

Dr. Rasmita Samal

Assistant Professor
Department of Life Science
Central University of Karnataka
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Research Interest

Stem cell biology, cardiovascular disease molecular mechanism, regenerative biology, adult cardiac stem cells, functional genomics (transcriptomics, proteomics, secretomics), murine model, biomarkers, exosomes, drug delivery

Work Experience

Assistant Professor Dec 2019- present
Department of Life Science
Central University of Karnataka
Karnataka

Senior Scientist Nov 2018 - Nov 2019
Apollo Hospitals Education Research Foundation
Apollo Health City, Jubilee Hills, Hyderabad
Telangana
Research Focus: Development of anti-cancer drug delivery module using extracellular vesicles

Post-Doctoral Fellow Feb 2016- Jan 2018
Mentor- Prof. Stephan B Felix
University Medicine Greifswald, Germany
Research focus: Autocrine/paracrine mechanisms involving resident cardiac stem cells in healthy and diseased heart condition such as heart failure

Education

PhD, Molecular Biology (*Magna cum Laude*) 2016
University Medicine Greifswald, Germany

Master of Science, Biochemistry (9.3 CGPA) 2008
University of Hyderabad, India

Bachelor of Science, Biotechnology (80%) 2005
Andhra University, India

Professional Association

- Young DZHK (German Centre for Cardiovascular Research) member (May 2015 – Feb 18)
- Member of American Heart Association (Nov 2017- 19)

Grant Support

Received UGC-BSR Research Start Up grant of 10 lakhs for the project titled ‘Regulation of Sunshine Vitamin on Megakaryocyte-Platelet system: Focus on Thrombosis’.

Publications

1. **Samal R**, Sappa PK, Salazar MG, Wenzel K, Reinke Y, Völker U, Felix SB, Hammer E, Könemann S. Global secretome analysis of healthy resident cardiac progenitor cells and during heart failure: why ambience matters. *J Cell Physiol.* 2018;1–12. doi:10.1002/jcp.27677 (IF - 6.5)
2. Yedavilli S, Singh AD, Singh D, **Samal R***. Nano-Messengers of the Heart: Promising Theranostic Candidates for Cardiovascular Maladies. *Frontiers in Physiology.* 2022 Jul 11;13:895322. doi: 10.3389/fphys.2022.895322. (IF-4.8)
3. Könemann S, Sartori LV, Gross S, Hadlich S, Kühn JP, **Samal R**, Bahls M, Felix SB, Wenzel K. Cardioprotective effect of the secretome of Sca-1⁺ and Sca-1⁻ cells in heart failure: not equal, but equally important? *Cardiovascular Research*, 2020 Mar 1;116(3):566-575. doi:10.1093/cvr/cvz140 (IF – 13.1)
4. Wenzel K, **Samal R**, Hammer E, Dhople VM, Gross S, Völker U, Felix SB, Könemann S. Pathophysiological aldosterone levels modify the secretory activity of cardiac progenitor cells. *Mol Cell Endocrinol.* 2017 Jan 5; 439:16-25. doi: 10.1016/j.mce.2016.10.009 (IF – 4.1)
5. **Samal R**, Ameling S, Dhople V, Sappa PK, Wenzel K, Völker U, Felix SB, Hammer E, Könemann S. Brain derived neurotrophic factor contributes to the

cardiogenic potential of adult resident progenitor cells in failing murine heart. *PLoS One*. 2015 Mar 23;10(3): e0120360. doi: 10.1371/journal.pone.0120360.

(IF – 3.8)

6. Könemann S, Wenzel K, Ameling S, Grube K, Hammer E, Könemann R, **Samal R**, Völker U, Felix SB. The Other Side of the RAAS - Aldosterone Improves Migration of Cardiac Progenitor Cells. *J Cell Physiol*. 2015 Apr 8. doi: 10.1002/jcp.25013. (IF – 6.5)

7. **Samal R**, Ameling S, Wenzel K, Dhople V, Völker U, Felix SB, Könemann S, Hammer E. OMICS-based exploration of the molecular phenotype of resident cardiac progenitor cells from adult murine heart. *J Proteomics*. 2012 Sep 18;75(17):5304-15. doi: 10.1016/j.jprot.2012.06.010. (IF – 3.9)

8. Patnam S, **Samal R**, Koyyada R, Joshi P, Singh AD, Nagalla B, Soma MR, Sannareddy RR, Ippili K, Raju S, Boola RG, Lath R, Ranjan A, Ghosh S, Balamurugan M, Ray A, Manda SV. Exosomal PTEN as a Predictive Marker of Aggressive Gliomas. *Neurology India*. 2022 Jan-Feb;70(1):215-222. doi: 10.4103/0028-3886.338731. PMID: 35263886 (IF-2.2)

9. Identifying stable reference genes in polyethylene glycol precipitated urinary extracellular vesicles for RT-qPCR-based gene expression studies in renal graft dysfunction patients. Singh AD, Patnam S, Koyyada R, **Samal R**,.... Manda SV. *Transplant Immunology*. TRIM-D-22-00562 (accepted), 13th September 2022. (IF-2)

Selected Abstracts

- **American Heart Association**, Scientific Sessions, California, 2017
Cardiac Progenitor Cell's Secretome in Health and Heart Failure: Insight to Autocrine Rescue Mission. *Circulation*. 2017; 136: A20780 (Poster presentation)
- **Advances in Stem Cells and Regenerative Medicine (European Molecular Biology Organization)**, Heidelberg, 2017
Auto/ paracrine actions of resident cardiac progenitor cells in health and heart failure: Global secretome analysis. *Molecular Biology of the Cell*. December 2017 issue (Poster presentation)
- **European Society of Cardiology**, Barcelona, 2014

Pathophysiological aldosterone levels modify the secretory activity of resident cardiac progenitor cells. *European Heart Journal* (2014) 35 (Suppl 1).1-172 (Poster presentation)

- *80th Annual Meetings of German Cardiac Society (DGK)*, Mannheim, 2014
Proteomics based characterization of the regulatory effect of BDNF on resident Sca-1+ progenitor cells in the damaged myocardium. *Clinical Research in Cardiology* 103, Suppl 1, April 2014 (Poster presentation)
- *79th Annual Meetings of German Cardiac Society (DGK)*, Mannheim, 2013
Cardio-protective action of Brain derived neurotrophic factor on adult progenitor cells. *Clinical Research in Cardiology* 102, Suppl 1, April 2013 (Poster presentation)
- *World Congress of Regenerative Medicine*, Leipzig, 2011
Understanding the molecular nature of resident cardiac progenitor cells using Omics- based approach. *Future Medicine*, November 2011, PP052 (Poster presentation)

Achievements

Awarded with very good grades (<i>Magna cum laude</i>) for my doctoral thesis	2016
Received Merit Scholarship for good academic performance	2006-2008
Best poster award, University of Hyderabad on National Science Day	2008
Received UGC-JRF, Dept. of Biotechnology, University of Hyderabad	2008-2009
Qualified GATE in Life Sciences	2008
Qualified the National Eligibility Test for lectureship	2007
Awarded 'Best Student' in academics during Bachelor studies	2005



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