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Educational Qualification **Master's in science** (1998)- Biochemistry, Lucknow University, Lucknow, India & **Ph.D** in Medical Science, specialization in Immunology (2008)- Graduate School of Medicine, Osaka University, Osaka, Japan. **Post-doctoral (JSPS) training** (2010)- Osaka University, Osaka, Japan

Other Major Responsibilities **Global Initiative of Academic Networks** (GIAN), MHRD, Government of India Program:

Conducted **GIAN course** on "**Molecular Dissection of Host-Pathogen Interaction: The Basic and Translational Immunology**" along with Prof. Akinori Takaoka, IGM, Hokkaido University, Japan from 17th February 2018 to 2nd March 2018.

Conducted NPTEL Workshop on **"Basic Immunology Experiment (Hands on workshop)"** from 4th July 2022 to 9th July 2022.

Conducting NPTEL 12 weeks course on **"Host-Pathogen Interaction-Immunology"** from January 2023.

Teaching: BIO101 (Chemical Biology); BIO 102 (Diversity of Living World); BIO 103 (General Biology Laboratory I); BIO616 (Advanced Immunology); BIO 401 (Immunology); BIO 405 (Biology Laboratory III-Immunology Practical); BIO 420 (Immuno-technology); BIO611S (Cell Science and Technology); BIO613S (Immunotechnology). BIO 312 (Biology of Infectious Diseases)

Courses developed: BIO102 (Diversity of Living World); BIO 103 (General Biology Laboratory I); BIO616 (Advanced Immunology); BIO 401 (Immunology); BIO 405 (Biology Laboratory III-Immunology Practical); BIO 420 (Immuno-technology);

BIO611S (Cell Science and Technology); BIO613S (Immunotechnology).

Selected Publications

H-index (as per google) is 35 and total citation of my work is 13,920 on June 5th, 2023.

1. Chaudhary R, Meher A, Krishnamoorthy P, **Kumar H*.** *Interplay of host and viral factors in inflammatory pathway mediated cytokine storm during RNA virus infection* ***Current Research in Immunology*** **(Accepted).**

2. Krishnamoorthy P, S Raj A, **Kumar H*.** *Identification of gene classifier and modules associated with SARS-CoV-2 ARI in nasal swab* ***Genes & Diseases.*** April 2023**.**

3. Krishnamoorthy P, S Raj A, **Kumar H*.** *Machine learning driven blood transcriptome-based discovery of SARS-CoV-2 specific severity biomarkers,* ***Journal of Medical Virology.***

4. Krishnamoorthy P, S Raj A, **Kumar H*.** *Identification of COVID-19 gene classifier and modules associated with SARS-CoV-2 variants,* ***Genes & Diseases.***

5. Kumar A, Mishra S, Kumar A, Raut AA, Sato S, Takaoka A **Kumar H*.** *Essential role of Rnd1 in innate immunity during viral and bacterial infections* ***Cell Death & Disease June 2022***

6. Krishnamoorthy P, S Raj A, Kumar P, Das N, **Kumar H*.** *Host and viral non-coding RNAs in dengue pathogenesis* ***Reviews in Medical Virology April 2022***

7. Mishra S, Raj AS, Kumar A, Rajeevan A, Kumari P, **Kumar H***. *Innate Immune sensing of Influenza A viral RNA through IFI16 promotes pyroptotic cell death.* ***iScience, 25,1, 2022***.

8. Das A, Chauhan K.S., **Kumar H**, Tailor P. *Mutation in Irf8 Gene (Irf8R294C) Impairs Type I IFN-Mediated Antiviral Immune Response by Murine pDCs* ***Frontiers in Immunology Nov 2021***

9. Mishra R, Krishnamoorthy P, **Kumar H*.** *MicroRNA-30e-5p Regulates SOCS1 and SOCS3 During Bacterial Infection* ***Frontiers in Cellular and Infection Microbiology,*** **2021**

10. Mahla RS, Kumar A, Tutill H, Krishnaji ST, Sathyamoorthy B, Noursadeghi M, Breuer J, Pandey AK, and **Kumar H*,** *NIX-mediated mitophagy regulate metabolic reprogramming in phagocytic cells during Mycobacterial infection.* ***Tuberculosis,*** **2021,** 126, 102046.

