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EDUCATION

03/2017—09/2017

Former Visiting Ph.D. Research Scholar, Infectious Disease Research Laboratory, Animal Health Diagnostic Center, Department of Population Medicine and Diagnostic Sciences, C1-114, Vet Medical Center, College of Veterinary Medicine, Cornell University, Ithaca, New York 14853-5786. New York, U.S.A.

2013—2018

Ph.D. Microbiology, Department of Microbiology, Faculty of Veterinary Science, University of Veterinary and Animal Sciences, Lahore-54000, Pakistan

2010—2013

M. Phil Microbiology, Institute of Microbiology, University of Agriculture, Faisalabad-38000, Pakistan

2003—2008

D.V.M., Faculty of Veterinary Science, University of Agriculture, Faisalabad-38000, Pakistan

2000—2003

F. Sc., Higher Secondary School Certificate [HSSC] in Pre-Medical group, F.G. Inter College Bahawalpur, Federal Board of Intermediate and Secondary Education [FBISE] Islamabad- 44000, Pakistan

1998—2000

Matric, Secondary School Certificate [SSC] in Science group, Government High School Yazman, Board of Intermediate and Secondary Education [BISE] Bahawalpur-63100, Pakistan

INTERNSHIPS

12/07—01/08

1 month internship at **Poultry Research Institute (PRI)** Rawalpindi

01/08—02/08

1 month internship at **Livestock Production Research Institute (LPRI)** Bahadar nagar, Okara

02/08—03/08

1 month internship at **Government Angora Goat Farm** at Layyah.

03/08—04/08

1 month internship at **Veterinary Research Institute (VRI)** Lahore.

04/08—05/08

1 month internship at **Livestock Experimental station** Khizrabad, Sargodha.

05/08—06/08

1 month internship at **Civil Veterinary Hospital**, Bangla Khichian, Faisalabad.

06/08—07/08

1 month internship at **Disease Diagnostic Laboratory**, Department of Pathology, Faculty of Veterinary Science, University of Agriculture, Faisalabad.

Ph. D. SUPERVISORY COMMITTEE

Prof. Dr. Khushi Muhammad	Supervisor Department of Microbiology, Faculty of Veterinary Science, University of Veterinary and Animal Sciences, Lahore.
Prof. Dr. Masood Rabbani	Major Member Department of Microbiology, Pro-Vice Chancellor & Dean Faculty of Veterinary Science, University of Veterinary and Animal Sciences, Lahore
Prof. Dr. Muhammad Sarwar Khan	Minor Member Department of Clinical Medicine and Surgery/Director, Advance Studies, University of Veterinary and Animal Sciences, Lahore

THESES TITLES

Degree	Thesis Title	Year of Passing	Supervisor
Master of Philosophy (M. Phil)	Slaughter house based seroprevalence of Para tuberculosis in cattle and buffaloes in Faisalabad, Pakistan	2013	Dr. M. Khalid Mansoor. University of Agriculture, Faisalabad, Pakistan
Doctor of Philosophy (Ph. D.)	Molecular Characterization of Soil borne <i>Brucella</i> Species in Punjab, Pakistan	2018	Prof. Dr. Khushi Muhammad. University of Veterinary and Animal Sciences, Lahore Pakistan

RESEARCH COLLABORATION

Research work	Funding	Collaborators	Department	University	Country
IRSIP	HEC Pakistan	Professor Yung-Fu Chang	Department of Population Medicine and Diagnostic Sciences	Cornell University college of veterinary Medicine, Ithaca, New York	U.S.A.
Ph. D. research Project-1	UDL, U.V.A.S and Penn State University	Prof. Dr. Masood Rabbani and Prof. Dr. Bhushan M. Jayarao	University Diagnostic Lab and Pennsylvania Animal Diagnostic Laboratory, Penn State.	UVAS and Penn State University	Pakistan and U.S.A.
Ph. D. research Project-2	UVAS and Friedrich-Loeffler-Institute (FLI)	Prof. Dr. Khushi Muhammad, Prof. Dr. Masood Rabbani, Dr. Ihtasham ul haq, and Prof. Dr. Heinrich Neubauer	The Institute for Bacterial Infections and Zoonoses (IBIZ), FLI.	Friedrich-Loeffler-Institute	Germany

PROFESSIONAL SKILLS

Skill/Technique	Experience & Expertise
Real-Time PCR (qPCR)	Hands-on experience in quantitative real-time PCR (qPCR) during PhD research at the Quality Operations Laboratory (QOL) & University Diagnostic Lab (UDL) in University of Veterinary and Animal Sciences (UVAS), Lahore.
Polymerase Chain Reaction (PCR)	Proficient in Conventional PCR, Touchdown PCR, Gradient PCR, and Multiplex PCR with practical experience at the University Diagnostic Laboratory (UDL), UVAS Lahore.
ELISA	Experienced in Direct ELISA, Indirect ELISA, and Sandwich ELISA for diagnostic and research applications at UDL-UVAS and the Disease Diagnostic Laboratory, University of Agriculture Faisalabad (UAF).
Protein & Molecular Biology Techniques	Skilled in Western Blotting, SDS-PAGE, Agarose Gel Electrophoresis, Gene Cloning, DNA/RNA analysis, and other molecular biology techniques.
Serological Techniques	Experienced in Complement Fixation Test (CFT), Indirect Hemagglutination Assay (IHA), Haemagglutination Assay (HA), Haemagglutination Inhibition (HI) Assay, Agar Gel Precipitation Test (AGPT) and immunological diagnostic assays.
Analytical Techniques	Proficient in High-Performance Liquid Chromatography (HPLC) and Paper Chromatography for analytical and research applications.
Microbiological Techniques	Experienced in microbial culture, isolation, identification, aseptic techniques, media preparation, and routine microbiological laboratory procedures.

