

Dr. Ravi Tandon, M.Sc., PhD

Assistant Professor
School of Biotechnology
Jawaharlal Nehru University
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Date of Birth: 26th Sept. 1977



CURRICULUM VITAE

Employment

- ✦ *Assistant Professor:* School of Biotechnology, Jawaharlal Nehru University, New Delhi (June 2014- present)
- ✦ *Immunology Staff Scientist:* Hawaii Center for AIDS, University of Hawaii, Honolulu, HI USA May (2011-2014).
- ✦ *Postdoctoral Scholar:* University of California, San Francisco USA (2008-2011).

Education

- ✦ *Ph.D. (Virology):* University of Zürich, Zürich, Switzerland (2002-2008).
- ✦ *M.Sc. (Biotechnology):* Jawaharlal Nehru University (JNU), New Delhi, India (1998-2000).
- ✦ *B.Sc. (Zoology, Botany and Chemistry):* Ewing Christian College (Allahabad University), Allahabad, India (1995-1998).

Area of Research

- ✦ HIV Immunology
- ✦ Immune exhaustion
- ✦ Aging and Immunosenescence
- ✦ Mucosal immunity and chronic inflammation
- ✦ Human endogenous retrovirus (HERVs)
- ✦ Feline viral infection, emphasis on retroviruses

Research/Industrial experience

- ✦ Worked on an independent research project titled “**Studies on the Over expression of BamHI under T7 promoter in E.coli**” during M.Sc at JNU, New Delhi, India (1999-2000).
- ✦ Research experience in the production and quality control of **Oral Polio Vaccine (OPV)** at **Bharat Immunologicals and Biologicals Corporation Ltd. (BIBCOL)**, Bulandshahr, India (2000-2001).
- ✦ One year research experience in R&D department of **BASF India Ltd**, Mumbai, India (2001-2002).

- ✚ PhD in virology/molecular biology with project titled “**Endogenous retroviruses: do they influence the susceptibility and pathogenesis of exogenous feline leukemia virus infection?**” at the **Vetsuisse Faculty of the Universities Bern and Zurich, Zurich, Switzerland (2002-2008)**.
- ✚ Postdoctoral fellowship in **HIV-immunology** from **University of California, San Francisco (UCSF), USA (2008-2011)**.
- ✚ Immunology Staff Scientist at **Hawaii Center for AIDS, John A. Burns School of Medicine, University of Hawaii, USA (2011-2014)**

Publication

- ✚ Over 28 papers, published in journals with peer-review process.
- ✚ Total citations: 599, h-index: 15, i10-index: 19

Conferences/Workshops

- ✚ International Feline Retrovirus Research Symposium (IFRRS), Pisa, Italy (2004)
- ✚ International Feline Retrovirus Research Symposium (IFRRS), Washington DC, USA (2006)
- ✚ Biomedical Sciences (BMS) retreat, Granlibakken Conference Center & Resort, North --Lake Tahoe, CA USA (2008)
- ✚ Keystone Symposia (HIV pathogenesis), Colorado, USA (2009)
- ✚ Frontiers of Retrovirology, Montpellier, France (2009)
- ✚ Immunology retreat, Asilomar, CA, USA (2009)
- ✚ Keystone Symposia (HIV vaccine), Whistler, Canada (2011)
- ✚ American Association of Immunologists (AAI), San Francisco, CA, USA (2011)
- ✚ American Association of Immunologist (AAI), Honolulu, HI, USA (2013)
- ✚ Workshop attended on DST-Sponsored Mass Spectroscopy for Proteomics at Advanced Instrumentation Research Facility (AIRF), JNU, New Delhi – 6th – 8th August, 2014
- ✚ ICGEB International Course on “Role of NMR spectroscopy in Structural Biology, Metabonomics and Drug Discovery” 15-20 November, 2016, ICGEB, New Delhi

Oral presentations/Invited guest lectures

- ✚ International Feline Retrovirus Research Symposium (IFRRS), **Pisa, Italy** (2004)
- ✚ International Feline Retrovirus Research Symposium (IFRRS), **Washington DC, USA** (2006)
- ✚ Keystone Symposia (HIV Vaccine), **Whistler, Canada** (2011)
- ✚ American Association of Immunologist (AAI), **Honolulu, HI, USA** (2013)
- ✚ Guest lecture on “Novel Therapeutic Approach to HIV Infection” at 16th Refresher Course in Biotechnology organized by **Academic Staff College (ASC), JNU, New Delhi- Wednesday, 20th August 2014**
- ✚ Delivered a special lecture at **Mahatma Gandhi Memorial Medical College (MGM Medical College), Indore, MP** on December 20, 2014

