

Dr.Samander Kaushik

M. Sc (Biotech), L.L. B (Hons) Ph. D (AIIMS)

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EDUCATION	DOCTOR OF PHILOSOPHY (Ph. D) MICROBIOLOGY (VIROLOGY)	2010
	Ph. D from Department of Microbiology, All India Institute of Medical Sciences (AIIMS) , Ansari Nagar, New Delhi, 110029, INDIA. Thesis Title " Antigenic and Molecular Characterization of Influenza Viruses from Acute Respiratory Infection – A Surveillance and Molecular Study "	
	MASTER OF SCIENCE (M. Sc) BIO-TECHNOLOGY	1999-2001
	Passed with first division from the Department of Biosciences, Maharshi Dayanand University, Rohtak, Haryana, India	
	BACHELOR OF LAW -LL. B (Hons)	2013-2015
	Passed with first division from the Department of Law, Maharshi Dayanand University, Rohtak, Haryana, India	
	BACHELOR OF SCIENCE (B. Sc)	1996-1999
CURRENT POSITION	Associate Professor of Biotechnology, Centre for Biotechnology, M.D University, Rohtak (Haryana) Teaching: Virology, Microbiology, Infectious Diseases & Animal Cell Culture	April 2022- Till Date
POSITION HOLD	Assistant Professor of Biotechnology, Centre for Biotechnology, M.D University, Rohtak (Haryana) Teaching: Virology, Microbiology, Infectious Diseases & Animal Cell Culture	April 2010- March 2022
AWARDS	Senior Research Officer (SRO)	May 2009–Mar 2010
	Senior Research Fellow (ICMR, New Delhi)	Aug 2008 –Apr 2008
	Institute Fellowship (AIIMS, New Delhi)	Feb 2008 - July 2008
	Senior Research Fellow (CSIR/UGC)	Oct 2004 - Sept 2007
	Awarded Senior Research Fellowship from Council of Scientific and Industrial Research, Delhi, India.	
	Junior Research Fellow (CSIR/UGC)	Sept 2002 –Sept 2004
Awarded Junior Research Fellowship from Council of Scientific and Industrial Research, Delhi, India.		

PROJECT	<ul style="list-style-type: none"> ➤ Rapid Detection and Typing of Influenza A and B Viruses by Reverse Transcriptase- Loop-Mediated Isothermal Amplification (RT-LAMP) Funded by University Grant Commission, New Delhi ➤ Development of multiplex RT-PCR for Dengue Viruses Funded by Department of Science and Technology, Haryana (India) ➤ Department of Biotechnology Government of India (DBT-MDU) interdisciplinary Life Science Programme for advanced research and education ➤ To evaluate the Protection of arsenic-induced oxidative stress, Mitochondrial oxidative damage, and apoptotic cell death by Hydroxytyrosol in Rat Brain <p>Two more projects are in the pipeline.</p>
TRAVEL GRANT	<p>Received "Travel Grant" from "The Indian Council of Medical Research, New Delhi" for attending the international conference " Options for Control of Influenza VI" held in Toronto, Ontario Canada in June 2007.</p>
PUBLICATION	<ol style="list-style-type: none"> 1. Kaur G, Kaushik S, Kaushik S, Singh S, Singh G, Xess I, Seth P. 14 Mucormycosis in Covid-19 Patients. An Overview. <i>Learning from the COVID-19 Pandemic: Implications for Science, Health, and Healthcare</i>. 2023 Aug 17:124. Book Chapter 2. Kumar S, Buttar HS, Kaushik S, Garg M. 18 Potential Role of Natural Essential Oils in the Management of Respiratory Distress in Patients Infected with SARS-CoV-2. <i>An Overview. Learning from the COVID-19 Pandemic: Implications for Science, Health, and Healthcare</i>. 2023 Aug 17:124. Book Chapter 3. Boora, Sanjit, Suman Yadav, Kumari Soniya, Sulochana Kaushik, Jaya Parkash Yadav, Mihir Seth, and Samander Kaushik. "Monkeypox virus is nature's wake-up call: a bird's-eye view." <i>VirusDisease</i> (2023): 1-13. 4. Sharma, Pradakshina, Homa Hassan, Mohd Rahil Hasan, Tarab Fatima, Hari Mohan, Manika Khanuja, Samander Kaushik, and Jagriti Narang. "PBIS-based system integrated with zinc–silver nanocomposite for the detection of Chikungunya virus." <i>Biosensors and Bioelectronics</i>: X 13 (2023): 100303.