Projects Conducted:

Sr. #	Project Title	Funding Agency	Role	Duration	Total Grant	Status
1	Development of Vaccine against Lympho Disease in Small Ruminants	NRPU-HEC	PI	2022-2025	PKR 3.95 Million	Completed
2	Molecular Characterization and Development of Attenuated Vaccine Using Local Strains of Contagious Pustular Dermatitis Virus from Small Ruminants of Cholistan	NRPU-HEC	Co- PI	2020-2024	PKR 8.90 Million	Completed
3	Genetic analysis of Rotavirus in Nursing Goat Kids and Farm Workers of South Punjab, Pakistan	PSF	Co- PI	2026	PKR 7.90 Million	Shortlisted
4	Development of Field-Deployable Diagnostic Tool for Early Detection of Major Bacterial Pathogens of Small Ruminants	PSF	PI	2026	PKR 4.20 Million	Submitted
5	Development of a Rapid Field Diagnostic Kit for On-Site Detection of Lympho Disease in Small Ruminants	ALP	PI	2026	PKR 5.51 Million	Shortlisted
6	Development of cost-effective ELISA kit using local isolates for detection of bovine Brucellosis	ALP	PI	2026	PKR 6.36 Million	Submitted

LIST OF PUBLICATIONS

1. Zhuoga D, Zhang L, **Ahmed R**, Chen X, Almutairi MH and Wang J, 2026. Fungal microbiota comparison analysis of different breeds of plateau sheep. Pak Vet J, 46(5): 1349-1356. <http://dx.doi.org/10.29261/pakvetj/2026.121>
2. Maria Nazir, **Rais Ahmed**, Faisal Siddique, Omer Naseer, Momina Malik, Duaa Hayat, Abdullah Saghir Ahmad, Abdul Whab Manzoor, Aqsa Mushtaq, Sobia Amir Chughtai and Hafiz Muhammad Waqar. Molecular Characterization and Phylogenetic Profiling of *Corynebacterium pseudotuberculosis* Isolates from Small Ruminants in Bahawalpur, Pakistan. *Pakistan J. Zool.*, pp 1-10, 2026. DOI: <https://dx.doi.org/10.17582/journal.pjz/20251124144613>
3. Duaa Hayat, **Rais Ahmed**, Faisal Siddique, Omer Naseer, Abdullah Saghir Ahmad, Abdul Whab Manzoor, Aqsa Mushtaq, Sobia Amir Chughtai and Hafiz Muhammad Waqar. Development and Immunogenicity Evaluation of an Inactivated *Corynebacterium pseudotuberculosis* Vaccine in Small Ruminants. *Pakistan J. Zool.*, pp 1-9, 2026. DOI: <https://dx.doi.org/10.17582/journal.pjz/20251121145009>
4. Javed Z, Sadia H, Iqbal MJ, Shamas S, Malik K, **Ahmed R**, Raza S, Butnariu M, Cruz-Martins N, Sharifi-Rad J. Apigenin role as cell-signaling pathways modulator: implications in cancer prevention and treatment. *Cancer Cell International*. 2021 Dec;21(1):1-1. DOI: [10.1186/s12935-021-01888-x](https://doi.org/10.1186/s12935-021-01888-x)
5. **Iqbal MJ**, Javed Z, Sadia H, Qureshi IA, Irshad A, **Ahmed R**, Malik K, Raza S, Abbas A, Pezzani R, Sharifi-Rad J. Clinical applications of artificial intelligence and machine learning in cancer diagnosis: looking into the future. *Cancer cell international*. 2021 Dec;21(1):1-1. DOI: [10.1186/s12935-021-01981-1](https://doi.org/10.1186/s12935-021-01981-1)
6. Quality and nutrition of cow's milk paneer supplemented with pastes from indigenous date varieties, **2024**. Qureshi, Tahir Mahmood, Ghulam Muhammad, Muhammad Nadeem, Kashif Akram, Salam A. Ibrahim, Faisal Siddique, **Rais Ahmed** et al... *Future Foods* 10: 100477. <https://doi.org/10.1016/j.fufo.2024.100477>. Journal Impact Factor: 7.2
7. Sadia H, Ullah M, Irshad A, Malik K, Ahmad W, **Ahmed R**, Khan MU, Ashiq S, Akbar A, ur Rehman A, Raza S. Mutational analysis of exons 5-9 of TP53 gene in breast cancer patients of Punjabi ethnicity. *Advancements in Life Sciences*. **2022** May 29;9(1):18-23.
8. Shafique L, Wu S, Aqib AI, Ali MM, Ijaz M, Naseer MA, Sarwar Z, **Ahmed R**, Saleem A, Ahmad AS, Pan H. Evidence-Based Tracking of MDR E. coli from Bovine Endometritis and Its Elimination by Effective Novel Therapeutics. *Antibiotics*. **2021** Aug 18;10(8):997. <https://doi.org/10.3390/antibiotics10080997>
9. Siddique F, Abbas RZ, Iqbal A, Rabbani M, Rafique A, Hussain I, **Ahmed R**, MAHMOOD S, Lotfi A. Development of humoral immune response to thermostable newcastle disease vaccine strain i-2 in ring-necked pheasant (*Phasianus colchicus*). *Kafkas Üniversitesi Veteriner Fakültesi Dergisi*. **2021** Mar 1;27(2). DOI: [10.9775/kvfd.2020.25021](https://doi.org/10.9775/kvfd.2020.25021)
10. Muhammad Umer Khan, Haleema Sadia, Asma Irshad, Atif Amin Baig, Sana Ashiq, Beenish Zahid, Rozeena Sheikh, Sadia Roshan, Azam Ali, Shazia Shamas, Munir Ahmed Bhinder, **Rais Ahmed**. Detection, quantification and genotype distribution of HCV patients in Lahore, Pakistan by real-time PCR. *African Health Sciences*. **2020** Oct 7;20(3):1143-52. DOI: [10.4314/ahs.v20i3.16](https://doi.org/10.4314/ahs.v20i3.16)