- ✚ Plenary session talk at National Conference on “New Avenues in Microbiology: Challenges and Prospects (NAMCAP-2015)” at **Department of Microbiology, M.D. University, Rohtak**, India on March 11, 2015
- ✚ Special lecture at **Sanjay Gandhi Post Graduate Institute (SGPGI), Lucknow** on April, 2015
- ✚ Invited speaker at **St. John’s Medical Research Institute, Bangalore** on June 16, 2015.
- ✚ Guest lecture on “Application of FACS in Biology” at 1st Refresher Course in Life Sciences and Biotechnology organized by **Academic Staff College (ASC), JNU, New Delhi**- Tuesday, 28th July 2015
- ✚ Guest lecture on “Current Challenges in HIV Cure” at 1st Refresher Course in Life Sciences and Biotechnology organized by **Academic Staff College (ASC), JNU, New Delhi**- Wednesday, 29th July 2015
- ✚ Invited speaker in DST-Inspire Internship Science Camp-2015 on 6.11.2015 at the Botany Department, **Allahabad University, Allahabad**.
- ✚ Oral presentation at 56th Annual Conference of Association of Microbiologist of India (AMI-2015) & International Symposium on “**Emerging Discoveries in Microbiology**” at JNU, New Delhi on December 9, 2015.
- ✚ Oral presentation at Convention Center, Jawaharlal Nehru University, New Delhi on Science Day 2016, organized by **Jawaharlal Nehru University, New Delhi** and sponsored by Department of Science and Technology, Govt. of India on February 26, 2016.
- ✚ Invited Guest Lecture in **International Symposium on HIV and Hepatitis at South Asian University, New Delhi on September 1, 2016**.
- ✚ Guest lectures for M.Sc. students at **Interdisciplinary Biotechnology Unit (IBU), Aligarh Muslim University (AMU), Aligarh** on October 24-25, 2016.

Awards & Academic Honors

- ✚ Merit certificate in B.Sc (1998).
- ✚ Fellowship award by Department of Biotechnology (DBT), Govt. of India, New Delhi, India (1998-2000).
- ✚ Fellowship by Biotech Consortium India Ltd. (BCIL), New Delhi, India (2000-2001)
- ✚ **Young Scientist Award by Association of Microbiologists of India (December 7-10, 2015)**
- ✚ Successfully completed UGC sponsored orientation course at Human Resource Development Centre, Jawaharlal Nehru University, with “A” grade (16.11.2015-11.12.2015).

Supervisor

- ✚ Mr. Shashi Prakash Singh, JNU (M.Sc. thesis 2015)
- ✚ Ms Priya Gupta, JNU (M.Sc. thesis 2016)

Mentor

- ✚ Mr. John Ngo from University of Hawaii, Manoa, Honolulu (Undergraduate, June-July, 2016)
- ✚ Ms Tiana Elisara from University of Hawaii, Manoa, Honolulu (Undergraduate, June-July, 2016)
- ✚ Serving as Mentor in **NIH-sponsored Global Health Fellows programme of Northern Pacific Global Health (NPGH) Research**, and representing JNU as Indian site with University of Hawaii, Manoa (<http://fogartyfellows.org/program-overview/india/>).

Membership

- ✚ Life member of Indian Immunology Society.
- ✚ Life membership of Association of Microbiologist of India (AMI).

Peer Reviewer

- ✚ *Molecular and Cellular Probes*
- ✚ *Veterinary Immunology and Immunopathology*
- ✚ *Plos One*

Academic Editor

- ✚ *Peer J*
- ✚ *Clinical Research in HIV/AIDS*
- ✚ *Journal of HIV/AIDS Research*

Organizing skill

- ✚ Organized annual departmental symposium “**BioEpoch-2016**” in the School of Biotechnology, Jawaharlal Nehru University, JNU on March 14-15, 2016.
- ✚ Organized Deutsche Forschungsgemeinschaft (DFG)-JNU joint meeting- “Opportunities of Research & Funding by DFG” at the convention center, Jawaharlal Nehru University on June 16, 2016 to facilitate collaborative Indo-German research.

