

## **Kaushiki Biswas, Ph.D.**

Current position: Assistant Professor

Present Affiliation: Presidency University

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### **Education**

- Ph.D. (Biological Sciences), 2014, Indian Institute of Science Education and Research, Kolkata (IISER-K), India.
- Master of Science, (Microbiology), 2007, Bangalore University, Bangalore, India.
- Bachelor of Science, (Zoology Honors), 2005, University of Calcutta, India.
- All India Senior School Certificate Examination (10+2), 2002, Central Board of Secondary Education, India.

### **Research Experience**

- **National Post Doctoral Research Fellow (DST-SERB) at Indian Institute of Chemical Biology, Kolkata, India (2016- 2017).**  
*Research project: Role of Wnt signaling in microglial cell dynamics.*
- **Post-doctoral Research Fellow at Indian Institute of Science Education and Research, Pune, India (2014- 2015).**  
*Research project: Role of Formin2 in microtubule regulation in neuronal growth cones.*
- **Senior Research Fellow (2011- 2014) and Junior Research Fellow (2009- 2010) at Indian Institute of Science Education and Research, Kolkata, India.**  
*Research project: Elucidating the cellular and molecular mechanisms of Mouse Hepatitis Virus (MHV) induced demyelination and axonal loss in an animal model of Multiple sclerosis.*
- **Visiting scholar at University of Pennsylvania, Philadelphia, Children's Hospital of Philadelphia, Philadelphia and Philadelphia College of Osteopathic Medicine at Philadelphia during the Ph.D. program (2009).**  
*Research project: Elucidating the cellular and molecular mechanisms of Mouse Hepatitis Virus (MHV) induced demyelination and axonal loss in an animal model of Multiple sclerosis.*

### **Teaching experience**

- Assistant Professor, (WBCSC 2016): Undergraduate teaching in Microbiology 3-year degree honors course under CBCS system, Kazi Nazrul University (June 2017 – March 2019).
- Teaching assistantship and laboratory instructor in Biological sciences of 5-year integrated BS-MS students at IISER-Kolkata and IISER-Pune.

## Technical expertise

- **Animal model:** C57Bl/6 mice handling, intraperitoneal/intracranial injections, intracardial perfusion, harvesting of tissues and organs, Stereotaxis inoculations.
- **Histopathology and immunohistochemistry:** Tissue processing and microtome sectioning, Cryosectioning, histological staining, luxol fast blue (myelin) staining, Beilchowsky's silver impregnation, immunohistochemistry and immunofluorescence.
- **Cell culture:** Mammalian cell culture, mouse mixed glial culture, chick primary neuron culture (DRG and spinal), transfection, electroporation, immunolabelling, *in vitro* cell viability assays, drug treatment.
- **Virology:** *in vivo* (intracranial) and *in vitro* cell culture infection, plaque assay.
- **Molecular biology:** Cloning, TA cloning, PCR, real-time PCR, SDS-PAGE, Western blot, *in situ* hybridization, RNA isolation from tissues and cells and cDNA preparation.
- **Microscopy and Imaging:** Live cell imaging, brightfield, epifluorescence, Confocal.
- **Other techniques:** FACS, vibratome organotypic slice culture, ELISA.

## Course Works

- Host-Microbe Interaction
- Cancer Biology
- Neurobiology
- French Orientation course

## Other Administrative/Professional Experiences

- Paper setter and examiner of undergraduate Microbiology 3-year degree Honors courses of Kazi Nazrul University and Sidho Kanho Birsha University.
- External examiner of Microbiology 3 year degree Honors Practical Examinations at Michael Madhusudan Memorial College, Durgapur and Banwarilal Bhalotia College, Asansol.
- Head of the Department at Department of Microbiology, Raniganj Girls' College.
- Member of Examination committees at Raniganj Girls' College.
- Coordinated in organizing National seminar at Raniganj Girls' College and IISER Kolkata.
- Setting up of Laboratory and development of Instrumental facilities at Indian Institute of Science Education and Research, Kolkata.

## Awards and Fellowships

- Indo-US Research Professorship in microbiology, ASM-IUSSTF, 2020.
- National Post Doctoral Fellowship, N-PDF, DST-SERB, Govt. of India, 2016.

- Research Associateship, Department of Biotechnology, Govt. of India, 2015.
- Post doctoral fellowship, Indian Institute of Science Education and Research, Pune, 2014.
- Junior Research Associate by the Centre for Neuroscience, Indian Institute of Science (IISc) under Tata Trust Grants on Alzheimer's disease program, 2014.
- Thesis work selected for Oral presentation at Indo-US symposium on Viral Infections of the Nervous System at National Brain Research Centre (NBRC), India, 2014.
- Among the top three best posters at the poster presentation competition held on the 1<sup>st</sup> Departmental day of Department of Biological Sciences, IISER-Kolkata, 2013.
- Senior Research Fellowship by Council of Scientific and Industrial Research-University Grants Commission (CSIR-UGC), 2011.
- Joint Junior Research Fellowship (JRF) and lectureship, by Council of Scientific and Industrial Research-University Grants Commission (CSIR-UGC), 2008.