11. Sadia H, Bhinder MA, Irshad A, Zahid B, **Ahmed R**, Ashiq S, Malik K, Riaz M, Nadeem T, Ashiq K, Akbar A. Determination of expression profile of p53 gene in different grades of breast cancer tissues by real time PCR. *African Health Sciences*. **2020** Oct 7;20(3):1273-82. DOI: [10.4314/ahs.v20i3.32](https://doi.org/10.4314/ahs.v20i3.32)
12. Saleem MZ, Akhtar R, Aslam A, Rashid MI, Chaudhry ZI, Shah BA, **Ahmed R**, Akmal M, Murtaza G. Comparative Evaluation of Real-Time PCR With Conventional PCR Assay for Diagnosis of Brucellosis in Ruminants. *JAPS, Journal of Animal and Plant Sciences*. **2020** Dec 1;30(6):1389-94. <https://doi.org/10.36899/JAPS.2020.6.0159>
13. **Ahmed R**, Mansoor MK, Hussain I, Saqib M, Hussain MH, Aqib AI, Sadia H, Muhammad J, Irshad A, Prince K, Saleem MZ. Abattoir based Sero-Survey of *Mycobacterium avium* Subspecies *Paratuberculosis* in Bovines in District Faisalabad-Pakistan. *Pakistan Journal of Zoology*. **2020** Jan 1;52(1):115-9. DOI: <https://dx.doi.org/10.17582/journal.pjz/2020.52.1.115.119>
14. Murtaza S, Nazir A, Raza MA, Akhtar MS, Ayaz MM, Ali M, **Rais A**. Ultrasonographic and Gross Pathological Studies on Testes and Epididymides of Rams and Bucks with Potential Lesions. *Pakistan Journal of Zoology*. **2019** Oct 31;51(5):1911. DOI: <http://dx.doi.org/10.17582/journal.pjz/2019.51.5.1911.1917>
15. Sadia H, Irshad A, Ashiq S, **Ahmed R**, Ashiq K, Nadeem T, Akbar A, Shams S, Roshan S. Prevalence of Lifestyle and Demographics Related Risk Attributes among Breast Cancer Patients in Pakistan. *Int. (Lahore)*, 31(6),851-855, **2019**
16. Adnan, Muhammad, Muhammad Waqar, **Rais Ahmed**, Haroon Afzal, Muhammad Abdullah Mueen, Urooj Qayyum, Farhang Hameed Awlqadr et al. "Botulinum toxin from foodborne hazard to aesthetic and biomedical tool: mechanisms, applications, detection strategies, and future perspectives." *Archives of Microbiology* 208, no. 7 (2026): 328. DOI <https://doi.org/10.1007/s00203-026-04877-8>, Journal Impact Factor: 2.8.
17. **Ahmed, Rais**, Waqas Ahmed, Faisal Siddique, Abdullah Saghir Ahmad, Haleema Sadia, Duaa Hayat, Abdul Whab Manzoor, Aqsa Mushtaq, and Razia Sultana. Unveiling Cancer Proteoforms: Insights into Biomarker Discovery and Therapeutic Strategies. *Pakistan J. Zool.*, pp 1-9, 2026 DOI: <https://dx.doi.org/10.17582/journal.pjz/20241218035207>. Journal Impact Factor: 0.546
18. **Ahmed, Rais**, Waqas Ahmed, Abdullah Saghir Ahmad, Mudassir Ahmad, Kashif Prince, Haleema Sadia, Duaa Hayat et al. Antimicrobial Peptides in Poultry Farming: A Multi-Omics Approach to Combat Antimicrobial Resistance. *Pakistan J. Zool.*, pp 1-10, 2026, DOI: <https://dx.doi.org/10.17582/journal.pjz/20250313035016>, Journal Impact Factor: 0.546
19. In vitro evaluation of medicinal plant extracts against *Corynebacterium pseudotuberculosis*: A potential remedy for caseous lymphadenitis in small ruminants. 2025. Naeem F, **Ahmed R**, Malik M, Hayat D, Saeed Z, Zahid A, Adnan M, Rauf A, Nazir M, Haneef A. *Continental Vet J*, <http://dx.doi.org/10.71081/cvj/2025.057>
20. Advancements in long non-coding RNA-based therapies for cancer: targeting, delivery, and clinical implications, 2024. Muhammad Ammad, Zeeshan Javed, Haleema Sadia, **Rais Ahmed**, Ali Akbar, Tariq Nadeem, Daniela Calina, Javad Sharifi-Rad. *Medical Oncology* (2024) 41:292. <https://doi.org/10.1007/s12032-024-02534-y>. Journal Impact Factor: 2.8

