

AHMAD JAWAD SABIR

Postdoctoral Research Fellow

Vaccine and Infectious Diseases Organization, International Vaccine Centre (VIDO-InterVac)

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SUMMARY

Highly self-motivated postdoctoral researcher with over 6 years of experience in virology, molecular biology, and viral diagnostics. Exceptional expertise in molecular biology techniques, cell culture, virology, recombinant protein production, immunoassays, CRISPR/Cas9 mediated genome editing and genomics. Highly organized, collaborative researcher with project management skills to keep projects on time and budget to completion. Skilled in translating complex scientific concepts into easily understood terms. Work well independently, as well as part of a team. Excellent communication skills. Deadline oriented

EDUCATION

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| 2016 – 2020 | Ph.D., Veterinary Molecular Virology , The University of Melbourne, Melbourne, Australia
Thesis: Protective immune responses to chicken infectious laryngotracheitis virus (ILTV) glycoproteins. |
| 2010 – 2013 | M.Phil., Veterinary Pathology , University of Veterinary and Animal Sciences, Lahore, Pakistan |
| 2005 – 2010 | Doctor of Veterinary Medicine , University of Veterinary and Animal Sciences, Lahore, Pakistan |

RESEARCH EXPERIENCE

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| 2021 – date | Postdoctoral Research Fellow , Vladi Lab, Vaccine and Infectious Diseases Organization, University of Saskatchewan, Saskatoon, Canada.
Current Projects <ol style="list-style-type: none">1. The Asian Zika virus acquires African mutations during persistence in the fetal brain (Manuscript under preparation).
Summary: Used whole virus NGS to characterize the evolution of Wild ZIKV strain in fetal brain and placental tissues in porcine models. Secondly, we rescued synthetic wild-type (WT) and Africanized mutant (AFM) viruses by introducing two African mutations into the WT virus to investigate their impact on ZIKV <i>in utero</i> evolution, virulence, and infection dynamics.2. Discovery of ZIKV-RNA host protein interactions by mass spectrometry.
Summary: Using Comprehensive Identification of RNA binding Proteins by Mass Spectrometry (ChIRP-MS) to discover ZIKV RNA-host protein interactions. |
| 2020 – 2021 | Research Associate (Part-time), Jabbar Lab, Department of Veterinary Biosciences, University of Melbourne – for a project to investigate molecular epidemiology of Kangaroo and Wombat nematodes. Involved in DNA extraction, PCR amplification, PCR product clean up, Sanger sequencing and sequencing data analysis of over 100 samples for the project. |
| 2016 – 2020 | Graduate Research Assistant , Asia Pacific Centre for Animal Health, the University of Melbourne – PhD project to study immune responses to chicken herpes virus glycoproteins to develop a diagnostic tool for the detection of protective antibody and/or cellular immune responses. Also worked on the whole genome sequencing of field isolates of chicken herpesvirus from Australia. |
| 2015 – 2016 | Research Assistant , Department of Pathology, Ankara University, Turkey – Worked on necropsy and biopsy of various animal carcasses and specimens submitted to the department. Also involved in the practical demonstration of histopathology courses to DVM students. |

2011 – 2015 **University Tutor**, University of Veterinary and Animal Sciences, Pakistan –
Worked on various research projects on epidemiology and molecular diagnosis of
parasites in large and small ruminants.

