

## **Gayatri Mukherjee**

### **Contact information**

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### **Current Position:**

Assistant Professor, School of Medical Science and Technology, IIT Kharagpur,

Date of joining: 2<sup>nd</sup> August, 2016

### **Education**

B. Sc. (Biological Sciences) 2001: University of Calcutta, West Bengal, India

M.Sc. (Biological Sciences) 2003: University of Calcutta, West Bengal, India

Ph.D. (Immunology) 2008: National Institute of Cholera and Enteric Diseases /  
Jadavpur University, West Bengal, India

### **Professional Experience**

**Associate/ Post-Doctoral Fellow (2009-2015):** Department of Microbiology & Immunology, Albert Einstein College of Medicine, New York, USA (Mentor: Teresa P. DiLorenzo, Ph.D.)

#### **Area of research:**

- Identification of novel peptide epitopes targeted by prevalent population of autoreactive CD8 T cells in type 1 diabetes: potential application in immune monitoring and development of novel therapeutic strategies.
- Development of therapeutic strategies to target autoreactive T cell populations: using peptide-MHC multimers or DEC-205 mediated antigen targeting to dendritic cell.
- Delivery of siRNA to specific DC subsets using liposomes to induce immune modulation

**Senior/junior Research Fellow (2004-2008):** Division of Immunology, National Institute of Cholera and Enteric Diseases, Kolkata, India (Mentor: Tapas Biswas, Ph.D.; co-mentor: Kalyan K Banerjee, Ph.D)

**Area of research:** Mucosal Immunology. Immune modulation of B-1a cells and macrophages by *Vibrio cholerae* hemolysin.

**Doctoral thesis:** “Differential Regulation of Mouse Peritoneal B-1a cells by *Vibrio cholerae* Hemolysin and its Oligomer”

## **Area of expertise**

### **■ Immunology:**

**Dendritic cells:** DC subsets and targeted antigen delivery. Effect of DC mediated antigen targeting on autoreactive T cells.

**T cells:** CD8 T cells and their involvement in autoimmune diabetes. Identification of CD8 T cell restricted diabetogenic epitopes

**MHC class I:** MHC I restricted antigen processing and presentation.

**Mucosal Immunology:** B1 cells/ Macrophages interaction with bacterial proteins on mucosal surface

### **■ Biochemistry and molecular biology:**

**Liposome encapsulated siRNA delivery:** Production of liposomes by extrusion method for targeted delivery of siRNA to DC subsets, using scFv antibodies.

**Protein purification:** cloning, expression and purification of engineered antibodies, using mammalian cell culture system, for targeted antigen delivery to dendritic cells; refolding of inclusion bodies to produce bacteria-expressed proteins and peptide-MHC complexes.

## **Reviewer of International Journals**

- Reviewed manuscripts for *Cancer Immunology, Immunotherapy* (Springer), *Journal of Amino Acids* (Hindawi press)

## **Awards and Honors**

- **AAI Trainee Abstract Award** at IMMUNOLOGY 2014, **Annual Meeting of The American Association of Immunologists**. Pittsburgh, PA, USA
- **Best Poster award** at Dennis Shields Post-Doctoral Award Symposium, **Albert Einstein College of Medicine**, 2011
- UGC-Senior Research Fellowship (2006 – 2008)
- UGC-Junior Research Fellowship (2004 - 2006)
- Qualified the Graduate Aptitude Test Examination (2004) conducted by the Indian Institute of Technology
- Qualified the Joint University Grant Commission (UGC)–Council for Scientific and Industrial Research (CSIR), National Eligibility Test (2003)
- Best presentation award in a seminar series during M.S., Presidency College, Kolkata 2003