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Education

- 1995-2001 **Doctor of Philosophy**
National Institute of Immunology/Jawaharlal Nehru University, New Delhi, India
Thesis Title: Reconstitution of Salmonella phagosome-endosome fusion.
Broad Specialization: Cell Biology
- 1989-1995 **MBBS**, Indira Gandhi Medical College and Hospital, Nagpur, India

Research Experience

- At present Assistant professor at VTCRI and Biological department, Virginia tech.
- 2009-2011 Research fellow at Department of Biology, Brandeis university, in the laboratory of Prof. Leslie Griffith
- 2008-2009 Research Associate at School of medicine, Stanford University, in the laboratory of Prof. Thomas Südhof
- 2007-2008 Instructor at Department of Neuroscience, UT Southwestern Medical Center at Dallas, in the laboratory of Prof. Thomas Südhof
- 2005-2007 Assistant Instructor at Center for Basic Neuroscience, UT Southwestern Medical Center at Dallas, in the laboratory of Prof. Thomas Südhof
- 2003-2005 Postdoctoral fellow at Department of Neurobiology, Max Planck Institute for Biophysical-chemistry, Goettingen, Germany, in the laboratory of Prof. Reinhard Jahn
- 2001-2003 Postdoctoral fellow at Center for Basic Neuroscience, UT Southwestern Medical Center at Dallas, in the laboratory of Prof. Thomas Südhof
- 1995-2001 Graduate student, National Institute of Immunology in the laboratory of Amitabha Mukhopadhyay, New Delhi, India

Clinical Experience

1994-1995	Internship at Mayo hospital, Nagpur and Rural hospital, Armori, India
1992	Conducted epidemiological studies for “Prevalence of diabetes mellitus and hypertension among tribal in rural Maharashtra”

Teaching Experience

At present	Teaching for medical school (1 hour each lecture on lipid, carbohydrate, protein and nucleic acid metabolism), for last 3 years. Translational Biology, Health and Medicine graduate program (2 hours classes for neurotransmission, exemplar of neurological disorder and cellular and molecular basis of aging), 2 years. Lab training for several personnels.
2009-2010	Mentoring two undergraduate students, as well as medical students.
2008	Mentoring a freshman student (Neuroscience) at Brandeis University Graduate student course on “Synaptic dysfunction and neurological disorder” UT Southwestern Medical Center at Dallas.
1997-2000	Mentored four MS students for their dissertation projects, NII, India

Awards & Fellowships

1997-2000	Senior research fellowship, National Institute of Immunology, India
1995-2000	Junior research fellowship, National Institute of Immunology, India
1996	Qualified Diplomate national board (I) for Medical Doctors
1994	Qualified BIOMEET (GATE equivalent) for Medical Doctors

Memberships

2008-current	Member, Society for Neuroscience
2008-current	Member, American Association of Advancement of Science (AAAS)
1995-current	Registered, Medical Council of India

Manuscript in Submission

LaConte L, Chavan V, Willis J, Schoch S and **Mukherjee K**. CASK-mediated neurexin phosphorylation regulates interaction of the CASK-neurexin complex with liprin- α .

Srivastava S, McMillan RP, Willis J, Clark HR, Chavan V, Liang C, Zhang H, Hulver M and **Mukherjee K**. X-linked intellectual disability gene CASK regulates postnatal brain growth in a non-cell autonomous manner.

Publications

1. **Mukherjee K***, Clark HR, Chavan V, Benson E, Kidd G and Srivastava.S. Analysis of Brain Mitochondria Using Serial Block-Face Scanning Electron Microscopy. (In press * co-corresponding). *JOVE*
2. Chavan V, Willis J, Walker S, Clark H, Liu X, Fox M, Srivastava S and **Mukherjee K**.

Central presynaptic terminals are enriched in ATP but the majority lack mitochondria. *PLOS One* 2015 Apr 30;10(4):e0125185. doi.

