



Soumitra Sau, Ph. D.

Associate Professor & Ramalingaswami Fellow, Amity Institute of Biotechnology, Amity University Kolkata

M.Sc. Biophysics, Molecular Biology & Genetics, Calcutta University

Ph.D. Dept. of Biochemistry, Bose Institute, Kolkata

Postdoc: University of Texas at Austin, Texas, USA

Research Scientist: University of Texas at Austin, Texas, USA

Tel Aviv University, Tel Aviv, Israel

Research Interest: Genomic instability is a hallmark of cancer cells, and the cause of various genetic and developmental disorders. Such instabilities can result from S-phase replication errors, DNA damage caused by endogenous/exogenous agents, and/or M-phase chromosome segregation defects. Cellular surveillance systems, also known as 'checkpoints' work at different stages of the cell-cycle to promote damage repair and ensure genome integrity. Apart from checkpoint signaling proteins/kinases, hundreds of different proteins work collaboratively at S-phase and M-phase to execute cell cycle functions in a coordinated and timely fashion. In their absence, cells experience fatal consequences or enter aberrant developmental programs. Broadly, our research interest is directed towards understanding the different layers of cellular security mechanisms and the coordinated protein network involved in genome surveillance and protection. The Sau laboratory intends to utilize genetic, molecular biological, biochemical and cell biological approaches to investigate (i) the functional roles of individual proteins in preventing genome instability, and (ii) the mechanisms of communication among these proteins at precise stages of the cell cycle to spatially and temporally coordinate their actions. We shall take advantage of unicellular eukaryotes budding yeast (*Saccharomyces cerevisiae*) and fission yeast (*Schizosaccharomyces pombe*), with their unique genetic, biochemical and cell biological attributes, as model organisms for the majority of these studies. However, for application-based approaches, we shall also study pathogenic yeast models.

Joining The SAU Lab: If you are motivated and hard-working, and have curiosity and enthusiasm for science, please do contact me (with your CV) at the following e-mail address: soumitrasau16@gmail.com OR ssau@kol.amity.edu

Selected Recent Publications:

1. *The Yeast PCNA Unloader Elg1 RFC-Like Complex Plays a Role in Eliciting the DNA Damage Checkpoint.* Sau et al. **MBio.** 2019 Jun 11;10(3). pii: e01159-19. doi: 10.1128/mBio.01159-19. [[American Society for Microbiology Press](#)]
2. *A structure-function analysis of the yeast Elg1 protein reveals the importance of PCNA unloading in genome stability maintenance.* Shemesh et al. **Nucleic Acids Res.** 2017 Apr 7;45(6):3189-3203. doi: 10.1093/nar/gkw1348. [[Oxford Acad. – Oxford Journals](#)]
3. *A selfish DNA element engages a meiosis-specific motor and telomeres for germ-line propagation.* Sau et al. **J Cell Biol.** 2014 Jun 9;205(5):643-61. [[Rockefeller Univ. Press](#)]

[For complete list please visit: <https://www.ncbi.nlm.nih.gov/pubmed/?term=Soumitra+Sau>]