-Spanish-Portuguese Joint Meeting in Medicinal Chemistry, Italy; 17–20 July 2018.
- 2017    ■ Pharmaceutical Analysis: Advanced Analytical Methodologies for Adsorption, Distribution, Metabolism, Excretion and Toxicity (ADMET) studies, Rimini, Italy; 18–20 Sep 2017.
- 2016    ■ Workshop on post-translational modifications analysis by mass spectrometry, Centro Cardiologico Monzino, Milano, Italy; 26 Sep 2016.
  - Pharmaceutical Analysis: Advanced Analytical Methodologies for Biotechnological and Biological Medicinal Products, Rimini, Italy; 21–23 Sep 2016.
  - International symposium on plasma lipids, lipoproteins and cardiovascular diseases: from genes to clinical intervention, Center for the study of atherosclerosis and center of epidemiology and preventive pharmacology, University of Milan. Italy; 21–23 Apr 2016.
  - Workshop on sample preparation in proteomics, University of Milan, Italy; 6 Apr 2016.
  - Workshop on transferable skills - Monitoring scientific progress in literature, University of Antwerp, Belgium; Feb 2016.
  - Workshop on a) The vulnerable atherosclerotic plaque; b) Pharmacological treatment of the vulnerable atherosclerotic plaque, University of Antwerp, Belgium; Feb 2016.

## Research Publications

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### Journal Articles

- 1 **Nukala, SB**, Tura–Ceide, O., Aldini, G., Smolders, V. F., Blanco, I., Peinado, V. I., Manuel Castellà, B. J., Alessandra, A., Giovanna, B. & Carini, M. (2021). Protein network analyses of pulmonary endothelial cells in chronic thromboembolic pulmonary hypertension. *Scientific reports*, PMID: 33692478. **First and co–corresponding author.**
- 2 Kwon, Y., **Nukala, SB**, Srivastava, S., Miyamoto, H., Ismail, N. I., Rehman, J., Ong, S.–B., Lee, W. H. & Ong, S.–G. (2020). Detection of viral rna fragments in human ipsc–cardiomyocytes following treatment with extracellular vesicles from sars–cov–2 coding–sequence–overexpressing lung epithelial cells. *Stem Cell Research and Therapy*, PMID: 32637965. **Co–first author.**
- 3 Silvia, R., **Nukala, SB.**, Baron, G., Aldini, G., Carini, M. & Damato, A. (2020). Advanced quantitative proteomics to evaluate molecular effects of low–molecular–weight hyaluronic acid in human dermal fibroblasts. *Journal of Pharmaceutical and Biomedical Analysis*, PMID: 32146287.
- 4 **Nukala, SB.**, Baron, G., Aldini, G., Carini, M. & Damato, A. (2019). Mass spectrometry–based label free quantitative proteomics to study the effect of 3po drug at cellular level. *ACS Medicinal Chemistry Letters*, PMID: 30996799. **First and co–corresponding author.**
- 5 **Nukala, SB.**, Luca, R., Giancarlo, A., Erika, Z., Olga Tura, C., Nicholas, L. M., Marta, C., Marina, C. & Alfonsina, D. (2019). Differentially expressed proteins in primary endothelial cells derived from patients with acute myocardial infarction. *PMID: 31446798. Hypertension, First and co–corresponding author.*
- 6 Saxena, S., **Nukala, SB.**, N, C., M, K., K, A. & Idris, M. (2016). Role of annexin gene and its regulation during zebrafish caudal fin regeneration. *Wound Repair and Regeneration*, PMID: 26972483.
- 7 **Nukala, SB.**, Krishnan, S., Swami, CVB, S., GPV, R., AVG & Idris, M. (2016). Quantitative proteomic analysis of normal and degenerated human intervertebral disc, *The Spine Journal*, PMID: 27125197.
- 8 **Nukala, SB.**, Murthy, C., Kakara, S., Sharma, R., Swamy, B., Cherukuvada, V. & Idris, M. (2016). 1–methyl–4–phenyl–1, 2, 3, 6–tetrahydropyridine induced parkinson’s disease in zebrafish. *Proteomics*, PMID: 26959078.

## References

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Available upon request