

MAHAVIR SINGH, Ph.D.

Assistant Professor and

Ramalingaswami Re-entry Fellow

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Karnataka, INDIA

RESEARCH INTERESTS

Non-coding RNA, RNA-protein interaction, telomere biology, solution NMR, X-ray crystallography, biophysics

TEACHING

Aug semester: Graduate course (1/4 course)

MB207: Molecular Spectroscopy and its Biological Applications

Jan semester: Undergraduate course (1/2 course)

UB207: General Biochemistry

EDUCATION

2002-2007 PhD in Chemistry and Biochemistry

MPI Biochemistry and TU Munich, Germany

Mentor: Prof. Tad A. Holak

Director: Prof. Robert Huber

1999-2001 MSc Biochemistry, South Campus, Delhi University

1996-1999 BSc Biochemistry, Deshbandhu College, Delhi University

RESEARCH EXPERIENCE

May 2014 onwards Assistant Professor

MBU, IISc, India

2012 – Apr. 2014 Associate Research Scientist

UCLA, USA (PI: Prof. Juli Feigon)

2007 – 2012 Postdoctoral Research Associate

UCLA, USA (PI: Prof. Juli Feigon)

2002 - 2006 Ph.D. Graduate Research

MPI Biochemistry, Germany (Adviser: Prof. Tad A.Holak)

Sept. 2001-Dec. 2001 JRF, CSIR, India

AllMS, India (Advisor: Prof. Subrata Sinha)

2001-2001 M.Sc. Dissertations

Dept. of Biochemistry, University of Delhi, India

FELLOWSHIPS AND RECOGNITIONS

Oct. 2014 Ramalingaswami re-entry fellowship from DBT, India
May 2012 Postdoctoral research excellence award from MBI and Biochem dept. UCLA.
May 2012 Chancellor nomination certificate for postdoctoral research excellence, UCLA.
Mar. 2012 Travel award from RNA society to attend 17th RNA society meeting, An Arbor, Michigan.
Dec. 2004 Crystal award from Prof. Dr. Robert Huber (Chemistry Nobel laureate 1988).
2000-2001 JRF and eligibility for lectureship award from CSIR and UGC, India

PUBLICATIONS

Singh, M., Wang, Z., Cascio, D., and Feigon, J. Structure and interactions of the CS domain of human H/ACA RNP assembly protein Shq1. *Journal of Molecular Biology*, 2015, 247:807-823.

Singh, M., Choi C., and Feigon, J. xRRM: a new class of RRM found in the telomerase La family protein p65. *RNA Biology*, 2013,10:353-359.

Illustrated on cover page of the journal.

Singh, M., Wang, Z., Koo, B-K., Patel, A., Cascio, D., Collins, K., and Feigon, J. Structural basis for telomerase RNA recognition and RNP assembly by the holoenzyme La family protein p65. *Molecular Cell*, 2012, 47:16-26.

Highlighted in UCLA newsroom and other places like NIH, NSF, UC health, etc.

Featured on NIGMS e-newsletter 'Biomedical Beats'.

Singh, M., Gonzales, F.A., Cascio, D., Heckmann, N., Chanfreau, G., and Feigon, J. Structure and functional studies of the CS domain of the essential H/ACA RNP assembly protein Shq1. *Journal of Biological Chemistry*, 2009, 284: 1906-1916.

Singh, M., Popowicz, G.M., D'Silva, L., and Holak, T.A. Structural ramification for acetyl-lysine recognition by the bromodomain of human BRG1 protein, a central ATPase of the SWI/SNF remodeling complex. *Chembiochem*. 2007, 23:1308-1316.

Singh, M., D'Silva, L., and Holak, T.A. DNA binding properties of the recombinant high-mobility-group-like AT hook-containing region from human BRG1 protein. *Biological Chemistry*, 2006, 387:1468-1478.

D'Silva, L., Ozdowy, P., Krajewski, M., Rothweiler, U., **Singh, M.**, and Holak, T.A. Monitoring the effects of antagonists on protein-protein interactions with NMR spectroscopy. *Journal of the American Chemical Society*, 2005, 127:13220-13226.

Singh, M., Krajewski, M., Mikolajka, A., and Holak, T.A. Molecular determinants for the complex formation between the retinoblastoma protein and LXCXE sequences. *Journal of Biological Chemistry*, 2005, 280:37868-37876.

Smialowski, P., **Singh, M.**, Mikolajka, A., Majumdar, S., Joy, J.K., Nalabothula, N., Krajewski, M., Degenkolbe, R., Bernard, H.U., and Holak, T.A. NMR and mass spectrometry studies of putative interactions of cell cycle proteins pRb and CDK6 with cell differentiation proteins MyoD and ID-2. *Biochim Biophys Acta*. 2005, 1750:48-60.

CONFERENCE PRESENTATION

Nov 2014 Invited talk at 43rd National crystallography Seminar, CDRI, Lucknow, India

Feb 2013 Poster presentation and participation at Young Investigator Meet, Jodhpur, India

Jan 2013 Invited lecture to chemistry and biology interface graduate students at UCLA.

Oct 2012 Talk at the Molecular Biology Institute, UCLA lake Arrowhead retreat.

Oct 2012 Talk at Young Investigator Meet of India, Boston, USA.

May 2012 Talk at 17th RNA society meeting, University of Michigan, An Arbor, USA.

Sep 2010 Participation in Sackler Colloquia of the National Academy of Sciences, USA.

Aug 2008 Poster presentation at XXI ICMRBS NMR conference, Hyderabad, India.

Jun 2008 Poster presentation at GRC on 'Nucleic acids', Salve Regina University, USA.

Jan 2007 NIH meeting assistant for Keystone Symposia 'Frontiers of NMR in structure biology', SLC, USA.

Jul 2005 Talk at MPI for Biochemistry graduate retreat at Ringberg castle, Munich, Germany.

Jan 2005 Poster presentation at XXIII ICMRBS NMR conference, San Diego, USA.

OTHER PROFESSIONAL EXPERIANCE

Completed 4th APS X-ray Data collection workshop and CCP4 School in June 2011 held at Argonne National Laboratory.