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Research Group Leader

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AREAS OF EXPERTISE & INTERESTS

Synthetic Biology, Genome Engineering Technologies, Ribosome Profiling, Transcriptomics & Functional Genomics, Host-parasite Interactions, RNA Transport & Non-coding RNA Functions, Developmental Genetics, Medical Biotechnology

RESEARCH EXPERIENCE

- 2016- 2017 **Department of Biochemistry, University of Cambridge, United Kingdom**
“Genome-wide analysis of translational responses to stress by Ribo profiling”
- 2014-2016 **MRC Functional Genomics Unit, University of Oxford, United Kingdom**
“Functional analysis of long non-coding RNAs using CRISPR technology”
- 2013-2014 **Department of Biology, McGill University, Montreal, Canada**
“Translational control mechanisms during *Drosophila* spermatogenesis”
- 2005-2013 **Developmental Biology Unit, EMBL, Heidelberg, Germany**
“RNA processing events and *oskar* mRNA localization in *Drosophila* oocytes”
- 1997-2003 **Department of Genetic Engineering, IICB, Kolkata, India**
“Superoxide dismutase as virulence factor in *Leishmania* infection”

PUBLICATIONS

1. Roche, M., Hamilton, C., **Ghosh, S.** and Anand, P.K. (2017) Cellular Cholesterol Trafficking and SREBP2-mediated Lipogenesis Programs the NLRP3 Inflammasome Activation. *Manuscript under review.*
2. Yong, H., Wang, J.J., **Ghosh, S.*** and Liu, J.L.* (2017) Critical roles of CTP synthase N-terminal in cytoophidium assembly. *Experimental Cell Research* 354(2):122-133.
*corresponding authors
3. **Ghosh, S.*** and Liu, J.L.* (2017) Genomic Tagging of *AGO1* using CRISPR/Cas9-mediated Homologous Recombination. *Methods in Molecular Biology*, Springer publications (*in press*).
*corresponding authors
4. **Ghosh, S. ***, Tibbit, C., and Liu, J.L.* (2016) Efficient knockdown of *Drosophila* long non-coding RNAs by CRISPR interference. *Nucleic Acids Research*, doi: 10.1093/nar/gkw063.
*corresponding authors
5. **Ghosh, S.*** and Lasko, P.* (2015) Loss-of-function analysis reveals distinct requirements of the translation initiation factors eIF4E, eIF4E-3, eIF4G and eIF4G2 in *Drosophila* spermatogenesis. *PLOS One* 10(4): e0122519.
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6. **Ghosh, S.**, Obrdlik, A., Marchand, V. and Ephrussi, A. (2014) The EJC binding and dissociation activity of PYM is regulated in *Drosophila*. *PLOS Genetics* 10(6): e1004455.
7. **Ghosh, S.***, Marchand, V.*, Gaspar, I. and Ephrussi, A. (2012) Control of RNP motility and localization by a splicing-dependent structure in *oskar* mRNA. *Nature Structural Molecular Biology* 19(4), 441-449.
*equal contribution
8. **Ghosh, S.**, Goswami, S. and Adhya, S. (2003) Role of superoxide dismutase in survival of *Leishmania* within the macrophage. *Biochemical Journal* 369(Pt.3), 447-452.
9. Adhya, S., Basu, S., Bhattacharyya, S.N., Chatterjee, S., Dhar, G., Goswami, S., **Ghosh, S.**, Home, P., Mahata, B. and Tripathi, G. (2003) Mitochondrial differentiation in kinetoplastid protozoa: a plethora of RNA controls. *Differentiation* 71, 549–556.