21. Saleem MZ, Akhtar R, Aslam A, Rashid MI, Chaudhry ZI, Shah BA, **Ahmed R**, Akmal M, Murtaza G. COMPARATIVE EVALUATION OF REAL-TIME PCR WITH CONVENTIONAL PCR ASSAY FOR DIAGNOSIS OF BRUCELLOSIS IN RUMINANTS. JAPS, Journal of Animal and Plant Sciences. 2020 Dec 1;30(6):1389-94.
22. Noreen Sarwar, **Rais Ahmed**, Marya Saadullah, Kamran ullah Khan, Shagufta Kamran, Faisal Ameen Baig, Muhammad Khalid Mansoor, Amjad Islam Aqib, Kashif Prince, Muhammad Zain Saleem, Abdul Whab Manzoor, Haleema Sadia. Prevalence of *Helicobacter pylori* infection and its associated diseases in low socio-economic workers in tertiary care hospital of Lahore, Pakistan. Biomedical Letters 2019; 5(1):1-6.
23. Ahmed W, Hafeez MA, **Ahmed R**. Advances in engineered trans-acting regulatory RNAs and their application in bacterial genome engineering. Journal of Industrial Microbiology and Biotechnology. 2019 Jun 1;46(6):819-30.
24. **Aqib AI**, Nighat S, **Ahmed R**, Sana S, Jamal MA, Kulyar MF, Khan NU, Sarwar MS, Hussain MA, Rahman A. Drug Susceptibility Profile of Staphylococcus aureus Isolated from Mastitic Milk of Goats and Risk Factors Associated with Goat Mastitis in Pakistan. Pakistan Journal of Zoology. 2019 Feb 1;51(1).
25. Rashid G, Avais M, Ahmad SS, Mushtaq MH, **Ahmed R**, Ali M, Naveed-ul-Haque M, Ahmad M, Khan MA, Khan NU. Influence of Nitrogen Fertilizer on Nitrate Contents of Plants: A Prospective Aspect of Nitrate Poisoning in Dairy Animals. Pakistan Journal of Zoology. 2019 Feb 1;51(1).
26. Saleem MZ, Akhtar R, Aslam A, Rashid MI, Chaudhry ZI, Manzoor MA, Shah BA, **Ahmed R**, Yasin M. Evidence of *Brucella abortus* in non-preferred caprine and ovine hosts by real-time PCR assay. Pak. J. Zool. 2019 Jun 1;51:1187-9.
27. Sadia H, Irshad A, Ashiq S, **Ahmed R**, Ashiq K, Nadeem T, Akbar A, Shams S, Roshan S. PREVALENCE OF LIFESTYLE AND DEMOGRAPHICS RELATED RISK ATTRIBUTES AMONG BREAST CANCER PATIENTS IN PAKISTAN ,31(6),851-855,2019 ISSN 1013-5316;.
28. Aqib AI, Kulyar MF, Ashfaq K, Bhutta ZA, Shoaib M, **Ahmed R**. Camel milk insuline: Pathophysiological and molecular repository. Trends in Food Science & Technology. 2019 Jun 1;88:497-504.
29. Aqib AI, Anjum AA, Ijaz M, Hussain R, **Ahmed R**, Farooqi SH, Aslam HB, Hussain K, Mehmood K, Zhang H. Development and evaluation of vaccine against Staphylococcus aureus recovered from naturally occurring mastitis in she-camels. Microbial pathogenesis. 2018 Apr 1;117:341-7.
30. Aqib AI, Ijaz M, Farooqi SH, **Ahmed R**, Shoaib M, Ali MM, Mehmood K, Zhang H. Emerging discrepancies in conventional and molecular epidemiology of methicillin resistant Staphylococcus aureus isolated from bovine milk. Microbial pathogenesis. 2018 Mar 1;116:38-43.
31. Prince K, Khan MS, Ijaz M, Anjum AA, Ali MA, Khan JA, Nisar A, **Rais A**, Mushtaq A, Umar S, Yung-Fu C. Dynamics of Selenium Deficiency in Bovines in District Kasur, Punjab, Pakistan. Pakistan Journal of Zoology. 2018 Apr 1;50(2).
32. Ghorri MT, Khan MS, Khan JA, Rabbani M, Chaudhary MH, Shabbir MZ, **Ahmed R**, Chaudhry HR, Muhammad J. Molecular detection of Burkholderia mallei in nasal swabs from draught horses with signs of respiratory tract infection. JAPS: Journal of Animal & Plant Sciences. 2018 Dec 1;28(6).