Languages known

English (fluent), Hindi (fluent), and German (manageable)

Research Projects:

1. **Tandon R (PI)**, Mechanism of Aging and HIV-1 Driven Inflammation in the Development of non-AIDS Morbidities; by **UPOE II: (Rs 11 lakhs)**
2. **Tandon R, UGC start up grant (Rs 6 lakhs)**

3. **Tandon R (PI)**, Study of gut microbiota and their potential role in inflammation during suppressive antiretroviral therapy in perinatally HIV-infected children; **DST-SERB (Rs 50 lakhs)**.

Techniques known

ELISA, western blot, flow cytometry (LSR Fortessa), lymphocyte purification, primary cell culture, PBMC culture, ELISPOT assay, lymphocyte culture and infection, virus isolation, virus neutralizing antibody test, immunofluorescence, PCR, nucleic acid sequencing, absolute quantification by qRT-PCR assay, *in vitro* infectivity assay, molecular cloning, Immunoprecipitation, GST-pull down assay, EMSA (Electrophoretic mobility shift assay), luciferase assay, HLA typing, HLA restriction experiments etc.

Publications

28. Abdel-Mohsen M, Chavez L, **Ravi Tandon**, Chew GM, Deng X, Danesh A, Keating S, Lanteri M, Samuels ML, Hoh R, Sacha JB, Norris PJ, Niki T, Shikuma CM, Hirashima M, Deeks SG, Ndhlovu LC, Pillai SK. "*Human Galectin-9 Is a Potent Mediator of HIV Transcription and Reactivation*" **PLoS Pathog.** **2016** Jun 2;12(6):e1005677. doi: 10.1371/journal.ppat.1005677. eCollection 2016 Jun
27. Kumar A, Bhandari A, Sarde SJ, Muppavarapu S, **Ravi Tandon** "Data on the evolutionary history of the V(D)J recombination-activating protein1- RAG1 coupled with sequence and variant analyses" **Data in Brief.** **2016** May 20;8:87-92. doi: 10.1016/j.dib.2016.05.021. eCollection 2016.
26. Walpita P, Johns LM, **Ravi Tandon**, and Moore ML, "Mammalian Cell-Derived Respiratory Syncytial Virus-Like Particles Protect the Lower as well as the Upper Respiratory Tract" **PLoS One**, **2015** Jul 14; 10 (7):0130755 doi: 10.1371/journal.pone.0130755
25. A. Kumar*, A. Bhandari, Sandeep J Sarde, S. Muppavarapu, and **Ravi Tandon***, "Understanding V(D)J recombination initiator RAG1 gene using molecular phylogenetic and genetic variant analyses and upgrading missense and non- coding variants of clinical importance" **BBRC**, **April 2015**, doi: 10.1016/j.bbrc.2015.04.125 (***senior corresponding author**)
24. Kiera L. Clayton, Matthew B. Douglas-Vail, A. K. M. Nur-ur Rahman, Karyn E. Medcalf, Irene Y. Xie, Glen M. Chew, **Ravi Tandon**, et al "Soluble T Cell Immunoglobulin Mucin Domain 3 Is Shed from CD8+ T Cells by the Sheddase ADAM10, Is Increased in Plasma during Untreated HIV Infection, and

Correlates with HIV Disease Progression”, co-authored by Kiera L. Clayton, **Journal of Virology**, January 2015, doi:10.1128/JVI.00006-15.