11. Krishnamoorthy P, Raj AS, Roy S, Kumar NS and **Kumar H*,** *Comparative transcriptome analysis of SARS-CoV, MERS-CoV, and SARS2 CoV-2 to identify potential pathways for drugs repurposing,* ***Computers in Biology and Medicine,*** **2021,** 128, 104123**.**

12. Mishra R, Bhattacharya S, Rawat BS, Kumar A, Kumar A, Niraj K, Chande A, Gandhi P, Khetan D, Aggarwal A, Tailor P, Takaoka A, **Kumar H***, *The microRNA-30e-5p has an integrated role in the regulation of the innate immune response during virus infection and systemic lupus erythematosus*, ***iScience,*** https://doi.org/10.1016/j.isci.2020.101322

13. Mishra R, Pandikannan K, Gangamma S, Raut AA, **Kumar H***, *Particulate matter (PM10) enhances RNA virus infection through modulation of innate immune responses,* ***Environmental Pollution,*** doi:10.1016/j.envpol.2020.115148

14. Mishra R. Kumar A, Ingle H, **Kumar H***, *The Interplay between Viral-derived miRNAs and Host Immunity during infection*, ***Frontiers in Immunology,*** doi:10.3389/fimmu.2019.03079

15. Saha I, Jaiswal H, Mishra R, Nel H, Schreuder J, Kaushik M, Chauhan KS, Rawat BB, Thomas R, Naik S, **Kumar H**, Tailor P. RelB Suppresses Type I Interferon Signaling in Dendritic Cells. ***Cellular Immunology***. 2020 Jan.

16. Kumar A, **Kumar H***. *Long noncoding RNA: TRIMming the viral load*, ***Cellular & Molecular Immunology*** **2019**. doi: 10.1038/ 10.1038/s41423-019-0290-5.

17. Kumar A, Kumar A, Ingle H, Kumar S, Mishra R, Verma MK, Biswas D, Kumar NS, Mishra A, Rout AA, Takaoka A**, Kumar H***. *MicroRNA miR-324-5p suppresses H5N1 virus replication by targeting the viral PB1 and host CUEDC2*. ***Journal of Virology*** **2018**, 92:e01057-18.

18. Sinha D, Kumar A, **Kumar H**, Bandyopadhyay S, Sengupta D, *dropClust: Efficient clustering of ultra-large scRNA-seq data*. ***Nucleic Acid Research*** **2018,** doi:10.1093/nar/gkn000.

19. Kumari P, Saha I, Narayanan A, Narayanan S, Takaoka A, Kumar NS, Tailor P, **Kumar H***, *Essential role of HCMV deubiquitinase in oncogenesis by targating anti-viral innate immune signaling pathways*. ***Cell Death & Disease*** **2017**;8(10):e3078. doi: 10.1038/cddis.2017.461.

20. Mishra S and **Kumar H***, *Balancing anti-viral innate immunity and immune homeostasis*. ***Cellular & Molecular Immunology*** **2017**. doi: 10.1038/cmi.2017.98.

21. Kumari P and **Kumar H***, *Viral deubiquitinases: Role in evasion of anti-viral innate immunity*. ***Critical Reviews in Microbiology*** **2017**:1-14. doi: 10.1080/1040841X.2017.1368999.

22. Bodireddy MR, Mahla RS, Mohinuddin PMK, Reddy GT, Prasad DVR, **Kumar H***, Reddy NG. *Discovery of a new class of 16-membered (2Z, 11Z)-3, 11-di (aryl/naphthyl)-1, 13-dioxa-5, 9-dithia-2, 12-diazacyclohexadeca-2, 11-dienes as anti-tumor agents*. ***RSC Advances*** **2016** Aug. doi: 10.1039/C6RA15140J.

