HARSH KUMAR

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Summary

Currently working in the area of membrane trafficking in type-2 diabetes. I intend to probe deeper into mechanistic understanding of glucose transporter protein exocytosis that is dysregulated in T2D. My long-term career goal would be to detail this branch of trafficking through my own independent research group along with active university/college teaching.

Skills

- *Cell Biology:* Mammalian cell culture (fibroblasts, adipocytes, cancer cell lines) transient transfections (siRNAs and plasmids), stable cell line generation, CRISPR-based genome editing in cell lines (gRNA design, lentiviral transduction), antibody internalization and exocytosis assays; *Microscopy:* immunofluorescence (IF), fixed and live cell imaging using fluorescence and confocal imaging; *Proteomics:* purification of expressed protein through affinity chromatography (batch purification using Ni-NTA); immunoprecipitation (IP) using affinity matrices e.g. anti-FLAG, anti-GFP and IP based mass spectrometry (generation of tryptic peptides and their enrichment using ZipTip), immunoblotting (IB); *Molecular Biology:* molecular cloning and setting up of bacterial and mammalian expression systems.

- Proficient in MS-Office, GraphPad Prism, Adobe Photoshop, Manuscript preparation, Proof-reading

Experience

Postdoctoral Associate | Weill Cornell Medicine - New York, NY (USA) | 01/2021 - Currently
Investigating membrane trafficking in type-2 diabetes using cell biology-based tools.
Research Associate | Institute of Nuclear Medicine and Allied Sciences - New Delhi, (INDIA) | 08/2020 - 12/2020 | Proteomics based validation of potential biomarkers of radiation resistance.
Research Associate | All India Institute of Medical Sciences - New Delhi, (INDIA) | 01/2020 - 06/2020
Proteomics based investigation of epilepsy biomarkers in brain resection derived patient samples.
Guest Lecturer | ACBR, University of Delhi - New Delhi, INDIA | 09/2019 - 09/2019
Taught M. Sc. Biomedical Science students
Junior Research Fellow | Translational Health Science and Technology Institute - Faridabad (earlier in Gurgaon), Haryana (INDIA) | 11/2009 - 03/2011
Involved in rotavirus antigen detection assays, recombinant cloning, expression and purification of protein.

Education and Training

UNESCO-Regional Centre for Biotechnology | Faridabad (Haryana) INDIA | 11/2019
PhD: Biotechnology [Thesis: The Role of The Exocyst Complex in Cytokinesis] Completed coursework in: Research Methodology, Cell and Molecular Biology. SGPA: 7.0 | MAHE, Manipal (Karnataka) INDIA

Hemwati Nandan Bahuguna Garhwal University | Srinagar Garhwal (Uttarakhand) INDIA | 07/2009
Integrated 5 Year Program MSc: Biotechnology

Council of Scientific and Industrial Research | Delhi, INDIA | 06/2010
National Eligibility Test for Lectureship: Life Sciences

Oral lecture/poster presentations

Indian Society of Cell Biology Special Award for Best Paper presentation in Poster Session during the International Congress of Cell Biology organized by CSIR-CCMB, Hyderabad (India) from 27th to 31st January 2018.

Oral lecture and poster presentation on "The role of the Exocyst complex in cytokinesis" at The XXXIX All India Cell Biology Conference on Cellular Organization and Dynamics held from 6-8th December 2015 jointly organized by IISER and RGCB, Thiruvananthapuram (India) and Indian Society of Cell Biology (Regd.) Delhi.

Memberships

Life membership of India Society of Cell Biology (Regd.), Delhi (India); Registration No. 2015058

Publications

- Kumari Pushpa, Sunayana Dagar, Harsh Kumar, Diksha Pathak, Sivaram V. S. Mylavarapu. The exocyst complex regulates C. elegans germline stem cell proliferation by controlling membrane Notch levels. ***Development*** 2021 August 02; 148 (15). PMID: 34338279.

- Harsh Kumar, Kumari Pushpa, Kuldeep Verma, Amrita Kumari, Pergu Rajaiah, and Sivaram V. S. Mylavarapu. The exocyst complex and Rab5 are required for abscission by localizing ESCRT III subunits to the cytokinetic bridge. ***Journal of Cell Science*** 2019 June 20; 132:14. PMID: 31221728

- Sanghamitra Mylavarapu, Harsh Kumar, Smita Kumari, L. S. Sravanthi, Misti Jain, Aninda Basu, Manjusha Biswas, Sivaram V. S. Mylavarapu, Asmita Das and Monideepa Roy. Activation of epithelial-mesenchymal transition and altered β-catenin signalling in a novel Indian colorectal carcinoma cell line. ***Frontiers in Oncology*** 2019 Feb 15; 9:54. PMID: 30828563

- Rajaiah Pergu, Sunayana Dagar, Harsh Kumar, Rajesh Kumar, Jayanta Bhattacharya and Sivaram V. S. Mylavarapu. The chaperone ERp29 is required for tunnelling nanotube formation by stabilizing Msec. ***Journal of Biological Chemistry*** 2019 May 3; 294 (18):7177-7193. PMID: 30877198

- Harsh Kumar. Biotechnology: Discoveries & Their Applications in Societal Welfare. In Saxena, A. (Ed.) **Biotechnology's Business - Concept to Delivery.** *Springer Nature* (Switzerland A. G.) 2020 February 16; ISBN 978-3-030-36129-7

References

Dr. Sivaram V. S. Mylavarapu
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