33. Ahmed W, Hafeez MA, **Ahmed R**, Mahmood S. CRISPR-Cas system in regulation of immunity and virulence of bacterial pathogens. *Gene Reports*. 2018 Dec 1;13:151-7.
34. Rasool H, Avais M, Rabbani M, **Ahmed R**, Muhammad K, Ali M. An innovative approach to treat brucellosis in Buffaloes. *Biomed. Lett*. 2018;4:19-23.
35. Muhammad Asad Ali, Khushi Muhammad, Aftab Ahmad Anjum, Mansur-ud-Din Ahmad, Masood Rabbani, Muhammad Zubair Shabbir, Arfan Ahmad, Muhammad Nawaz, Muhammad Tasleem Ghori, Javed Muhammad, Haroon Rashid Chaudhry, Tariq Jamiel, Muhammad Haisem, Tasmia Awan, **Rais Ahmed** and Bhushan M Jayarao., 2017, January. Association of soil chemistry and other factors with spatially distributed *Burkholderia mallei* DNA in Punjab province, Pakistan. In *2017 14th International Bhurban Conference on Applied Sciences and Technology (IBCAST)* (pp. 220-236). IEEE.
36. **Ahmed R**, Muhammad K, Rabbani M, Khan MS, Ali MA, Naureen S, Kanwal F, Raza S, Aqib AI, Sadia H, Chang YF. Phylogenetic Analysis of Soil Borne *Brucella* Species by Targeting Insertion Sequence 711 Element in Punjab, Pakistan. *International Journal of Agriculture and Biology*. 2017 Jan 1;19(6):1457-62.
37. **Ahmed R**, Muhammad K, Rabbani M, Khan MS, Anjum AA, Muhammad J. Risk factors associated with the prevalence of soil borne *Brucella* species detected by metagenomics approach in Punjab, Pakistan. *JAPS: Journal of Animal & Plant Sciences*. 2017 Dec 1;27(6).
38. **Ahmed R**, Muhammad K, Rabbani M, Khan MS. Spatial Distribution of Soil Borne *Brucella* Species Specific DNA in Punjab, Pakistan. *Pakistan Journal of Zoology*. 2017 Sep 1;49(5).
39. Aqib, Amjad Islam, Muhammad Fakhar-e-Alam Kulyar, Khurram Ashfaq, Zeeshan Ahmad Bhutta, Muhammad Shoaib, and **Rais Ahmed**. "Camel milk Insuline: Pathophysiological and molecular Repository." *Trends in Food Science & Technology* (2019). **(Impact Factor: 8.519)**
40. Aqib, A. I., Ijaz, M., Farooqi, S. H., **Ahmed, R.**, Shoaib, M., Ali, M. M., & Zhang, H. (2018). Emerging discrepancies in conventional and molecular epidemiology of methicillin resistant *Staph aureus* isolated from bovine milk. *Microbial pathogenesis*.116: 38-43. **(Impact Factor: 2.043)**
41. Ahmed, W., Hafeez, M. A., & **Ahmed, R.** (2019). Advances in engineered trans-acting regulatory RNAs and their application in bacterial genome engineering. *Journal of industrial microbiology & biotechnology*, 1-12 **(Impact Factor: 2.993)**
42. Development and Evaluation of vaccine against *Staphylococcus aureus* recovered from naturally occurring mastitis in She-camels. Amjad Islam Aqib, Aftab Ahmad Anjum, Muhammad Ijaz, Riaz Hussain, **Rais Ahmed**, Shahid Hussain Farooqi, Hassan Bin Aslam, Kashif Hussain, Khalid Mehmood*, Hui Zhang. *Microbial Pathogenesis*. 2018 Apr;117:341-347 **(Impact Factor: 2.043)**
43. Ahmed, Waqas, Mian Abdul Hafeez, **Rais Ahmad**, and Sammina Mahmood. "CRISPR-Cas system in regulation of immunity and virulence of bacterial pathogens." *Gene Reports*(2018).
44. Manzoor Ahmed Ghumman, Abdul Whab Manzoor, Sarwat Naz, **Rais Ahmad** and Rasheed Ahmad (2013), "Prevalence of Tuberculosis in Cattle and Buffalo at Various Livestock Farms in Punjab," *International Journal of Veterinary Medicine: Research & Reports*, Vol. 2013 (2013), Article ID 145084, DOI: 10.5171/2013.145084.
45. Muhammad Umer Khan, Haleema Sadia, Asma Irshad, Atif Amin Baig, Sana Ashiq, Beenish Zahid, Rozeena Sheikh, Sadia Roshan, Azam Ali, Shazia Shamas, Munir Ahmed Bhinder, **Rais Ahmad**.

- "Detection, quantification and genotype distribution of HCV patients in Lahore, Pakistan by real-time PCR." *African Health Sciences* 20, no. 3 (2020): 1143-1152. **(Impact Factor: 0.842)**
46. Sadia, Haleema, Munir Ahmad Bhinder, Asma Irshad, Beenish Zahid, **Rais Ahmed**, Sana Ashiq, Kausar Malik et al. "Determination of expression profile of p53 gene in different grades of breast cancer tissues by real time PCR." *African Health Sciences* 20, no. 3 (2020): 1273-1282. **(Impact Factor: 0.842)**
 47. **Rais Ahmed**, Khushi Muhammad, Masood Rabbani and Muhammad Sarwar khan. "Spatial Distribution of Soil Borne *Brucella* Species Specific DNA in Punjab-Pakistan". *Pakistan J Zool*; Vol. 49(5), pp. 1739-1748, 2017 **(Impact Factor: 0.491)**
 48. **Rais Ahmed**, Khushi Muhammad, Masood Rabbani, Muhammad Sarwar khan, Aftab Ahmed Anjum and Javed Muhammad. "Risk factors associated with the Prevalence of Soil Borne *Brucella* species detected by metagenomics approach in Punjab, Pakistan". *The J. Anim. Plant Sci.* 27(6):2017 **(Impact Factor: 0.422)**
 49. **Ahmed, R.**, Muhammad, K., Rabbani, M., Khan, M. S., Ali, M. A., Naureen, S., & Chang, Y. F. (2017). Phylogenetic Analysis of Soil Borne *Brucella* Species by Targeting Insertion Sequence 711 Element in Punjab, Pakistan. *INTERNATIONAL JOURNAL OF AGRICULTURE AND BIOLOGY*, 19(6), 1457-1462. **(Impact Factor: 0.746)**
 50. Dynamics of Selenium Deficiency in Bovines in District Kasur, Punjab, Pakistan. Kashif Prince*, M. Sarwar Khan, Muhammad Ijaz, Aftab Ahmad Anjum, Muhammad Asad Ali, Jawaria Ali Khan, Nisar Ahmad, **Rais Ahmed**, Aamerzish Mushtaq, Sajid Umar and Yung-Fu Chang. *Pakistan J. Zool.*, vol. 50(2), pp 611-617, 2018. **(Impact Factor: 0.547)**
 51. M. T. Ghorī*, M. S. Khan, J. A. Khan, M. Rabbani, M. H. Chaudhary, M. Z. Shabbir, **R. Ahmed**, H. R. Chaudhry and Javed Muhammad. Molecular detection of *Burkholderia mallei* in nasal swabs from draught horses with signs of respiratory tract infection. *The J. Anim. Plant Sci.* 2018 **(Impact Factor: 0.407)**
 52. Rashid, Ghazunfar, Muhammad Avais, Syed Saleem Ahmad, Muhammad Hassan Mushtaq, **Rais Ahmed**, Mahboob Ali, Muhammad Naveed-ul-Haque, Mehtab Ahmad, Mumtaz Ali Khan, and Naimat Ullah Khan. "Influence of Nitrogen Fertilizer on Nitrate Contents of Plants: A Prospective Aspect of Nitrate Poisoning in Dairy Animals." *Pakistan Journal of Zoology* 51, no. 1 (2019) **(Impact Factor: 0.547)**
 53. Aqib, A. I., Nighat, S., Ahmed, R., Sana, S., Jamal, M. A., Kulyar, M. F. E. A., ... & ur Rahman, S. (2019). Drug susceptibility profile of *Staphylococcus aureus* isolated from mastitic milk of goats and risk factors associated with goat mastitis in Pakistan. *Pak J Zool*, 51, 307-15. **(Impact Factor: 0.547)**
 54. Saleem, Muhammad Zain, Raheela Akhtar, Asim Aslam, Muhammad Imran Rashid, Zafar Iqbal Chaudhry, Muhammad Adeel Manzoor, Bilal Ahmed Shah, **Rais Ahmed**, and Muhammad Yasin. "Evidence of *Brucella abortus* in Non-Preferred Caprine and Ovine Hosts by Real-time PCR Assay." *Pakistan Journal of Zoology* 51, no. 3 (2019): 1187-1189. **(Impact Factor: 0.547)**
 55. **Ahmed, R.**, Mansoor, M. K., Hussain, I., Saqib, M., Hussain, M. H., Aqib, A. I., ... & Saleem, M. Z. (2020). Abattoir based Sero-Survey of *Mycobacterium avium* Subspecies *Paratuberculosis* in Bovines in District Faisalabad-Pakistan. *Pakistan Journal of Zoology*, 52(1), 115-119. **(Impact Factor: 0.547)**