23. **Ravi Tandon**, Chew GM, Byron MM, Borrow P, Niki T, Hirashima M, Barbour J, Norris PJ, Martin J, Deeks S, Ndhlovu L. *Galectin-9 is Rapidly Released during Acute HIV-1 Infection and Remains Sustained at High Levels Despite Viral Suppression Even In Elite Controllers*. **AIDS Res Hum Retroviruses**. 2014, Apr 30.
22. Champiat S, Garrison KE, Raposo RA, Burwitz BJ, Reed J, **Ravi Tandon**, York VA, Newman LP, Nimityongskul FA, Wilson NA, Almeida RR, Martin JN, Deeks SG, Rosenberg MG, Wiznia AA, Spotts GE, Pilcher CD, Hecht FM, Ostrowski MA, Sacha JB, Nixon DF. *T Cells Target APOBEC3 Proteins in Human Immunodeficiency Virus Type 1-Infected Humans and Simian Immunodeficiency Virus-Infected Indian Rhesus Macaques*. **Journal of Virology**. 2013 Jun; **87** (11): 6073-80. doi: 10.1128/JVI.00579-12. Epub 2013 Mar 27.
21. R. Brad Jones, Keith E. Garrison, Shariq Mujib, Vesna Mihajlovic, Nasra Aidarus, Diana V. Hunter, Eric Martin, Vivek M. John, Wei Zhan, Nabil F. Faruk, Gabor Gyenes, Neil C. Sheppard, Ingrid M. Priumboom-Brees, David Goodwin, Lianchun Chen, Melanie Rieger, Sophie Muscat-King, Peter T. Loudon, Cole Stanley, Sara J. Holditch, Jessica C. Wong, Kiera Clayton, Erick Duan, Haihan Song, Yang Xu, Devi SenGupta, **Ravi Tandon**, Jonah B. Sacha, Mark A. Brockman, Erika Benko, Colin Kovacs, Douglas F. Nixon, Mario A. Ostrowski. *HERV-K(HML-2)-Specific CD8+ T-cells Recognize and Eliminate Cells Infected with Globally Diverse HIV-1, HIV-2 and SIV Primary Isolates*. **Journal of Clinical Investigation**. 2012 Nov 12. doi:pii: 64560. 10.1172/JCI64560.
20. **Ravi Tandon**, Maria T. M. Giret, Sengupta D, York VA, Wiznia AA, Rosenberg MG, Kallas EG, Ndhlovu LC, Nixon DF. *Age-related Expansion of Tim-3 Expressing T cells in Vertically HIV-1 Infected Children*. **PLoS One**. 2012; **7** (9): e45733.
19. Ormsby CE, Sengupta D*, **Ravi Tandon***, Deeks SG, Martin JN, Jones RB, Ostrowski MA, Garrison KE, Vázquez-Pérez JA, Reyes-Terán G, Nixon DF. *Human Endogenous Retrovirus Expression Is Inversely Associated with Chronic Immune Activation in HIV-1 Infection*. **PLoS One**. 2012; **7** (8): e41021 (* equal contribution).
18. Jones RB, John VM, Hunter DV, Martin E, Mujib S, Mihajlovic V, Burgers PC, Luider TM, Gyenes G, Sheppard NC, Sengupta D, **Ravi Tandon**, Yue FY, Benko E, Kovacs C, Nixon DF, Ostrowski MA. *Human endogenous retrovirus*

K(HML-2) Gag- and Env-specific T-cell responses are infrequently detected in HIV-1-infected subjects using standard peptide matrix-based screening. Clin Vaccine Immunol. 2012 Feb;19 (2):288-92.

17. **Ravi Tandon**, SenGupta D, Ndhlovu LC, Vieira RG, Jones RB, York VA, Vieira VA, Sharp ER, Wiznia AA, Ostrowski MA, Rosenberg MG, Nixon DF. *Identification of Human Endogenous Retrovirus (HERV)-specific T cell responses in vertically HIV-1-infected subjects. J Virol. 2011 Aug 3. doi: 10.1128/JVI.05418-11.*
16. SenGupta D, **Ravi Tandon**, Vieira RG, Ndhlovu LC, Lown-Hecht R, Ormsby CE, Loh L, Jones RB, Garrison KE, Martin JN, York VA, Spott G, Reyes-Terán G, Ostrowski MA, Hecht FM, Deeks SG, Nixon DF. *Strong human endogenous retrovirus-specific T cell responses are associated with control of HIV-1 in chronic infection. J Virol. 2011 Jul;85(14):6977-85.*
15. Meli ML, Cattori V, Martínez F, López G, Vargas A, Simón MA, Zorrilla I, Muñoz A, Palomares F, López-Bao JV, Pastor J, **Ravi Tandon**, Willi B, Hofmann-Lehmann R, Lutz H. *Feline leukemia virus and other pathogens as important threats to the survival of the critically endangered Iberian lynx (*Lynx pardinus*). PLoS One. 2009;4(3):e 4744.*
14. Gomes-Keller MA, Gönczi E, Grenacher B, **Ravi Tandon**, Hofmann-Lehmann R, Lutz H. *Fecal shedding of infectious feline leukemia virus and its nucleic acids: a transmission potential. Vet Microbiol. 2009 Mar 2;134(3-4).*
13. Cattori V, **Ravi Tandon**, Riond B, Pepin AC, Lutz H, Hofmann-Lehmann R. *The kinetics of feline leukaemia virus shedding in experimentally infected cats are associated with infection outcome. Vet Microbiol. 2009 Jan 13;133(3):292-6.*
12. **Ravi Tandon**, Cattori V, Pepin AC, Riond B, Meli ML, McDonald M, Doherr MG, Lutz H, Hofmann-Lehmann R. *Association between endogenous feline leukemia virus loads and exogenous feline leukemia virus infection in domestic cats. Virus Res. 2008 Jul;135(1):136-43.*
11. Cattori V, Pepin AC, **Ravi Tandon**, Riond B, Meli ML, Willi B, Lutz H, Hofmann-Lehmann R. *Real-time PCR investigation of feline leukemia virus proviral and viral RNA loads in leukocyte subsets. Vet Immunol Immunopathol. 2008 May 15;123(1-2):124-8.*