3. Slawson JB, Kuklin EA, **Mukherjee K**, Pérez N, Donelson NC, Griffith LC. Regulation of dopamine release by CASK- β modulates locomotor initiation in *Drosophila melanogaster*. *Front Behav Neurosci*. 2014 Nov 18;8:394
4. **Mukherjee K**, Slawson JB, Christmann BL, Griffith LC. Neuron-specific protein interactions of *Drosophila* CASK- β are revealed by mass spectrometry. *Front Mol Neurosci*. 2014 Jun 30;7:58.
5. LaConte L, Chavan C and **Mukherjee K**. Identification and glycerol-induced correction of misfolding mutations in XLMR gene CASK. *PLOS One* 2014 Feb 5;9(2):e88276. Doi.
6. LaConte L and **Mukherjee K**. Structural constraints and functional divergences in CASK evolution. *Biochem. Soc. Trans*. 2013 Aug 1;41(4):1017-22.
7. Pertsinidis A, **Mukherjee K**, Sharma M, Pang ZP, Park SR, Zhang Y, Brunger AT, Südhof TC, Chu S. Ultrahigh-resolution imaging reveals formation of neuronal SNARE/Munc18 complexes in situ. *Proc Natl Acad Sci U S A*. 2013 Jul 23;110(30):E2812-20
8. Juranek JK, **Mukherjee K**, Siddiqui TJ, Kaplan BJ, Li JY, Ahnert-Hilger G, Jahn R, Calka J, Active zone protein expression changes at the key stages of cerebellar cortex neurogenesis in the rat. *Acta Histochem*. 2013 Feb 20. pii: S0065-1281(13)00017-2.
9. **Mukherjee, K** (2012) CASK: A specialized neurokinase (Chapter 5) p 73-85. *Neuromethods* 68: Protein kinase technologies. Humana press (2012)
10. Slawson JB, Kuklin EA, Ejima A, **Mukherjee K**, Ostrovsky L, and Griffith LC. Isoform specific function of CASK in central neuronal circuitry regulating locomotor behavior in *Drosophila*. *Genetics* 2011 Jan;187(1):171-84.
11. **Mukherjee K***, Sharma M, Jahn R, Wahl MC and Südhof TC. Structural Mechanism and evolution of Mg²⁺-independence of CASK kinase activity. *Science Signaling* 2010 Apr 27(3); (119): ra33. (Cover page) * **Corresponding author**
12. **Mukherjee K**, Yang X, Gerber SH, Kwon HB, Ho A, Castillo P, Liu X, Südhof TC. Piccolo and Bassoon maintain synaptic vesicle clustering without directly participating in vesicle exocytosis. *Proc Natl Acad Sci USA*. 2010 Apr 6;107(14):6504-09.
13. **Mukherjee K***, Sharma M, Urlaub H, Bourenkov GP, Jahn R, Südhof TC and Wahl MC. CASK functions as a Mg²⁺-independent neurexin kinase. *Cell* 2008 Apr 18; 133(2):328-39. (Cover page) * **Corresponding author**
14. Juranek J and **Mukherjee K***. Piccolo and Bassoon. *New encyclopedia of neuroscience: Elsevier press*. * **Corresponding author**