56. Murtaza, S., Nazir, A., Raza, M. A., Akhtar, M. S., Ayaz, M. M., Ali, M., & **Rais, A.** (2019). Ultrasonographic and Gross Pathological Studies on Testes and Epididymides of Rams and Bucks with Potential Lesions. *Pakistan Journal of Zoology*, 51(5), 1911. **(Impact Factor: 0.547)**
57. M. Z. Saleem, R. Akhtar, A. Aslam, M. I. Rashid, Z. I. Chaudhry, B. A. Shah, **R. Ahmed**, M. Akmal and G. Murtaza. Comparative Evaluation of Real-Time PCR with Conventional PCR Assay for Diagnosis of Brucellosis in Ruminants. *The Journal of Animal & Plant Sciences*, 30(6): 2020, Page: 1389-1394. **(Impact Factor: 0.481)**
58. Sadia, Haleema, Asma Irshad, Sana Ashiq, **Rais Ahmed**, Kanwal Ashiq, Tariq Nadeem, Ali Akbar, Shazia Shams, and Sadia Roshan. "PREVALENCE OF LIFESTYLE AND DEMOGRAPHICS RELATED RISK ATTRIBUTES AMONG BREAST CANCER PATIENTS IN PAKISTAN." *Int.(Lahore)*,31(6), 851-855,2019.
59. Ahmed W, Ashraf M, Sattar A, Rehman S, Shabbir MAB, Ijaz N, **Ahmed R**, Rao SI, Shahin F. Isolation and antibiotic susceptibility of gram negative bacteria associated with urinary tract infection. *Biomed Lett* 2015; 1(2):70-73.
60. An innovative approach to treat brucellosis in buffaloes. Rasool HU, Avais M, Rabbani M, **Ahmed R**, Muhammad K, Ali MA. An innovative approach to treat brucellosis in buffaloes. *Biomedical Letters* 2018; 4(1):19-23.
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Abstracts Published in Conference Proceedings:

1. Fazeela Fareed, Muhammad Mazhar Ayaz, Faisal Siddique, **Rais Ahmed**, Abdullah Saghir Ahmad, Kashif Rahim, Santosh Kumar and Firasat Hussain. Physico-Chemical Characteristics and Antioxidant Potential of Date Fruit Added Dahi. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-11 Biotechnology, Page#21.
2. Abdul Rehman, Muhammad Mazhar Ayaz, Faisal Siddique, **Rais Ahmed**, Kashif Rahim, Santosh Kumar and Firasat Hussain. Genomic Identification, Evolution, and Functional Characterization of Heat-shock Protein Genes in *Thermomonas hydrothermalis*. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-28, Cell and Molecular Biology, Page#32.
3. Ayesha Tariq, Muhammad Mazhar Ayaz, Faisal Siddique, **Rais Ahmed**, Abdullah Saghir Ahmad, Kashif Rahim, Ieman Tariq, Santosh Kumar and Firasat Hussain. Brain Tumor Detection using Artificial Neural Networks: A Simple and Fast Approach for Early Diagnosis. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-29 Cell and Molecular Biology, Page#33.
4. Umaima Nadeem, Faisal Siddique, **Rais Ahmed**, Kashif Rahim, Abdul Moez Qureshi, Santosh Kumar and Firasat Hussain. Use Of Crispr-Cas in Genetic Modification of Rabies Virus. 43rd Pakistan Congress of

Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-30 Cell and Molecular Biology, Page#34.