5. Boora, Sanjit, Vikrant Sharma, Sulochana Kaushik, Ajoy Varma Bhupatiraju, Sandeep Singh, and **Samander Kaushik**. "Hepatitis B virus-induced hepatocellular carcinoma: a persistent global problem." *Brazilian Journal of Microbiology* (2023): 1-11.
6. Boora, Sanjit, Anish Khan, Kumari Soniya, Suman Yadav, Sulochana Kaushik, Ramesh Kumar, Sunil Chhikara, and **Samander Kaushik**. "Antiviral potential of Medicinal plants against Influenza Viruses: A Systematic Review." *Research Journal of Pharmacy and Technology* 16, no. 3 (2023): 1503-1513.
7. Boora, Sanjit, Anish Khan, Vikrant Sharma, Sulochana Kaushik, Promod K. Mehta, Sandeep Singh, and **Samander Kaushik**. "RT-LAMP is a potential future molecular diagnostic tool for influenza A virus." *Future Virology* 18, no. 3 (2023): 165-175.
8. Sheetal Yadav, Sulochana Kaushik, Sunil Kumar Chhikara, Sandeep Singh, Jaya Parkash Yadav, **Samander Kaushik**. *Terminalia arjuna* (Arjun Tree): A sacred plant with high Medicinal and Therapeutic potential. *Research Journal of Pharmacy and Technology* 15(12): December 2022
9. Patil, P., K. Alagarasu, D. Chowdhury, M. Kakade, S. Cherian, S. Kaushik, J. P. Yadav, **S. Kaushik**, and D. Parashar. "In-vitro antiviral activity of Carica papaya formulations against dengue virus type 2 and chikungunya virus." *Heliyon* 8, no. 12 (2022): e11879.
10. Sharma Y, Kaushik S, Boora S, Kumar P, Kumar A, Yadav JP, **Kaushik S**. Antiviral Potential of Medicinal Plants for the COVID-19. *Anti-Infective Agents*. 2022 Aug 1;20(4):54-63.
11. Hooda Reetu, Baghla Neeru, Malik Nisha and **Kaushik Samander**. To evaluate the role of placental human papillomavirus (HPV) infection as a risk factor for spontaneous preterm birth: a prospective case-control study. *Journal of Perinatal Medicine*. 2022 January 13. <https://doi.org/10.1515/jpm-2021-0317>
12. Soniya, K., Yadav, S., Boora, S., Kaushik, S., Yadav, J.P. and Kaushik, S., 2021. The Cat Que Virus: a resurfacing orthobunyavirus could lead to

epidemics. *VirusDisease*, 32(4), pp.635-641. <https://doi.org/10.1007/s13337-021-00745-9>