PUBLICATIONS

- 2021 Asif K, O'Rourke D, **Sabir AJ**, Shil P, Noormohammadi AH, Marends MS. Characterisation of the whole genome sequence of an avian hepatitis E virus directly from specimens reveals possible recombination events between European and USA strains, *Infection, Genetics and Evolution*, 96, 105095.
- 2021 Sukee T, Beveridge I, **Sabir AJ**, Jabbar A. Phylogenetic relationships within the nematode subfamily Phasclostrongylinae (Nematoda: Strongyloidea) from Australian macropodid and vombatid marsupials, *Microorganisms*, 9(1), 9.
- 2020 **Sabir AJ**, 2020. Immune responses to infectious laryngotracheitis virus (ILTV) glycoproteins. PhD thesis.
- 2020 **Sabir AJ**, Olaogun OM, O'Rourke D, Coppo MJC, Devlin JM, Konsak-Ilievski B, Noormohammadi AH. Full genomic characterization of an emerging infectious laryngotracheitis virus linked to a vaccine strain revealed its identity, *Infection, Genetics and Evolution*, 78, 104067.
- 2019 **Sabir AJ**, Adams TE, O'Rourke D, Devlin JM, Noormohammadi AH. Investigation onto the correlation between systemic antibodies to surface glycoproteins of infectious laryngotracheitis virus (ILTV) and protective immunity, *Veterinary Microbiology*, 228, 252-258.
- 2017 Zhang H, Chang Z, Mehmood K, Wang Y, Rehman MU, Nabi F, **Sabir AJ**, Liu X, Wu X, Tian X, Zhou D. First report of Ehrlichia infection in goats, China. *Microbial Pathogenesis*, 110, 275-278.
- 2017 Mehmood K, Zhang H, **Sabir AJ**, Abbas RZ, Ijaz M, Durrani AZ, Saleem MH, Rehman MU. A review on epidemiology, global prevalence, and economic losses of fasciolosis in ruminants, *Microbial Pathogenesis*, 109, 253-262.
- 2014 Ali A, Ijaz M, Durrani AZ, Ali MM, Mehmood M, **Sabir AJ**. Prevalence and chemotherapy of anaplasmosis in clinically affected small ruminants in the river ravi region, Lahore, *Pakistan Journal of Zoology*, 46, 876-880.
- 2014 Ijaz M, Mehmood K, Durrani AZ, **Sabir AJ**, Abbas T and Ali S. treatment of chronic mastitis in a dairy cow: A case report, *Global Veterinaria* 13, 01-04.
- 2014 Imran M, Pasha TN, Saima, Akram M, Mehmood K and **Sabir AJ**. Effect of β -mannanase on broilers performance at different dietary energy levels, *Global Veterinaria*, 12, 622-626.
- 2013 **Sabir AJ**. 2013. Serum biochemistry pathology of layers affected with fatty liver hemorrhagic syndrome. Master's Thesis.
- 2013 Mehmood K, Ijaz M, Durrani AZ, Khan MA, **Sabir AJ** and Saleem MH. Infection rate and therapeutic trials on various gastrointestinal parasites in sheep and goats in and around Lahore, Pakistan. *Pakistan Journal of Zoology*, 45, 489-494.
- 2012 Shahzad W, Mehmood K, Aslam W, Munir R, Ijaz M, Ahmad R, Khan MS, **Sabir AJ**. Prevalence and molecular diagnosis of fasciola hepatica in sheep and goats in different districts of Punjab, Pakistan, *Pakistan Veterinary Journal*, 32, 535-538.

BOOK CHAPTERS

- 2022 Shahid MA, **Sabir AJ**, Arshad MI, Rahman SU, Tahir MF, Zahid MN and Zahoor MA. Infectious Laryngotracheitis Virus: Molecular Biology, Pathobiology, and Control Strategies, *Emerging Trends in Veterinary Virology*, 23, 18-40. ISBN (Online): 978-981-5036-96-1.

GRANTS & AWARDS (\$163,000 USD)

2021	Postdoctoral Research Fellowship at University of Saskatchewan, Canada (72,000 USD)
2020	Distinguished Talent Visa , Australian Government, Department of Home Affairs
2019	John Neville Research Scholarship for 2019, University of Melbourne (AUD 500)
2018	Houghton Trust Travel Grant to attend 43rd Herpesviruses workshop 2018, Vancouver, Canada (1000 GBP)
2018	FVAS student Travel Award University of Melbourne (AUD 1500)
2016	Melbourne International Research Scholarship for PhD research at University of Melbourne (~ AUD110,000)
2016	Melbourne Fee Remission Scholarship for PhD research at University of Melbourne
2014	Turkish Government Scholarship for PhD studies at Ankara University
2014	Travel grant by the Higher Education Commission to attend XIVth European Poultry Conference, 2014, Stavanger, Norway. (2500 USD)