5. Abdul Moez Qureshi, Faisal Siddique, **Rais Ahmed**, Hamid Majeed, Kashif Rahim, Santosh Kumar and Firasat Hussain. The Potential of Lemongrass Essential Oil Nanoemulsion in Resistance Modulation of Milk Derived Staphylococcus Aureus. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-80 Microbiology, Page#69
6. Areesha Sagheer, Muhammad Mazhar Ayaz, Faisal Siddique, **Rais Ahmed**, Muhammad Adeel Hassan, Kashif Rahim, Santosh Kumar and Firasat Hussain. Quantitative Bacteriological Analysis and Antibiotic Resistance Characterization in Powdered Infant Milks (PIFMS). 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-81 Microbiology, Page#69.
7. Arooj Fatima, Firasat Hussain, Muhammad Mazhar Ayaz, **Rais Ahmed**, Faiz-ul-Hassan, Omer Naseer and Faisal Siddique. Genomic Epidemiology and Contamination Colistin-Resistant Klebsiella Pneumoniae's Development in Livestock and Possible Zoonotic Transmission. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-82 Microbiology, Page#70.
8. Duaa Hayat, Firasat Hussain, Muhammad Mazhar Ayaz, Faisal Siddique, Omer Naseer and **Rais Ahmed**. Development and Assessment of an Inactivated Vaccine for Controlling Lympho Disease in Small Ruminants. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-83 Microbiology, Page#71.
9. Iqra Naeem, Firasat Hussain, Muhammad Mazhar Ayaz, **Rais Ahmed**, Faiz-ul-Hassan and Faisal Siddique. Microbiome-Targeted Interventions for Preventing Zoonotic Disease Transmission in Animal Populations. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-85 Microbiology, Page#72.
10. Maria Nazir, Firasat Hussain, Muhammad Mazhar Ayaz, Faisal Siddique, Abdullah Saghir Ahmad and **Rais Ahmed**. Molecular Profiling of Corynebacterium Pseudotuberculosis Isolates and Virulence Factors Associated with Caseous Lymphadenitis in Bahawalpur. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-86 Microbiology, Page#73.
11. Momina Malik, Muhammad Mazhar Ayaz, Faisal Siddique, **Rais Ahmed**, Kashif Rahim, Santosh Kumar and Firasat Hussain. Epigenetic Reprogramming of Immune Cells by Epstein-Barr Virus—A Novel Approach. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-87 Microbiology, Page#73.
12. Muhammad Adnan, Firasat Hussain, Muhammad Mazhar Ayaz, Faisal Siddique, Abdullah Saghir Ahmad and **Rais Ahmed**. Comparative Efficacy of Alum-Based Adjuvanted Vaccine of Corynebacterium Pseudotuberculosis in Small Ruminants. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-88 Microbiology, Page#74.
13. Munaza Rasheed, Muhammad Mazhar Ayaz, Faisal Siddique, **Rais Ahmed**, Muhammad Adeel Hassan, Kashif Rahim, Santosh Kumar, Firasat Hussain. Biofilms in Pathogenesis: A Critical Component of New

- and Emerging Infectious Diseases. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-90 Microbiology, Page#75.
14. Shanza Habib, Firasat Hussain, **Rais Ahmed**, Faiz-ul-Hassan and Faisal Siddique. Determining the Ability of Thermostable Serine Protease Enzyme Isolated from *Bacillus Subtilis* from Cholistan Desert Bahawalpur. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-91 Microbiology, Page#76.
15. Um E Rubab Zahra, Firasat Hussain, **Rais Ahmed**, Faiz-ul-Hassan and Faisal Siddique. Prevalence of Avian Influenza H9 Viruses in Commercial Broilers in South Punjab, Pakistan. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-92 Microbiology, Page#77.
16. Urwa Gill, Firasat Hussain, Muhammad Mazhar Ayaz, **Rais Ahmed**, Faiz-ul-Hassan and Faisal Siddique. Investigating the Antimicrobial Potential of Essential Oil Against Multidrug Resistant Bacteria. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-93 Microbiology, Page#77.
17. Zarmish Habib, Muhammad Mazhar Ayaz, Faisal Siddique, **Rais Ahmed**, Kashif Rahim, Santosh Kumar and Firasat Hussain. Prevalence of *Trichophyton Verrucosum* Infection in Farm Animals of The Cholistan Desert of District Bahawalpur, Pakistan. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-94 Microbiology, Page#78.
18. Zarnisha Malik, Muhammad Mazhar Ayaz, Faisal Siddique, **Rais Ahmed**, Kashif Rahim, Santosh Kumar and Firasat Hussain. Response to Covid-19, Recent Developments, Challenges and a Way Out. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-95 Microbiology, Page#79.
19. Muhammad Hamza, Firasat Hussain, Muhammad Mazhar Ayaz, **Rais Ahmed**, Faiz-ul-Hassan and Faisal Siddique. Digestive Challenges for Vertebrate Animals: Microbial Diversity, Cardiorespiratory Coupling, and Dietary Specialization. 43rd Pakistan Congress of Zoology (International), **June 23-25, 2025**, Department of Zoology, University of Okara, Okara. Section: CBGP-125 Physiology, Page#100.
20. Propagation of Signal Transduction by ITAMs in Thymus-Independent Antigens. 2024. Adnan Afzal, **Rais Ahmed**, Duaa Hayat, Muhammad Rizwan Javed, Muhammad Saleem, Urwa Gill, Hafsa Munir, Maria Nazir, Mizna Javed. Abstract published in the Proceedings of the 2nd International Brain and Biomedicines Conference (IBBC-2024), May 8–9, 2024. Organized by the Department of Physiology, Government College University Faisalabad, Pakistan. Abstract Book, Page 120.
21. *Brucella* Infections: Bridging the Gap between Public Health and Veterinary Medicine. 2024. Zainab Saeed, **Rais Ahmed**, Adnan Afzal, Aiza Aqeel, Fatima Naeem, Muhammad Hussain Taqi. Abstract published in the Proceedings of the 2nd International Brain and Biomedicines Conference (IBBC-2024), May 8–9, 2024. Organized by the Department of Physiology, Government College University Faisalabad, Pakistan. Abstract Book, Page 123.
22. Harnessing Complement Activation: From Physiology to Therapeutic Potential. 2024. Maria Nazir, **Rais Ahmed**, Duaa Hayat, Maria Ahmad, Muhammad Amir Haneef, Muhammad Hussain Taqi. Abstract published in the Proceedings of the 2nd International Brain and Biomedicines Conference (IBBC-2024),