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24. Fawaz M, Vijayakumar P, Mishra A, Gandhale PN, Dutta R, Kamble NM, Sudhakar SB, Roychoudhary P, **Kumar H**, Kulkarni DD, Raut AA. *Duck gut viral metagenome analysis captures snapshot of viral diversity*. ***Gut Pathogens*** **2016** May. DOI: 10.1186/s13099-016-0113-5.

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doi: 10.1186/s40064-015-1238-6. eCollection 2015.

27. Kumar S, Ingle H, Mishra S, Kumar A, Kawai T, Akira S, Takaoka A, Raut AA, **Kumar, H***. *IPS-1 differentially induces TRAIL, BCL2, BIRC3 and PRKCE in type I interferons-dependent and independent anticancer activity.* ***Cell Death & Disease***, **2015** May 7;6:e1758. doi: 10.1038/cddis.2015.122.

28. Kumari P, Narayanan S, **Kumar, H*.** *Herpes viruses: Interfering innate immunity by targeting viral sensing and interferon pathways*. ***Reviews in Medical Virology*** **2015** Apr 1. doi: 10.1002/rmv.1836.

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30. Nagi RS, Bhat AS, **Kumar H***. *Cancer: A Tale of Aberrant PRR Response.* ***Frontiers in Immunology***, **2014** Apr 9;5:161. doi: 10.3389/fimmu.2014.00161.

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32. Kumar S, Ingle H, Prasad DVR, **Kumar H***, *Recognition of Bacterial Infection by Innate Immune Sensors,* ***Critical Reviews in Microbiology,*** 2013 Jul 12; 39(03):229-246. **The article is a top most read article.**

33. **Kumar H***, Kawai T, Akira S, *Pathogen Recognition by Innate Immunity,* ***International Reviews in Immunology,*** **2011** Feb; 30(1): 16-34. **The article most cited and top most read article of the Journal.**

34. Kumari P and **Kumar H*,** *Dimensions of inflammation in host defense and diseases,* ***International Reviews of Immunology*** 2022 (In press).

35. **Kumar H***, *Immune-mediated organ pathologies of vital organs*, ***International Reviews of Immunology*** 2021 Sep; 40:6, 1-2

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37. **Kumar H***, *Components of Specific Immunity in Host Defense*. ***International Reviews of Immunology,*** 2021, 40: 4, (in press)

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39. Kumar A, Das N and **Kumar H***, *COVert IDenties of Current Worldwide Pandemic,* ***International Reviews of Immunology,*** 2021, 40: 1-2, 1-4

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42. **Kumar H***, *Tools for fundamental understanding of Systemic Lupus Erythematosus,* ***International Reviews of Immunology,*** 2020, 39: 4, 151-152

43. **Kumar H***, *Metabolic pathways and metabolites shaping innate Immunity*. ***International Reviews of Immunology,*** 2020, 39: 3, 81–82.

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45. **Kumar H***, Therapeutic approaches for genetic and infectious diseases." *International Reviews of Immunology*, 2020, 39:1, 1–2.

46. **Kumar H*** *Approaches for deciphering the molecular basis of disease and its translational benefits* ***International Reviews of Immunology*** 2019; 38:6, (In press)

47. Awasthi A and **Kumar H*** *T cell subtypes and its therapeutic potential in autoimmune diseases and cancer* ***International Reviews of Immunology*** 2019; 38:5, 181-182

48. **Kumar H*** *Immunity and its role in white plague and obesity* ***International Reviews of Immunology*** 2019; 38:4, 129-130

49. Oltean M and **Kumar H*** *Donor-specific antibodies and organ transplantation: a dangerous mix* ***International Reviews of Immunology*** 2019; 38:3, 93-94

50. **Kumar H*** *Host defense: basic, disease and translational biology* ***International Reviews of Immunology*** 2019; 38:2, 55-56

