

Dr.Samander Kaushik

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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>
Patent	Patent Grant: Antidengue Nanoemulsion. Patent No 558965
TRAVEL GRANT	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.
PUBLICATION	<ol style="list-style-type: none"> 1. Kumar N, Khan A, Boora S, Chadha N, Khan N, Raina P, Gupta R, Singh R, Kaushik S. Diagnosis of tuberculous lymphadenitis by molecular and immunological tools. <i>Medicine in Microecology</i>. 2024 Nov 9:100116. 2. Lath A, Boora S, Sharma JK, Chand K, Kaushik S, Santal AR, Singh NP. Exploring the Therapeutic potential of Purified <i>Alternanthera pungens</i> Plant Extract. <i>Research Journal of Pharmacy and Technology</i>. 2024 Aug 1;17(8):3869-73. 3. Kajal V, Boora S, Wadhwa S, Soniya K, Yadav S, Kaushik S, Kaushik S. In silico approaches for study the therapeutic potential of Cannabis sativa (Bhang) against HIV. <i>Advances in Traditional Medicine</i>. 2024 Mar;24(1):285-303. 4. Boora S, Kaushik S, Yadav JP, Kaushik S, Kumar D. Marburg virus is nature's wake-up call: A bird's-eye view. <i>Medicine in Microecology</i>. 2024 Feb 28:100102. 5. Boora S, Kumari S, Garg D, Lath A, Kaushik S, Chand K, Kaushik S. Influenza Diagnostic Approaches: Different Roads to the Same Destination. <i>Indian Journal of Health Sciences and Care</i>. 2024 Jan 1;11(1):3-12.

6. Kumar, S., **Kaushik, S.** and Garg, M., Cell Culture and Molecular Docking Analysis to Determine the Antiviral Activity of Folklore Medicinal Plants Against Chikungunya Virus. *Current drug delivery*. 2024 September 4. doi: 10.2174/0115672018307676240827103052
7. Kaushik S, **Kaushik S**, Dar L, Yadav JP. Eugenol isolated from supercritical fluid extract of *Ocimum sanctum*: a potent inhibitor of DENV-2. *AMB Express*. 2023 Oct 2;13(1):105.
8. Wadhwa S, Boora S, Soniya K, Yadav S, Kaushik S, Kumar R, **Kaushik S**. *Kalanchoe pinnata* (Patharchatta): A Therapeutic Boon to Mankind. *Anti-Infective Agents*. 2023 Oct 1;21(5):1-9.
9. Kajal V, Boora S, Wadhwa S, Soniya K, Yadav S, Kaushik S, **Kaushik S**. In silico approaches for study the therapeutic potential of *Cannabis sativa* (Bhang) against HIV. *Advances in Traditional Medicine*. 2023 Aug 4:1-9.
10. Boora S, Khan A, **Kaushik S**. Diagnosis of influenza A virus: current molecular tools. *Future Virology*. 2023 Aug;18(11):687-9.
11. Kaushik, S., Kumar, R., & Kaushik, S. (2023). Ebola virus is nature's wake-up call. *Future Virology*, 2023 July. <https://doi.org/10.2217/fvl-2023-0118>
12. 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." *VirusDisease* (2023): 1-13.
13. 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." *Biosensors and Bioelectronics: X* 13 (2023): 100303.
14. 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.

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16. 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.
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20. 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.
21. 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>
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epidemics. *VirusDisease*, 32(4), pp.635-641. <https://doi.org/10.1007/s13337-021-00745-9>

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24. 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>
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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**

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34. Kumar, Ramesh, Suman Nagpal, **Samander Kaushik**, and Sanjay Mendiratta. "COVID-19 diagnostic approaches: different roads to the same destination." *Virusdisease* 31, no. 2 (2020): 97-105. <https://doi.org/10.1007/s13337-020-00599-7> **IF-0.4**
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medicinal plants and evaluation of their antiviral potential against chikungunya virus." *Applied microbiology and biotechnology* 103, no. 2 (2019): 881-891. <https://doi.org/10.1007/s00253-018-9488-1> **IF-4.81**

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49. 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

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	<p><i>and other respiratory viruses</i> 5, no. 6 (2011): e521-e527. DOI: 10.1111/j.1750-2659.2011.00261.x IF-4.38</p> <p>57. Das, Rashmi Ranjan, Abdus Sami, Rakesh Lodha, Richa Jain, S. Broor, S. Kaushik, B. B. Singh, M. Ahmed, Rachna Seth, and Sushil K. Kabra. "Clinical profile and outcome of swine flu in Indian children." <i>Indian pediatrics</i> 48, no. 5 (2011): 373. https://doi.org/10.1007/s13312-011-0085-y IF-1.41</p> <p>58. Broor, Shobha, Harendra Singh Chahar, and Samander Kaushik. "Diagnosis of influenza viruses with special reference to novel H1N1 2009 influenza virus." <i>Indian Journal of Microbiology</i> 49, no. 4 (2009): 301-307. https://doi.org/10.1007/s12088-009-0054-5 IF-2.46</p> <p>59. Bharaj, P., Sullender, W.M., Kabra, S.K., Mani, K., Cherian, J., Tyagi, V., Chahar, H.S., Kaushik, S., Dar, L. and Broor, S., 2009. Respiratory viral infections detected by multiplex PCR among pediatric patients with lower respiratory tract infections seen at an urban hospital in Delhi from 2005 to 2007. <i>Virology Journal</i>, 6(1), p.89. https://doi.org/10.1186/1743-422X-6-89 IF-4.09</p> <p>60. 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>61. 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>62. 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>
BOOK	<p>➤ Kaur G, Kaushik S, Kaushik S, Singh S, Singh G, Xess I, Seth P. 167 Mucormycosis in Covid-19 Patients. In <i>Learning from the COVID-19 Pandemic: Implications for Science, Health, and Healthcare</i> (pp. 167-180). Routledge.</p>

	<ul style="list-style-type: none"> ➤ Kumar S, Buttar HS, Kaushik S, Garg M. Potential Role of Natural Essential Oils in the Management of Respiratory Distress in Patients Infected with SARS-CoV-2: An Overview. Learning from the COVID-19 Pandemic. 2023 Aug 24:221-30. ➤ 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. ➤ Booklet "Standardize Avian Influenza Diagnosis in Referral Laboratories in India published by WHO, Dec 2007.
<p>TECHNICAL CAPABILITIES</p>	<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.) ❖ Antiviral Assay ❖ IFA & DFA ❖ 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

	<ul style="list-style-type: none"> ❖ Restriction Digestion analysis. ❖ DNA Purification from agarose gel as well as from PCR Products. ❖ 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). ❖ Antiviral effects ❖ 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 the 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 program 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, Shivam 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: Comparison 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
- ❖ 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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