13. Kumar Sukender, Garg Chanchal, **Kaushik Samander**, Buttar Harpal Singh, Garg Munish. Demystifying therapeutic potential of medicinal plants against chikungunya virus. *Indian J Pharmacol* 2021; 53: 403-11. [DOI:10.4103/ijp.IJP_81_20](https://doi.org/10.4103/ijp.IJP_81_20)
14. Kaushik Sulochana, Lalit Dar, **Samander Kaushik**, and Jaya Parkash Yadav. "Anti-dengue activity of supercritical extract and isolated oleanolic acid of *Leucas cephalotes* using in vitro and *in silico* approach." *BMC Complementary Medicine and Therapies* 21, no. 1 (2021): 1-15. <https://doi.org/10.1186/s12906-021-03402-2>
15. Khan, Anish, Ekta Kamra, Raj Singh, Vikrant Sharma, Vishwajeet Singh, Preeti Mor, **Samander Kaushik**, Aparna Yadav, and Promod K. Mehta. "Diagnosis of osteoarticular tuberculosis: multi-targeted loop-mediated isothermal amplification assay versus multiplex PCR." *Future microbiology* 16, no. 13 (2021): 935-948. <https://doi.org/10.2217/fmb-2021-0030>
16. **Kaushik, Samander**, Yashika Sharma, Sulochana Kaushik, Jaya Parkash Yadav, and Minakshi Prasad. "Coronaviruses: Recent Trends and App. in Diagnosis and Management." *Adv. in Animal Disease Diagnosis*: 265-280. CRC Press
17. Prasad, Minakshi, Mayukh Ghosh, Harshad Sudhir Patki, Sandeep Kumar, Basanti Brar, Neelesh Sindhu, Parveen Goel, **Samander Kaushik**, et al. "Imaging Techniques in Veterinary Disease Diagnosis." *In Advances in Animal Disease Diagnosis*, pp. 103-145. CRC Press.
18. Sharma, Yashika, Anubhuti Kawatra, Vikrant Sharma, Divya Dhull, Sulochana Kaushik, Jaya Parkash Yadav, and **Samander Kaushik**. "In-vitro and in-silico evaluation of the anti-chikungunya potential of *Psidium guajava* leaf extract and their synthesized silver nanoparticles." *VirusDisease* (2021): 1-6. <https://doi.org/10.1007/s13337-021-00685-4>. **IF-0.4**
19. Kaushik, Sulochana, Lalit Dar, **Samander Kaushik**, and Jaya Parkash Yadav. "Identification and characterization of new potent inhibitors of dengue virus NS5

proteinase from *Andrographis paniculata* supercritical extracts on in animal cell culture and *in-silico* approaches." *Journal of Ethnopharmacology* 267 (2021): 113541. [DOI: 10.1016/j.jep.2020.113541](https://doi.org/10.1016/j.jep.2020.113541) **IF-4.3**

20. Amit Kumar, Ganesh Chauhan, Shriram Sharma, Surekha Dabla, P.N Sylaja, Neera Chaudhary, Salil Gupta, Chandra Sekhar Agrawal, Kuljeet Singh Anand, Achal Kumar Srivastava, Profile Deepti Vibha, Ram Sagar, Ritesh Raj, Ankita Maheswari, Subbiah Vivek Anandhan, Bhavna Kaul, Samudrala Raghavan, Sankar Prasad Gorthi, Dheeraj Mohania, **Samander Kaushik**, Rohtas Kanwar Yadav, Anjali Hazarika, Pankaj Sharma, Kameshwar Prasad "Association of SUMOlation Pathway Genes With Stroke in a Genome-wide Association Study in India." *Neurology* (2021). **IF-9.9**
21. Kaushik, Sulochana, **Samander Kaushik**, Ramesh Kumar, Lalit Dar, and Jaya Parkash Yadav. "*In-vitro* and *in-silico* activity of *Cyamopsis tetragonoloba* (Gaur) L. supercritical extract against the dengue-2 virus." *Virusdisease* 31, no. 4 (2020): 470-478. <https://doi.org/10.1007/s13337-020-00624-9> **IF-0.4**
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23. Panda, Ashutosh, Bijay Ranjan Mirdha, Neha Rastogi, and **Samander Kasuhik**. Understanding the true burden of "*Naegleria fowleri*" (Vahlkampfiidae) in patients from Northern states of India: Source tracking and significance. *European Journal of Protistology* 76 (2020): 125726. <https://doi.org/10.1016/j.ejop.2020.125726> **IF-3.02**
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25. Kaushik, Sulochana, Ginni Jangra, Vaibhav Kundu, Jaya Parkash Yadav, and

Samander Kaushik. "Antiviral activity of *Zingiber officinale* (Ginger) ingredients against the Chikungunya virus." *Virusdisease* 31, no. 3 (2020): 270-276. <https://doi.org/10.1007/s13337-020-00584-0> **IF-0.4**