51. **Kumar H*** *How does blood coagulation/neutrophils shape innate immunity and uncontrolled inflammation to autoimmune disease?* ***International Reviews of Immunology*** 2019; 38:1, 1-2

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53. **Kumar H***, *Evolution of innate immune sensors and responses during immune disorders and immunization against microbial infection* ***International Reviews of Immunology*** 2018, *37* :5, 215-216

54. **Kumar H***, Bot A *Antibodies and T Cell subtypes in diseases and therapy* ***International Reviews of Immunology*** 2018, *37* :4, 175-176.
55. **Kumar H***, Bot A* *Role of immune cells and molecules in rheumatoid arthritis pathogenesis and cancer immunotherapy* ***International Reviews of Immunology*** 2018, *37* :3, 127-128.

56. **Kumar H***, Bot A* *Effect of gut microbiome on mucosal immunity and enteric diseases* ***International Reviews of Immunology*** 2018, *37* :2, 77-78.

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67. Bot A*, **Kumar H***. *Translational Opportunities for Antibodies: Therapeutics, Biomarkers, and Novel Targets* ***International Reviews in Immunology*** 2016 Jul 3;35(4):291-293

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and humoral adaptive immune responses to fungal b-glucan, ***Journal of Immunology*** **2009** Dec 15;183(12):8061-8067.

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88. **Kumar H**, Kawai T, Kato H, Sato S, Takahashi K, Coban C, Yamamoto M, Uematsu S, Ishii KJ, Takeuchi O, Akira S. *Essential role of IPS-1 in innate immune responses against RNA viruses.* ***Journal of Experimental Medicine*** **2006** Jul 10; 203(7):1795-1803.

89. Takahashi K, Kawai T, **Kumar H,** Sato S, Yonehara S, Akira S. *Cutting Edge: Roles of Caspase-8 and Caspase-10 in Innate Immune Responses to Double-stranded RNA.* ***Journal of Immunology.*** **2006** Apr 15; 176(8):4520-4524.

90. Malhotra D, Darvishi K, Lohra M, **Kumar H**, Grover C, Sood S, Reddy BSN, Bamezai R. *Association study of major risk single nucleotide polymorphisms in the common regulatory region of PARK2 and PACRG genes with leprosy in an Indian population.* ***European Journal of Human Genetics*** **2006** Apr; 14(4):438-442.

91. Kawai T, Takahashi K, Sato S, Coban C, **Kumar** H, Kato H, Ishii KJ, Takeuchi O, Akira S. *IPS-1, an adaptor triggering RIG-I- and Mda5-mediated type I interferon induction.* ***Nature Immunology***. **2005** Oct;6(10):981-988.

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93. **Kumar H**, Malhotra D, Goswami S, Bamezai R. *How far have we reached in tuberculosis vaccine development?* ***Critical Reviews in Microbiology***. **2003**;29 (4):297-312.

Awards and Recognitions

1. **Selected as a member of National Academy of Science, India.**
2. Awarded training fellowship for generation of transgenic and knockout rodent model at the **Transgenic and Genetically Engineered Model Facility at University of Alabama, Birmingham (UAB- TGEMS), USA** (January 2019 to July 2019).
3. Awarded **Ramanujan fellowship** from Department of Science and Technology (Government of India) (1st August 2010 to 31st July 2015).
4. Awarded **Kishimoto Foundation fellowship** from WPI Immunology Frontier Research Center, Osaka University (1st April 2010 to 30th June 2010).
5. Awarded **Japan Society for the Promotion of Science (JSPS) post-doctoral fellowship** by the government of Japan (1st April 2008 to 31st March 2010).
6. Awarded **Japanese government scholarship (MEXT)** for a doctoral thesis from Graduate School of Medicine, Osaka University, Japan (1st April 2003 to 31st March 2008).
7. Awarded **University Grant Commission (UGC) Scholarship** by Government of India.
8. Qualified **Graduate Aptitude Test in Engineering (GATE)-98** in Life Sciences.