### Conferences

- Indo-US Symposium on Viral Infections of the Nervous System, 2014, Gurgaon, India: *Differential ability of viral neuronal transport leads to the difference in causing demyelination and axonal loss in mouse hepatitis virus model of multiple sclerosis.* (Oral)
- EMBO-India Young Scientist Networking (YSN) meeting, 2013, Bangalore, India: *Effect of microtubule disruption on neuronal spread and replication of demyelinating and nondemyelinating strains of mouse hepatitis virus in vitro.* (Poster)
- 1<sup>st</sup> International meet on advance studies in Cell Signaling Network (CeSiN) 2012, Indian Institute of Chemical Biology, Kolkata, India: *A novel pathway for the induction of oligoclonal immunoglobulin mRNAs in virus induced demyelination.* (Poster)
- International symposium on Translational Neuroscience and XXX Annual Conference of Indian Academy of Neurosciences (IAN): Unravelling mysteries in Health and Disease, 2012 Amritsar, India: *Differential mRNA expression of oligoclonal Ig in demyelinating and non-demyelinating strains of Mouse Hepatitis Virus.* (Poster)
- 79<sup>th</sup> annual meeting for Society of Biological Chemists, India (SBCI), 2010, IISc, Bangalore, India: *Axonal loss can lead to demyelination in virus induced neuroinflammation.* (Poster)

### Workshops and Schools

- DST sponsored 3<sup>rd</sup> SERC School of Neurosciences on "Advanced Imaging of the Nervous System", 2009, IISER Pune.
- Introduction to Human Genetics and Genomics, 2010, National Institute of Biomedical Genomics, Kalyani, Nadia.

## Publications

- **Biswas K**, Chatterjee D, Addya S, Khan RS, Kenyon LC, Choe A, Cohrs RJ, Shindler KS, Das Sarma J. *Demyelinating strain of mouse hepatitis virus infection bridging innate and adaptive immune response in the induction of demyelination.* **Clin Immunol.** 2016 Sep; 170:9-19. doi: 10.1016/j.clim.2016.07.004. Epub 2016 Jul 6.
- Kenyon LC, **Biswas K**, Shindler KS, Nabar M, Stout M, Hingley ST, Grinspan JB, Das Sarma J. *Gliopathy of Demyelinating and Non-Demyelinating Strains of Mouse Hepatitis Virus.* **Front Cell Neurosci.** 2015; 9:488. Epub 2015 Dec 22. PMID: 26733813.
- Kishore A, **Biswas K**, Rao N V, Shunmugam R, Das Sarma J. *Functionalized single walled carbon nanotubes facilitate efficient differentiation of neuroblastoma cells in vitro.* **RSC Adv.**, 2014 Sep, 4, 53777–53787.
- **Biswas K**, Das Sarma J. *Effect of microtubule disruption on neuronal spread and replication of demyelinating and nondemyelinating strains of mouse hepatitis virus in vitro.* **J Virol.** 2014 Mar; 88 (5):3043-7. doi: 10.1128/JVI.02545-13. Epub 2013 Dec 18.
- Chatterjee D, **Biswas K**, Nag S, Ramachandra S. G. and Das Sarma J. *Microglia Play a Major Role in Direct Viral-Induced Demyelination.* **Clin Dev Immunol.** 2013; 2013:510396. doi: 10.1155/2013/510396. Epub 2013 Jun 20.
- Shindler KS\*, Chatterjee D\*, **Biswas K**, Goyal A, Dutt M, Nassrallah M, Khan RS, Das Sarma J. *Macrophage-mediated optic neuritis induced by retrograde axonal transport of spike gene recombinant mouse hepatitis virus.* **J Neuropathol Exp Neurol.** 2011 Jun; 70(6):470-80. doi: 10.1097/NEN.0b013e31821da499. (\* equal contribution)

## Conference papers

- **Biswas K**, Addya S, Choe A, Fortina P, Kenyon LC, Shindler KS, Cohrs RJ, Das Sarma J. *Innate immune signalling initiates B cell response in viral induced demyelination*, Conference Paper, **Journal of Neurovirology**, 2013; 12<sup>th</sup> International Symposium on Neurovirology, 2013, Washington D.C.
- **Biswas K**, Kenyon LC, Das Sarma J. *Axonal Transport Limits Virus Induced Demyelination*, Conference Paper, **Journal of Neurovirology**, 2010; 10<sup>th</sup> International symposium on Neurovirology, 2010, Milan, Italy.