SELECTED PRESENTATIONS & POSTERS

2021	Sabir AJ , Full genomic Characterisation of an emerging infectious laryngotracheitis virus linked to a vaccine strain revealed its identity. Marek's Disease and Avian Herpesviruses Symposium 2021 (Virtual), University of Guelph, Ontario, Canada. (Oral Presentation)
2018	Sabir AJ , Investigation of the correlation between systemic antibodies to surface glycoproteins of infectious laryngotracheitis virus (ILTV) and protective immunity. 43rd International herpesviruses workshop, 21-25 July 2018, University of British Columbia, Vancouver, Canada. (Poster Presentation)
2018	Sabir AJ , Investigation of the correlation between systemic antibodies to surface glycoproteins of infectious laryngotracheitis virus (ILTV) and protective immunity. FVAS Postgraduate Students Symposium, 29-30 November 2018, The University of Melbourne, Parkville, Victoria, Australia. (Oral Presentation)
2018	Sabir AJ , Are the vaccinated chickens well protected against infectious laryngotracheitis virus? FVAS research week, 15th November 2018. (Oral Presentation)
2017	Sabir AJ , Production of recombinant infectious laryngotracheitis virus (ILTV) glycoproteins by small-scale transient gene expression in HEK293T cells. FVAS Postgraduate Students Symposium, 24-25 October 2017, The University of Melbourne, Werribee, Victoria, Australia. (Oral Presentation)
2014	Sabir AJ , Pathology and Serum Chemistry of Layers Affected with Fatty Liver Hemorrhagic Syndrome, XIVth European Poultry Conference, 23-27 June, Stavanger Norway. (Oral Presentation)

TRAINING & WORKSHOPS

2021	Containment Level 3 Biosafety Training , University of Saskatchewan
2019	Protein Expression Workshop , CSIRO, Parkville Australia
2018	Two days' workshop on using Geneious (bioinformatics package) for genomics research , The University of Melbourne, Australia
2017	Bioinformatics best practices workshop , The University of Melbourne, Australia
2017	Protein Expression Workshop , CSIRO, Parkville Australia
2017	Academic Research Writing , the University of Melbourne, Australia
2016	Protein Expression Workshop , CSIRO, Parkville Australia

TECHNICAL SKILLS

Molecular Biology

Aseptic cell culture techniques (primary and continuous), recombinant protein expression and purification, vector preparation and validation, molecular cloning, transfection/transformation of the cells, SDS-PAGE and western immunoblotting, genome-wide CRISPR/Cas9 screens, Lentivirus packaging and transduction, DNA/RNA extraction, PCR, RT-qPCR, PCR-RFLP, PCR- HRM, genomic DNA purification, genome sequencing.

Virology and Serology

Primary isolation of viruses, plaque purification of viruses, virus titrations, virus neutralization assays, plaque reduction assays, immunological assays, ELISA, splenocyte stimulation assays, immuno-peroxidase monolayer assays (IPMA).

Tools

Geneious, Linux (beginner), Simplot, MEGA, RDP4, SnapGene, SplitsTree5, Amplifx, Minitab, GraphPad prism, Proteus, UniProt, Phyre2, MS office, Mendeley, Endnote.

SELECTED MENTORSHIP EXPERIENCE

- 2022 Training lab members in various virology and molecular biology techniques such as cell culture, virus stock generation, Western blotting, protein quantification and general laboratory housekeeping.
- 2021 Advised a PhD student investigating molecular characterization of lytic bacteriophages from seawater. Assisted him in using various bioinformatics platforms such as NCBI, NCBI blast, multiple alignments, primer designing and PCR.
- 2019 Advised a fellow PhD student working on *Mycoplasma synoviae* in various laboratory techniques such as Western blotting, dialyzing recombinant proteins, ELISA, preparation of cell culture media, isolating splenocytes from chicken spleens **this work is currently in prep for publication*
- 2019 Advised a PhD student working on whole-genome sequencing of chicken viruses directly from field samples on primary cell culture, genomic DNA extraction and purification, using sequencing pipelines and academic writing.

SELECTED SERVICE & OUTREACH

2018 – 2019 **General Secretary** of Postgraduate Students Association (PAWS)

Helped the students' body in organizing various events throughout my tenure, highlights include international lunch, morning teas, BBQs, Academic writing workshop, Christmas party, postgraduate student's symposium, and collaboration with Graduate Students Association.

REFERENCES

Professor Amir Noormohammdi

Professor in Avian Medicine and Head of Anatomic Pathology
The University of Melbourne
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Professor Joanne Devlin

Professor in Epidemiology and Public Health
The University of Melbourne
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Professor Abdul Jabbar

Professor in Veterinary Parasitology
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