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Glimpse of Education and Career History

Prof. Sunit K. Singh completed his PhD degree from the University of Wuerzburg, Wuerzburg, Germany in the area of Molecular Infection Biology and his postdoctoral trainings from Yale University, School of Medicine, New Haven and University of California Davis Medical Centre, Sacramento, California, USA. He is a Professor of Molecular Immunology & Virology at the Institute of Medical Sciences, Banaras Hindu University (BHU), Varanasi & currently on deputation as a Director of ACBR. Prof. Singh has been the Head of the Molecular Biology Unit and Professor Incharge of the Center for Experimental Medicine & Surgery, at Institute of Medical Sciences, Banaras Hindu University (BHU), Varanasi. Prof. Singh led a research group in the area of molecular virology as a faculty member at CSIR-Centre for Cellular and Molecular Biology (CCMB), Hyderabad, India. Prof. Singh has done seminal work in the area of molecular virology and published his research findings in international peer reviewed journals.

In addition to his original research publications in prestigious peer reviewed journals, Prof. Singh has published many books in the area of virology such as: “Neuroviral Infections- Vol-I and Vol-II”, “Viral Hemorrhagic Fevers”, “Human Respiratory Viral Infections” by CRC Press/ Taylor & Francis group, USA, Neglected Tropical Diseases-South Asia”, Defense Against Biological Attacks- Vol-I and Vol-II by Springer, USA; “Viral Infections and Global Change”, “Human Emerging and Re-emerging Infectious Diseases- Vol-I and Vol-II” by Wiley Blackwell, USA and “Defense Against Biological Attacks- Vol-I and Vol-II by Springer-Nature”. Prof. Singh has been associated with many prestigious international journals as Section Editor, Deputy Editor, Corresponding Editor and Editorial Board Member. Prof. Singh contributed immensely in understanding the molecular pathogenesis of different vector borne viruses. Prof. Singh’s work is directly related to the public health and Biosafety and Biosecurity issues of the national importance.

Honors and Awards:

- 1. 2023-Elected Fellow of National Academy of Medical Sciences, India (FAMS)**
- 2. 2023-Dr. P K Seth Memorial Oration Award of Indian Academy of Neurosciences**
- 3. 2023-Professor CNR Rao Education Foundation Award**

4. 2023- Elected **Fellow of Royal Society of Biology** (FRSB)
5. 2022- Elected **Fellow of National Academy of Sciences India** (FNASc)
6. 2022-**Prof. Sohail Ahmad Award of Indian Academy of Biomedical Sciences**
7. 2021-Elected **Fellow of Indian Academy of Neurosciences** (FIAN)
8. 2020- **ICMR-Prof. B. K Aikat Oration National Award for Tropical Diseases**
9. 2019-**NAVBD-Molecular Biology Award** of National Academy of Vector Borne Diseases
10. 2017-**ICMR Chaturvedi Ghanshyam Das Jaigopal Memorial National Award for Immunology**
11. 2017-**Dr. B.C. Roy Oration Award** of Medical Council of India
12. 2016-**Outstanding Alumnus Award** by GB Pant Univ. of Agril. &Tech, Pantnagar
13. 2016-**Nature Travel Grant Award** to deliver invited lecture Gordon Research Conference
14. 2015-**ICMR-Dr. J. B Srivastav Memorial Oration National Award for Virology**
15. 2014- **Institute of Medical Sciences, BHU, Research Publication Award**
16. 2011-**FEBS Journal Top Cited Paper Award.**

Few Selected Research Publications

1. Ahmad, F, Keshri, V, **Singh, SK (2024)**, ORF3a of SARS-CoV-2 modulates PI3K/AKT signaling in human lung epithelial cells via hsa-miR-155-5p, ***International Journal of Biological Macromolecules, 2024, <https://doi.org/10.1016/j.ijbiomac.2024.131734>***
2. Pandey N, **Singh SK (2023)**, MicroRNA-155 triggers a cellular antiviral immune response against Chandipura virus in human microglial cells, ***Microbes and Infection .2023 Jun 14;105173. doi: 10.1016/j.micinf.2023.105173.***
3. Shukla, A., Bhardwaj, U., Apoorva, Seth, P, **Singh, SK (2023)**, Hypoxia-Induced miR-101 Impairs Endothelial Barrier Integrity Through Altering VE-Cadherin and Claudin-5. ***Molecular Neurobiology (2023). <https://doi.org/10.1007/s12035-023-03662-8>***
4. Bharadwaj U, **Singh SK (2023)**, Zika Virus NS1 suppresses VE-Cadherin via hsa-miR-29b-3p/DNMT3b/MMP-9 pathway in Human Brain Microvascular Endothelial Cells; ***Cellular Signalling, DOI: 10.1016/j.cellsig.2023.110659***
5. Shukla A, Rastogi M, **Singh SK (2021)**, Zika virus NS1 suppresses the innate immune responses via miR-146a in human microglial cells, ***International Journal of Biological Macromolecules Dec 15;193(Pt B):2290-2296. doi: 10.1016/j.ijbiomac.2021.11.061***
6. Bharadwaj U, **Singh SK (2021)**, Zika Virus NS1 Suppresses VE-Cadherin and Claudin-5 via

hsa-miR-101-3p in Human Brain Microvascular Endothelial Cells, *Molecular Neurobiology*, [https://doi.org/ 10.1007/s12035-021-02548-x](https://doi.org/10.1007/s12035-021-02548-x)

