Saurav Saswat Rout
Curriculum Vitae

Research experience

September 2019 – Present

Mentor: Dr. Kerry J. Lavender, University of Saskatchewan

Ph.D.

Differential effects of IFN alpha subtypes on HIV-1 associated dysfunctional CD8+ T cell immunity Studying the differential effects of IFNa2 and IFNa14 on HIV-1 infected TKO-BLT humanised mice.

August 2018 – June 2019

Mentor: Dr. Jayasri Das Sarma, IISER-Kolkata

Master's Thesis

The central proline of an internal fusion peptide of mouse hepatitis virus (MHV) serves an important role in axonal transport Worked with proline mutated Mouse Hepatitis Virus RSA59 (P) and RSMHV2 (PP) and studied its pathogenesis in optic nerve and retina in comparision with RSA59 (PP) and RSMHV2 (P).

May 2018 – July 2018

Mentor: Dr. Karin E. Peterson, RML, NIH-Montana

Summer Internship

Understanding the role of MAVS in brain capillary endothelial cells during LaCV induced blood brain barrier leakage Studied the effect of global MAVS deletion and specific MAVS knockout (using Cre-Lox) from brain endothelial cells. Also, the changes in m-RNA levels of different genes both in adults and weanling mice that might play a role during infection.

May 2017 – July 2017

Mentor: Dr. Jayasri Das Sarma, IISER-Kolkata

Summer Internship

Proline mutated recombinant strains of MHV differ in their ability to move from brain (site of inoculation) to spinal cord Inoculating both mutated and non-mutated virus intracranially and performing histochemical analysis of both brain and spinal cord with appropriate data quantification.

May 2016 – July 2016

Mentor: Dr. Uday Kumar Ranga, JNCASR-Bangalore

Summer Internship

Subcloning of PGT128 and VRC01 in pCDH CMV Gaussia 10E8-NIH 45-46m2 plasmid Using restriction digestion two gene of interest (PGT128 and VRC01) were isolated, ligated with vector pCDH CMV Gaussia 10E8-NIH 45-46m2 plasmid. Ligated mixture were transformed using *E.coli* bacteria (DH5α) and colonies were screened for the successful ligation using appropriate restriction digestion enzymes.

December 2015

Mentor: Dr. Jayasri Das Sarma, IISER-Kolkata

Visiting Undergraduate Student

Learnt scientific techniques and how to handle tools.

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Education

2019 – Present	**Doctoral Studies** Ph.D. *University of Saskatchewan, Saskatchewan*
2014 – 2019	**Undergraduate Studies (GPA-8.99/10)** 5 year Integrated BS-MS *IISER-Kolkata, Mohanpur*
2012 – 2014	**High School (95.4%)** AISSCE *D.A.V. Public School, CSpur*

Achievements

2019 **College of Medicine/University Graduate Devolved Scholarship**
University of Saskatchewan

2018 **Khorana Fellow (www.iusstf.org)**
Khorana Program for Scholars 2018

2017 **IISER-K Fellow (www.iiserkol.ac.in)**
IISER-K Summer Fellow 2017

2016 **JNCASR Fellow (www.jncasr.ac.in)**
SRFP 2016 - JNCASR

2014 **INSPIRE Fellow**
Innovation in Science Pursuit for Inspired Research Fellow 2014

Conferences and Symposium

2019 **IBS-2019 – IISEr-Kolkata**
Indian Biophysical Society Meeting 2019

2018 **BAW-2018 – Sikkim**
Workshop on advanced bioanalytical methods and applications

2018 **FIMB-2018 – IISER-Kolkata**
Frontiers in Modern Biology

2017 **AILS-2017 – IISER-Kolkata**
Advances in Life Sciences

2015 **FIMB-2015 – IISER-Kolkata**
Frontiers in Modern Biology

Leadership Experience

2020 **Volunteer at the Lighthouse supported Living, Saskatoon**
Saskatchewan

2018 **Teaching assistant for theory course of *Biochemistry*, BS-MS program**
IISER Kolkata

2018 **Mentoring students for applying to different summer internship programs**
IISER Kolkata

Technical Expertise

Humanized mice	Mice surgery, graft insertion under kidney and skin
Flow Cytometry	Flow cytometer, FlowJo v 10.6.2
Primary Culture	Brain capillary endothelial cell culture, Neuronal cell culture, Retinal ganglionic cell culture
In vivo	Intraperitoneal, intracranial and intravitreal injections, tissue harvesting, protein and RNA isolation from organs, paraffin and cryo-sectioning
Histopathology	Immunohistochemistry, Hematoxylin and eosin staining, Luxol-fast blue staining, in vivo and in vitro immunofluorescence
Molecular	Cell culture, virus infection, plaque assay, Flow cytometry, immunofluorescence, protein and RNA extraction, cDNA synthesis, western blot, real-time PCR, cell fractionation, DNA sequencing, Molecular cloning
Microscopy	Light microscopy, apotome, confocal microscopy, epifluorescence microscopy, scanning electron microscopy, transmission electron microscopy
Biostatistics	SD, SEM, Two group and three group comparisons, ANOVA
Software skills	Discovery studio, pymol, Chimera, Adobe Photoshop, Microsoft Office, GIMP 2.8, Graph Pad, Image J, Python language, LaTeX

Communication skills

Odia	Native speaker
Hindi	Native Speaker
English	Oral: good – Written: good
Bengali	Oral: good

Publications

Rout, S.S., Singh, M., Shindler, K.S. Das Sarma, J. One proline deletion in the fusion peptide of neurotropic mouse hepatitis virus (MHV) restricts retrograde axonal transport and neurodegeneration. J Biol Chem (2020).

Professional References

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Dr. Karin E. Peterson
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