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27. **Kaushik, Samander**, Sulochana Kaushik, Yashika Sharma, Ramesh Kumar, and Jaya Parkash Yadav. "The Indian perspective of COVID-19 outbreak." *Virusdisease* 31, no. 2 (2020): 146-153. <https://doi.org/10.1007/s13337-020-00587-x> **IF-0.4**
28. Dhull Divya, Sharma Vikrant, Sharma Yashika, and **Kaushik Samander**. Challenges associated with Herpes Simplex Virus isolation using Vero cell culture. *Res. J. Biotech* May (2020) Vol. 15 (5)
29. Soni Manisha, Prakash Chandra, **Kaushik Samander**, Chhikara Sunil Kumar, and Kumar Vijay. Hydroxytyrosol improving metabolic response by amelioration of oxidative stress following arsenic exposure in rat liver *Research Journal of Biotechnology* Vol. 15 (9) September (2020) 104-112
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31. Dhull, Divya, Vikrant Sharma, Yashika Sharma, and **Samander Kaushik**. Applicability of molecular assays for Detection and typing of herpes simplex viruses in encephalitis cases. *VirusDisease* 30, no. 4 (2019): 504-510. <https://doi.org/10.1007/s13337-019-00558-x> **IF-0.4**
32. Sharma, Vikrant, Manisha Sharma, Divya Dhull, Sulochana Kaushik, and **Samander Kaushik**. "Phylogenetic analysis of the hemagglutinin gene of

influenza A (H1N1) pdm09 and A (H3N2) virus isolates from Haryana, India." *VirusDisease* 30, no. 3 (2019): 336-343. <https://doi.org/10.1007/s13337-019-00532-7> **IF-0.4**

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<https://doi.org/10.1016/j.jviromet.2017.12.005> **IF-2.01**

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41. Kaushik Sulochana, Sharma Vikrant, Chaudhary Dhruva, Nanda Sanjeev, Yadav Jaya Parkash and **Kaushik Samander**. Standardization of one-step single tube RT-PCR for rapid Detection of all circulating strains of dengue Viruses *Int. J of Curr Res* Vol. 8, Issue, 10, pp.40334-40338, October 2016
42. Sharma, Vikrant, and **Kaushik Samander**. "Comparative analysis of molecular methods for detection of influenza viruses." *Microbiology Research Journal International* (2016): 1-10. <https://doi.org/10.9734/BMRJ/2016/28858>
43. Panda, Ashutosh, Shehla Khalil, Bijay Ranjan Mirdha, Yogita Singh, and **Kaushik Samander**. "Prevalence of *Naegleria Fowleri* in environmental samples from northern part of India." *PloS one* 10, no. 10 (2015).[doi: 10.1371/journal.pone.0137736](https://doi.org/10.1371/journal.pone.0137736) **IF-3.24**
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45. **Kaushik Samander**, Sharma Kiran, Sharma Vikrant, Dhull Divya, Chaudhary Dhruv and Nanda. Sanjiv Multiplex polymerase chain reaction for the Detection of herpes simplex Viruses (HSV1 AND HSV2) *International Journal of Current*

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47. Shobha Broor, Swati Gupta, Sarita Mohapatra, **Samander Kaushik**, Muneer A. Mir, Priti Jain, Lalit Dar, Renu B. Lal Emergence of 2009A/H1N1 cases in a tertiary care hospital in New Delhi, India, Accepted May 19, 2011. Published Online August 4, 2011. *Influenza and Other Respiratory Viruses* 2011; 1-6 [DOI: 10.13140/2.1.5190.1443](https://doi.org/10.13140/2.1.5190.1443) **IF-4.38**
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	<p>52. Kaushik S, Bharaj P, Dhakad S, Jain P, Kumar R, Broor S. Influenza virus strains circulating in and around New Delhi during Dec 2004-Sept 2008 <i>Indian Journal of Virology</i> 20 (1), 32-32 IF-0.40</p> <p>53. Bharaj P, Chahar H.S., Kaushik S, Jain P, Kabra SK, Sullender W, Broor S. Development of Multiplex RT-PCR for Detection of viruses in acute lower respiratory tract infections in children. <i>Indian Journal of Virology</i> 20 (1), 20-21</p> <p>54. Diddi K, Kaushik S, Dar L, Broor S. Concomitant outbreak of chikungunya and dengue fever, India. <i>Indian Journal of Virology</i> 20 (1), 36-36 IF-0.40</p> <p>55. Booklet "Standardize Avian Influenza Diagnosis in Referral Laboratories in India published by WHO, Dec 2007.</p>
BOOK	<ul style="list-style-type: none"> ➤ Standardize Avian Influenza Diagnosis in Referral Laboratories in India Published by WHO. ➤ Prasad M, Ghosh M, Patki HS, Kumar S, Brar B, Sindhu N, Goel P, Kaushik S, Mohan H, Syed S, Kumar R. Imaging Techniques in Veterinary Disease Diagnosis. In Advances in Animal Disease Diagnosis 2021 June 15 (pp. 103-145). CRC Press. ➤ Kaushik S, Sharma Y, Kaushik S, Yadav JP, Prasad M. Coronaviruses: Recent Trends and Approaches in Diagnosis and Management. Advances in Animal Disease Diagnosis. 2021 Jun 15:265-80.
TECHNICAL CAPABILITIES	<p>Sample Collection:</p> <ul style="list-style-type: none"> ❖ Hands-on experience in sample collection for respiratory viruses from hospitals as well as field studies. ❖ Filling the questionnaire and data management related to the recruited patients as well as the community population. <p>Virological:</p> <ul style="list-style-type: none"> ❖ Influenza Virus Isolation. ❖ Dengue and other flavivirus isolation ❖ Hemagglutinin Assay (H.A.) ❖ Hemagglutinin Inhibition Assay (H.I.) ❖ IFA & DFA