10. Hofmann-Lehmann R, Cattori V, **Ravi Tandon**, Boretti FS, Meli ML, Riond B, Lutz H. *How molecular methods change our views of FeLV infection and vaccination.* **Vet Immunol Immunopathol.** **2008** May 15;123(1-2):119-23.
9. **Ravi Tandon**, Cattori V, Willi B, Lutz H, Hofmann-Lehmann R. *Quantification of endogenous and exogenous feline leukemia virus sequences by real-time PCR assays.* **Vet Immunol Immunopathol.** **2008** May 15;123(1-2):129-33.
8. Pepin AC, **Ravi Tandon**, Cattori V, Niederer E, Riond B, Willi B, Lutz H, Hofmann-Lehmann R. *Cellular segregation of feline leukemia provirus and viral RNA in leukocyte subsets of long-term experimentally infected cats.* **Virus Res.** **2007** Jul;127(1):9-16.
7. **Ravi Tandon**, Cattori V, Willi B, Meli ML, Gomes-Keller MA, Lutz H, Hofmann Lehmann R. *Copy number polymorphism of endogenous feline leukemia virus-like sequences.* **Mol and Cell Probes.** **2007** Aug;21(4):257-66.
6. Hofmann-Lehmann R, Cattori V, **Ravi Tandon**, Boretti FS, Meli ML, Riond B, Pepin AC, Willi B, Ossent P, Lutz H. *Vaccination against the feline leukaemia virus: outcome and response categories and long-term follow-up.* **Vaccine.** **2007** Jul 26;25(30):5531-9.
5. Gomes-Keller MA, Gönczi E, **Ravi Tandon**, Riondato F, Hofmann-Lehmann R, Meli ML, Lutz H. *Detection of feline leukemia virus RNA in saliva from naturally infected cats and correlation of PCR results with those of current diagnostic methods.* **J Clin Microbiol.** **2006** Mar;44(3):916-22.
4. Cattori V, **Ravi Tandon**, Pepin A, Lutz H, Hofmann-Lehmann R. *Rapid detection of feline leukemia virus provirus integration into feline genomic DNA.* **Mol and Cell Probes.** **2006** Jun-Aug;20(3-4):172-81.
3. Gomes-Keller MA, **Ravi Tandon**, Gönczi E, Meli ML, Hofmann-Lehmann R, Lutz H. *Shedding of feline leukemia virus RNA in saliva is a consistent feature in viremic cats.* **Vet Microbiol.** **2006** Jan 10;112(1):11-21.
2. Hofmann-Lehmann R, **Ravi Tandon**, Boretti FS, Meli ML, Willi B, Cattori V, Gomes-Keller MA, Ossent P, Golder MC, Flynn JN, Lutz H. *Reassessment of feline leukaemia virus (FeLV) vaccines with novel sensitive molecular assays.* **Vaccine.** **2006** Feb 20;24(8):1087-94.

1. **Ravi Tandon**, Cattori V, Gomes-Keller MA, Meli ML, Golder MC, Lutz H, Hofmann-Lehmann R. *Quantitation of feline leukaemia virus viral and proviral loads by TaqMan real-time polymerase chain reaction. J Virol Methods. 2005 Dec;130(1-2):124-32.*