7. Pandey N, Rastogi M, Singh SK (2021), Chandipura virus dysregulates the expression of hsa-miR-21-5p to activate NF- κ B in human microglial cells. *J Biomed Sci.* doi: [10.1186/s12929-021-00748-0](https://doi.org/10.1186/s12929-021-00748-0).
8. Rastogi M, Pandey N, Shukla A, Singh SK (2020), SARS Coronavirus 2: from Genome to Infectome *Respiratory Research*, **21:318**. doi: [10.1186/s12931-020-01581-z](https://doi.org/10.1186/s12931-020-01581-z)
9. Rastogi M, Singh SK (2020), Japanese Encephalitis Virus exploits microRNA-155 to suppress the non-canonical NF- κ B pathway in human microglial cells, *BBA - Gene Regulatory Mechanisms*, **1863**, (11), **194639**, <https://doi.org/10.1016/j.bbagrm.2020.194639>
10. Rastogi M, Singh SK (2020), Zika Virus NS1 affects the Junctional Integrity of Human Brain Microvascular Endothelial Cells, *Biochimie*, **176 (2020)**, **52-61**, [10.1016/j.biochi.2020.06.011](https://doi.org/10.1016/j.biochi.2020.06.011)
11. Agrawal M, Pandey N, Rastogi M, Dogra S, Singh SK (2019), Chikungunya Virus modulates the miRNA expression patterns in Human Synovial Fibroblasts *Journal of Medical Virology*, **92(2):139-148**. doi: [10.1002/jmv.25588](https://doi.org/10.1002/jmv.25588)
12. Rastogi M, Singh SK (2019), Modulation of type-I Interferon response by hsa-miR-374b-5p during Japanese Encephalitis Virus infection in human microglial cells *Front. Cell. Infect. Microbiol.*, **2019, Aug 9;9:291, 1-11**. doi: [10.3389/fcimb.2019.00291](https://doi.org/10.3389/fcimb.2019.00291)
13. Agrawal M, Rastogi M, Dogra S, Pandey N, Basu A, Singh SK (2019), Chandipura Virus changes cellular miRNome in human microglial cells *Journal of Medical Virology*, **2019 Apr 24**. doi: [10.1002/jmv.25491](https://doi.org/10.1002/jmv.25491).
14. Rastogi M, Srivastava N, Singh SK (2018), Exploitation of microRNAs by Japanese Encephalitis virus in human microglial cells, *Journal of Medical Virology*; **Apr;90(4):648-654**. doi: [10.1002/jmv.24995](https://doi.org/10.1002/jmv.24995).
15. Sharma N, Kumawat KL, Rastogi M, Basu A, Singh SK (2016), Japanese Encephalitis Virus exploits the microRNA-432 to regulate the expression of Suppressor of Cytokine Signaling (SOCS) 5, *Scientific Reports* **2016 Jun 10;6:27685**. doi: [10.1038/srep27685](https://doi.org/10.1038/srep27685)
16. Sharma N, Verma R, Kumawat KL, Basu A, Singh SK (2015), miR-146a suppresses cellular immune response during Japanese encephalitis virus JaOArS982 strain infection in human microglial cells, *Journal of Neuroinflammation*, **Feb 18;12:30**. doi: [10.1186/s12974-015-0249-0](https://doi.org/10.1186/s12974-015-0249-0)

17. Jadhav V, Krause K-H, **Singh SK (2014)**, HIV-1 Tat C modulates NOX2 and NOX4 expressions through miR-17 in Human Microglial Cells, *Journal of Neurochemistry*. **Dec;131(6):803-15. doi: 10.1111/jnc.12933.**
18. Selvamani SP, Mishra R, **Singh SK (2014)**, Chikungunya virus exploits miR-146a to regulate NF- κ B pathway in human synovial fibroblasts, *PLoS One*. **Aug 1; 9(8): e103624. doi: 10.1371/journal.pone.0103624.**
19. Mishra R, **Singh SK (2014)**, HIV-1 Tat C phosphorylates VE-cadherin complex and increases human brain microvascular endothelial cell permeability, *BMC Neuroscience* **2014 Jun 26; 15(1):80. doi: 10.1186/1471-2202-15-80).**
20. Manocha GD, Mishra R, Sharma N, Kumawat KL, Basu A, **Singh SK (2014)**, Regulatory role of TRIM21 in type-I interferon pathway in Japanese encephalitis virus infected human microglial cells *Journal of Neuroinflammation*, **Feb 1;11:24. doi: 10.1186/1742-2094-11-24**
21. Mishra R, **Singh SK (2013)**, HIV-1 Tat C modulates expression of miRNA-101 to suppress VE-Cadherin in Human Brain Microvascular Endothelial Cells, *The Journal of Neuroscience* **33(14):5992-6000; doi:10.1523/JNEUROSCI.4796-12.2013.**
22. Mishra R, Chhatbar C, **Singh SK (2012)**, HIV-1 Tat C-mediated regulation of tumor necrosis factor receptor-associated factor-3 by microRNA 32 in human microglia, *Journal of Neuroinflammation*, **Jun 18;9:131. doi: 10.1186/1742-2094-9-131**