	<ul style="list-style-type: none"> ❖ TCID₅₀ Determination <p>Spectroscopic Techniques:</p> <ul style="list-style-type: none"> ❖ UV-vis, Fluorescence. <p>Molecular Biology:</p> <ul style="list-style-type: none"> ❖ DNA, RNA, isolation from Clinical sample. ❖ RNA isolation by G.T. Method, Compact MegnaPure Roche, Commercial kits ❖ Polymerase Chain Reaction (Simple, Multiplex) ❖ Cloning, Plasmid Isolation ❖ Restriction Digestion analysis. ❖ DNA Purification from agarose gel as well as from PCR Product. ❖ Real-Time R.T. –PCR. ❖ RT-LAMP ❖ Other medical diagnostic techniques <p>Animal Cell Culture:</p> <ul style="list-style-type: none"> ❖ Media Preparation. ❖ Maintenance of various cell lines (MDCK, HEP-II). ❖ Virus Isolation ❖ Virus characterization
<p>WORKSHOPS, SYMPOSIAS AND PRESENTATION</p>	<ul style="list-style-type: none"> ❖ One Week Short-Term Training course on "Advanced Analytical Instrumentation Techniques" was held at Human Resource Development Centre, Guru Jambheshwar University, Hisar from 10.12.2018 to 15.12.2018. ❖ Dr Samander Kaushik organizing as organizing secretary for a one-day National Conference & Workshop on "Emerging Infectious Diseases" on November 27 2017 sponsored by Dr Radha Krishan Foundation at Central for Biotechnology, Maharshi Dayanand University, Rohtak ❖ Participate in the Workshop on "Molecular Virological Techniques for Dengue and Chikungunya" being held at the National Institute of Virology (NIV), Pune during June 22 - July 10, 2015 ❖ Attend the 12th Molecular Virology Workshop held from March 20 to March 31, 2015, at the Indian Institute of Science, Bangalore India. ❖ International Research Colloquium on Adv. in Microbial Biotech: Prospects

