

## SANDEEP KAUR RAVALA

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- 01/19/2017-Present      Postdoctoral Fellow with Professor John Tesmer  
Purdue University, West Lafayette, USA  
My research at Purdue is focused on structure-function studies of guanine nucleotide exchange factor called P-Rex1. P-Rex1 regulates activation of Rho GTPases, it thus promotes cell proliferation and cell migration. In many cancers, like ovarian, breast and prostate cancer, P-Rex1 is found to be overexpressed and is therefore an important therapeutic target. We are using X-ray crystallography and Cryo-EM to study P-Rex1.
- 01/2016-01/2017      Postdoctoral Fellow with Professor Seema Mattoo  
Department of Biological Sciences, Purdue University, West Lafayette, Indiana, USA.  
Worked on Fic proteins. These proteins catalyze the transfer of AMP moiety onto other proteins. In Mattoo lab, I was involved in characterization of a novel Fic protein using molecular and biochemical techniques.
- 04/2014-12/2015      Senior project Fellow  
Institute of Microbial Technology, Chandigarh India. Worked on identification and characterization of interacting partners of mycobacterial Ser/Thr kinase, PknA with emphasis on understanding how PknA mediated phosphorylation regulates different physiological processes
- 02/2008-03/2014      Ph.D (Molecular Microbiology and Biochemistry)  
Thesis Title: “**Studies on a eukaryotic-type Ser/Thr kinase from *Mycobacterium tuberculosis* and its interacting partners**”  
Ph.D Supervisor: Dr. Pradip K. Chakraborti  
Institute of Microbial Technology, Chandigarh, India  
Degree awarded by Jawaharlal Nehru University, New Delhi in March, 2014
- 08/2005-06/2007      Masters of Science (Honors School) **in Biotechnology**  
Panjab University, Chandigarh
- 04/2002-06/2005      Bachelors of Science (Honors School) **in Biotechnology**  
Panjab University, Chandigarh

### **Publications:**

**Sandeep K Ravala**, Suruchi Singh, Ghanshyam S Yadav, Subramanian Karthikeyan, Pradip K. Chakraborti. Manuscript entitled “Evidence that phosphorylation on threonine in GT motif triggers activation of PknA, a eukaryotic-type Serine/Threonine kinase from *Mycobacterium tuberculosis*.” (The FEBS Journal, 2015, doi:10.1111/febs.15250)

Ghanshyam S Yadav, **Sandeep K Ravala**, Neha Malhotra, Pradip K. Chakraborti. Manuscript entitled “Phosphorylation mediated regulation of mycobacterial sirtuin” (**Frontiers in Microbiology**, 2016, doi: 10.3389/fmicb.2016.00677).

Ghanshyam S Yadav, **Sandeep K Ravala**, Sangita Kachhap, Meghna Thakur, Abhishek Roy, Balvinder Singh, Subramanian Karthikeyan, Pradip K. Chakraborti. Manuscript entitled “Eukaryotic-type Serine/Threonine kinase mediated phosphorylation at Threonine -169 perturbs mycobacterial guanylate kinase” (**Bioscience Reports**, 2017, doi: 10.1042/BSR20171048).

#### **Symposia Abstracts:**

**Sandeep K Ravala**, Suruchi Singh, Ghanshyam S Yadav, Sanjay Kumar, Subramanian Karthikeyan and **Pradip K. Chakraborti**. “Phosphorylation outside activation loop regulates PknA Activation”. Life Sciences Postdoc Mini Symposium, Purdue University, April 15, 2016

**Sandeep K Ravala**, Ghanshyam S Yadav and Pradip K. Chakraborti. “Deciphering crucial threonines towards functionality of an essential kinase from *M. tuberculosis*”. Abstract (14-1667-EB) EB 2014, San Diego, USA, April 26-30, 2014

**Sandeep K Ravala**, Suruchi Singh, Ghanshyam S Yadav, Sanjay Kumar, Subramanian Karthikeyan and **Pradip K. Chakraborti**. “Understanding signaling in mycobacteria: Tale of a eukaryotic-type Ser/Thr kinase”. International conference on Molecular signaling: Recent Trends in Biomedical and Translational Research, IIT, Roorkee, Dec 17-19, 2014

#### **AWARDS/HONOURS:**

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| 2016      | Awarded in poster presentation in Life Science Postdoc Minisymposium held at Purdue University        |
| 2014      | Awarded ASBMB travel award to attend Experimental Biology (EB) conference at San Diego, in April 2014 |
| 2011-2013 | Awarded Senior Research Fellowship from University Grants Commission (UGC), Govt. of India            |
| 2008-2011 | Awarded Junior Research Fellowship from University Grants Commission (UGC), Govt. of India            |

#### **TECHNICAL SKILLS:**

Molecular gene cloning and site directed mutagenesis, Expression and purification of recombinant protein (Affinity Chromatography, Ion Exchange, Size Exclusion Chromatography) from *E.coli* and insect cells, Biochemical Assays, Radioactivity based kinase assays, autoradiography, Standard cell culture techniques, basic bioinformatics including sequence alignment analysis, structure prediction analysis, molecular visualization and graphics