15. Atasoy D, Schoch S, Ho A, Nadasy KA, Liu X, Zhang W, **Mukherjee K**, Nosyreva ED, Fernandez-Chacon R, Missler M, Kavalali ET, Sudhof TC. Deletion of CASK in mice is lethal and impairs synaptic function. *Proc Natl Acad Sci U S A*. 2007 Feb 13; 104(7):2525-30.
16. Juranek J, **Mukherjee K***, Rickmann M, Martens H, Calka J, Südhof TC, Jahn R. Differential expression of active zone proteins in neuromuscular junctions suggests functional diversification *Eur J Neurosci*. 2006 Dec 24(11):3043-52. ***equal contribution**
17. Matos MF, **Mukherjee K**, Chen X, Rizo J, Sudhof TC. Evidence for SNARE zippering during Ca^{2+} -triggered exocytosis in PC12 cells. *Neuropharmacology*. 2003 Nov; 45(6):777-86.
18. **Mukherjee K**, Mazumdar J, Yadav A, Kumar R, Kunte S, Basu SK, and Mukhopadhyay A . Diverting the intracellular trafficking of Salmonella to lysosome for selective killing: activation of the late endocytic rab7 through scavenger receptor-mediated targeting of muramyl dipeptide. *J.Cell Sci*. 2002 Sep 15;115(18):3693-701
19. Schoch S, Castillo PE, Jo T, **Mukherjee K**, Geppert M, Wang Y, Schmitz F, Malenka RC, Sudhof TC. RIM1alpha forms a protein scaffold for regulating neurotransmitter release at the active zone. *Nature*. 2002 Jan 17; 415(6869):321-6.
20. **Mukherjee K**, Parashuraman S, Raje M, Mukhopadhyay A. SopE acts as an Rab5-specific nucleotide exchange factor and recruits non-prenylated Rab5 on Salmonella-containing phagosomes to promote fusion with early endosomes. *J Biol Chem*. 2001 Jun 29; 276(26):23607-15.
21. Hashim S, **Mukherjee K**, Raje M, Basu SK. and Mukhopadhyay A. Live *Salmonella* modulate expression of rab proteins to persist in a specialized compartment and escape transport to lysosomes. *J Biol Chem*. 2000 May 26; 275(21):16281-8.
22. **Mukherjee K**, Siddiqi SA., Hashim S, Raje M, Basu SK. and Mukhopadhyay A. Live *Salmonella* recruits *N*-Ethylmaleimide-sensitive Fusion Protein on phagosomal membrane and promotes fusion with early endosome. *J Cell Biol*. 2000 Feb 21; 148(4):741-53.

ABSTRACTS AND PRESENTATIONS

1. **Mukherjee K**, Sudhof TC, Wahl MC. CASK: A Neurexin Kinase. *ASCB Annual Meeting* , Dec.2007, Washington, USA
2. Juranek J, Całka J, **Mukherjee K**, Ahnert-Hilger G and Li J. Expression of active zone proteins in developing rat cerebellum. *XXVIII Zjazd Polskiego Towarzystwa Anatomicznego i XLII Sympozjum Polskiego Towarzystwa Histochemików i CytochemikówPoznań 5-7 września* Sep. 2007, Poznan, Poland.

3. **Mukherjee K.** Uncovering Neurexin-CASK signaling. *2nd Westerburg Symposium on Molecular Dynamics of the Chemical Synapse*. August 2007, Westerburg, Germany **Invited oral presentation.**
4. Juranek J, **Mukherjee K**, Rickman M and Jahn R. Molecular determinants of presynaptic specialization in ultrstructurally and functionally divergent neuromuscular junction. *7th International Symposia of Polish Neuroscience Society*. Sep 2005, Cracow, Poland
5. Allen, B., Chavan, V., Leconte, L., **Mukherjee, K.** Investigation into the Structural Basis of CASK Linked Mental Retardation (Poster Presentation). *The 2013 National Collegiate Research Conference at Harvard*
6. Allen, B., Chavan, V., Leconte, L., **Mukherjee, K.** The Role of CASK in Neurodevelopment (Poster Presentation). *Biomedical Engineering Society 2012 Annual Meeting*
7. **Mukherjee K.** Structure and function of CASK: an evolutionary perspective. Biochemical society 2013. Invited oral presentation.
8. LaConte L and **Mukherjee K.** Examining the impact of mutation in X-linked mental retardation protein CASK. *Virginia Academy of Science, 92nd Annual meeting (Structural Biology, Biochemistry and Biophysics Section) 2014.*
9. Srivastava S, McMillan RP, Hulver M, **Mukherjee K.** Low heteroplasmic level of m.3243a>g diabetogenic mutation promotes mitochondrial bioenergetics and nutrient metabolism. *Cell Symposia: Systems Approach to Metabolic Diseases, Chicago, IL, 2014.*

Funding:

2015-2020: Mechanism of optic nerve hypoplasia in CASK mutation. RO1, National Eye Institute.

Pending: Investigating the molecular function of XLID gene CASK. RO1.