(AMBF-2012) Department of Microbiology, MDU, Rohtak November 20, 2012

- ❖ Participated in National Symposium " Fight against Malaria: Prospects and Perspectives" organized by Centre for Medical Biotechnology, M.D. University (09.03.2013)
- ❖ Advance in Electron Microscopy in Virology Research & 3D Imaging Workshop 20-21 October 2012 NIV, Pune
- ❖ National Seminar on Recent advancement in Application of Genetics organized on March 20, 2012 by Dept. of Genetics, MDU Rohtak
- ❖ Participate in the five days DST-Inspire programme from April 28-May2, 2012 organized by the Centre for Biotechnology, MDU Rohtak
- ❖ Participate in the CME on "Arboviral Infections of Public Health Concern "organized 3-5 September 2012 by PGIMER Chandigarh.
- ❖ **Samander kaushik**, shivram Dhakad, Muneer Renu lal, AC Mishra, Manpreet Chadha Shobha Broor: Real time RT-PCR for the Detection and typing of Seasonal influenza viruses and its comparison with Virus Isolation **IAMM, MICROCON 2009** organized on Nov 5-8, 2009 by JSS MC, Mysore.
- ❖ Shivram Dhakad, **Samander kaushik** Muneer Shobha Broor: Comparision of Influenza virus detection and typing by virus isolation and RT-PCR **IAMM, MICROCON 2009** organized on Nov 5-8, 2009 by JSS MC, Mysore.
- ❖ **Samander Kaushik**, Preeti Bharaj, Shivram Dhakad, Priti Jain, Rajender Kumar Shobha Broor; Influenza Virus Strains Circulating in and around New Delhi During Dec 2004-Sept 2008. XVIII National Conference of Indian Virological Society, Chandigarh, India, Dec 2008.
- ❖ Bharaj, P.; Broor, S.; Dhakad, S.; **Kaushik, S.**; Jain, P.; Kabra, S.K. Multiplex RT-PCR for typing and subtyping of human influenza virus during a surveillance study. Third European Influenza Conference 14-17 September 2008 at the Tivoli Marina Vilamoura hotel, Vilamoura, Portugal.
- ❖ Preeti Bharaj, Harender Singh Chahar, **Samander Kaushik** Priti Jain, S.K Kabra, WayneSullender, Shobha Broor; Development of Multiplex RT-PCR For Detection of Viruses in Acute Lower Respiratory Tract Infections in Children at XVIII National Conf of Indian Viro Society, Chandigarh, India, Dec 2008.

- ❖ Diddi K, **Samander Kaushik**, Shobha Broor; Concomitant outbreak of Chikungunya and Dengue Fever, India. at XVIII National Conference of Indian Virological Society, Chandigarh, India, Dec 2008.
- ❖ **Samander Kaushik**, Preeti Bharaj, Shobha Broor; Surveillance of Human Influenza Virus Strains Circulating in New Delhi. **Options for Control of Influenza VI"** held at Toronto, Ontario Canada in June 2007.
- ❖ **Samander Kaushik**, Preeti Bharaj, Shobha Broor; Surveillance of Human Influenza Virus Strains Circulating in National Capital of India. At Asia Pacific Congress of Medical Virology, New Delhi, India.
- ❖ Broor S Bharaj, P. and **Kaushik S.** 2007. Comparison of Influenza Virus Typing by Hemagglutinin Inhibition Assay and RT-PCR Options for the Control of Influenza VI. Toronto, Canada
- ❖ **Samander Kaushik**, Preeti Bharaj, Shobha Broor; Influenza Virus Surveillance in New Delhi. At XXIX National Congress of Indian Association of Medical Microbiologists, Chennai, India.
- ❖ Attended the "**Training Program to Control AIDS**" at the Department of Microbiology, All India Institute of Medical Sciences, New Delhi, Feb 2009.
- ❖ Attended a workshop organized by NIV-ICMR-CDC on "**Real-time RT-PCR for detection of Human and Avian Influenza Viruses**" at the National Institute of Virology, Pune, in October 2007.
- ❖ Attended a workshop organized by NIV-ICMR-CDC on "**Influenza Viruses Strain Surveillance**" at the National Institute of Virology, Pune, January 2007
- ❖ Attended a National Symposium on "Nano-technology in Medicine" at All India Institute of Medical Sciences, New Delhi, and January 2007.
- ❖ Participated in the **WHO Meeting "Expert Group Meeting to Standardize Avian Influenza Diagnosis in Referral Laboratories in India"** at National Institute of Virology, Pune, April 2006.
- ❖ Participated in the **AIIMS Golden Jubilee celebrations conference on "HIV/AIDS and T.B."** held at AIIMS, New Delhi, India. In January 2006.
- ❖ Attended a workshop organized by NIV-ICMR-CDC on "**Influenza Viruses Strain Surveillance**" at the National Institute of Virology, Pune, July 2004

	<ul style="list-style-type: none"> ❖ INDO- US SYMPOSIUM- 2006 on Viral Diagnostics, Epidemiology and Pathogenesis, AIIMS, New Delhi, India, Nov. 2006. ❖ Attended Symposium on Stem Cell Applications organized at AIIMS, New Delhi, India (August 2008).
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