

## Dr. Sharada Ramasubramanyan

During my school years, as I looked under a microscope to identify the different mitotic cell division stages from an onion root tip, I was fascinated by what I saw and knew I wanted to be a researcher. As my scientific research career unfolded, I gained expertise in biological processes of DNA replication and repair, signal transduction pathways, genomics, epigenetics and chromatin remodeling. In my recent work, I had the privilege of getting hands-on-experience with some of the most transfixing 'omic-based' research tools available today (such as ChIP-seq; RNA-seq, SILAC based proteomics). This led to position as Senior Scientist and Lead, Genomics Division, V ClinBio Labs, Central Research Facility, Sri Ramachandra University. In June 2016, I joined as an associate professor at the R.S. Mehta Jain Department of Biochemistry and Cell Biology Vision Research Foundation to pursue my research career in Vision Sciences

### Research:

While pursuing my M.Sc in Biology from University of Oxford (UK), I completed two dissertation projects specializing in cell biology, DNA damage response and repair pathways. Intrigued by what I learnt, I decided to pursue my doctoral studies investigating the role of ubiquitinated PCNA in regulating post-replication repair mechanism in *Schizosaccharomyces pombe*. I was granted the Marie Curie Research Training Network Studentship to carry out the project under the supervision of Professor Alan Lehmann at University of Sussex, UK. Upon completion of DPhil in Biochemistry, I joined Professor Alison Sinclair's group at the University of Sussex, UK to investigate the functional interplay between the oncogenic Epstein-Barr virus & host DNA damage response pathway during viral replication. My main research objectives was to identify functional targets of a viral transcription factor, Zta using an integrated 'OMIC' approach – genomic (ChIP-seq), transcriptomic (RNAseq) and proteomic analyses (SILAC labelling of proteins) and data obtained are now published in peer-reviewed journals.

My current research lies in adapting state-of-the art techniques in addressing key questions in ocular research with focus on

(a) Delineating the role of neddylation, an ubiquitin-like post translational modification in retinal cell homeostasis and survival.

(b) Identifying and functionally characterize novel anti-fibrotic agents to combat pathogenic fibrosis associated with Glaucoma and

(c) Epigenetic traits and dynamics in glaucoma

### Publications:

Google Scholar : <https://scholar.google.co.in/citations?user=4uzWjEUAAAAJ&hl=en>

1. Godfrey, A., S. Ramasubramanyan, and A.J. Sinclair, *The Use of Chromatin Precipitation Coupled to DNA Sequencing (ChIP-Seq) for the Analysis of Zta Binding to the Human and EBV Genome*. *Methods Mol Biol*, 2017. **1532**: p. 191-206.
2. Traylen, C., et al., *Identification of Epstein-Barr Virus Replication Proteins in Burkitt's Lymphoma Cells*. *Pathogens*, 2015. **4**(4): p. 739-51.
3. Ramasubramanyan, S., et al., *Epstein-Barr virus transcription factor Zta acts through distal regulatory elements to directly control cellular gene expression*. *Nucleic Acids Res*, 2015. **43**(7): p. 3563-77.
4. Ramasubramanyan, S., et al., *Dynamic chromatin environment of key lytic cycle regulatory regions of the Epstein-Barr virus genome*. *J Virol*, 2012. **86**(3): p. 1809-19.

5. Ramasubramanian, S., et al., *Genome-wide analyses of Zta binding to the Epstein-Barr virus genome reveals interactions in both early and late lytic cycles and an epigenetic switch leading to an altered binding profile*. J Virol, 2012. **86**(23): p. 12494-502.
6. Flower, K., et al., *Epigenetic control of viral life-cycle by a DNA-methylation dependent transcription factor*. PLoS One, 2011. **6**(10): p. e25922.
7. Ramasubramanian, S., et al., *Ubiquitin-PCNA fusion as a mimic for mono-ubiquitinated PCNA in Schizosaccharomyces pombe*. DNA Repair (Amst), 2010. **9**(7): p. 777-84.
8. Coulon, S., et al., *Rad8Rad5/Mms2-Ubc13 ubiquitin ligase complex controls translesion synthesis in fission yeast*. EMBO J, 2010. **29**(12): p. 2048-58.
9. Gao, S., et al., *Australin: a chromosomal passenger protein required specifically for Drosophila melanogaster male meiosis*. J Cell Biol, 2008. **180**(3): p. 521-35.

### **Awards and Honors:**

2014	Recipient of Young Achiever's Award as alumni of S.D.N.B Vaishnav College for Women, India
2009- 13	Recipient of four year post-doctoral fellowship by The Wellcome Trust and Medical Research council to pursue research at University of Sussex, UK
2006	Awarded the Tom Roberts Memorial Prize 2006 for the best postgraduate talk at University of Sussex, UK
2004-2008 DPhil in	Recipient of Marie Curie Research Training Network Studentship to complete Biochemistry, University of Sussex, UK
2003-2004 Biology	Recipient of British Chevening Open Science Scholarship sponsored MSc in (Integrative Biosciences) at University of Oxford, UK
2002 Rank	Received Shri K.R. Sundarajan Memorial Gold Medal for securing University First in B.Sc Botany from University of Madras, India

### **Contact:**

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