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23. Drug susceptibility against coagulase positive and coagulase negative *Staphylococci* isolated from goat milk. Shagufta Nighat, Amjad Islam Aqib, **Rais Ahmed**, Saba Sana, Muhammad Ameen Jamal, Muhammad Fakhar-e-Alam Kulyar. Oral presentation. Proceedings of the "International Conference on Dairy Animal Health Challenges" Organized by Faculty of Veterinary Science, University of Agriculture Faisalabad, Pakistan. 2018.
24. Slaughter house based seroprevalence of para-tuberculosis in cattle and buffaloes in Faisalabad-Pakistan. **Rais Ahmed**, Muhammad Khalid Mansoor, Iftikhar Hussain, Muhammad Saqib, Haleema Sadia*, Javed Muhammad and Amjad Islam Aqib, Asma Irshad⁵. Oral presentation. Proceedings of the "International Conference on Dairy Animal Health Challenges" Organized by Faculty of Veterinary Science, University of Agriculture Faisalabad, Pakistan. 2018.
25. Muhammad Asad Ali, Khushi Muhammad, Aftab Ahmad Anjum, Mansur-ud-Din Ahmad, Masood Rabbani, Muhammad Zubair Shabbir, Arfan Ahmad, Muhammad Nawaz, Muhammad Tasleem Ghor, Javed Muhammad, Haroon Rashid Chaudhry, Tariq Jamil, Muhammad Haisem, Tasmia Awan, **Rais Ahmed**, Bhushan M Jayarao. "Association of soil chemistry and other factors with spatially distributed Burkholderia mallei DNA in Punjab province, Pakistan". Proceedings of 2017 14th International Bhurban Conference on Applied Sciences & Technology (IBCAST) 220 Islamabad, Pakistan, 10th -14th January, 2017
26. Spatial distribution and phylogenetic analysis of soil borne *B. abortus* & *B. melitensis* in three districts of central Punjab-Pakistan. **Rais Ahmed**, Khushi Muhammad, Masood Rabbani, Muhammad Sarwar khan, Haleema Sadia, Muhammad Shahid and Bhushan M. Jayarao. Oral Presentation in International Conference on Solid State Physics (ICSSP-17), in the Department of Solid State Physics, University of the Punjab, Lahore-Pakistan
27. Mutational analysis of TP53 gene in breast cancer patients in Punjabi population and their demographic distribution. Haleema Sadia, Mukhtar Ullah, Amna Shafi, Zeeshan Javed, **Rais Ahmed**, Kausar Malik, Ahmad Nawaz and Saba Manzoor. Oral Presentation in International Conference on Solid State Physics (ICSSP-17), in the Department of Solid State Physics, University of the Punjab, Lahore-Pakistan

BOOK CHAPTERS

1. Tariq A, **Ahmed R**, Hussain F, Tariq I, Sarwar R, Tahir A, Amanat A, Farooq H, Qureshi AM and Munir H, **2025**. Immunological mechanisms of allograft rejection: Cellular and molecular insights. In: Abbas RZ, Akhtar T and Arshad J (eds), One Health in a Changing World: Climate, Disease, Policy, and Innovation. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 252-257.
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2. Hayat D, **Ahmed R**, Ahsan M, Munir H, Majid M, Ali AR, Rauf A, Qureshi RM, Farasat S and Pervaiz S, **2025**. Tumor surveillance by Nk cells and macrophages: Mechanisms and therapeutic potential. In: García-Rubio VG, Alvi MA, Saeed Z and Ahmad M (eds), Foundations of Holistic Healing: Complementary and Alternative Medicine. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 150-156. <https://doi.org/10.47278/book.HH/2025.155>
3. Tariq I, **Ahmed R**, Hussain F, Tariq A, Farooq H, Sarwar R, Tahir A, Sagheer A, Qureshi AM and Hassan MA, **2025**. Targeting tumors with monoclonal antibodies: advances in cancer treatment. In: García-Rubio VG, Alvi MA, Saeed Z and Ahmad M (eds), Foundations of Holistic Healing: Complementary and Alternative Medicine. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 11-16. <https://doi.org/10.47278/book.HH/2025.64>
4. Hayat D, **Ahmed R**, Zubair MR, Ali F, Sanaullah, Rauf A, Rehman SU, Gul S, Muslim J, and Adnan M, **2025**. Epidemiology and public health strategies against cholera: The role of climate change and antimicrobial resistance. In: Abbas RZ, Akhtar T and Arshad J (eds), One Health in a Changing World: Climate, Disease, Policy, and Innovation. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 319-326. <https://doi.org/10.47278/book.HH/2025.181>
5. Qureshi AM, **Ahmed R**, Munawar A, Rehman AU, Munir H, Ahmed M, Adnan M, Rana E, Shafiq A, Ahsan M and Haq A, 2024. Vaccine-based immune reactions in dairy cows. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), Complementary and Alternative Medicine: Immunization/Vaccinology. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 84-92. <https://doi.org/10.47278/book.CAM/2024.020>
6. Afzal A, **Ahmed R**, Shahzad U, Tariq A, Tariq, Naina SA, Akhtar N, Dilshad R, Wasiq S and Sultana S, 2024. Vaccine Based cytokines and their role in T cell proliferation. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), Complementary and Alternative Medicine: Immunization/Vaccinology. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 59-66. <https://doi.org/10.47278/book.CAM/2024.174>
7. Afzal A, **Ahmed R**, Gillani Q, Mehreen A, Kausar R, Usman M, Gill U, Munir H, Batool S and Taqi MH, 2024. Propagation of signal transduction by ITAMs in thymus-independent antigens. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), Complementary and Alternative Medicine: Immunization/Vaccinology. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 451-459. <https://doi.org/10.47278/book.CAM/2024.017>
8. Haneef MA, **Ahmed R**, Siddique F, Bibi S, Khan S, Iqbal MU, Asadullah, Batool S, Nazir M and Naeem F, 2024. Role of cell adhesion molecules in extravasation of lymphocytes in immunized animals. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), Complementary and Alternative Medicine: Immunization/Vaccinology. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 403-411. <https://doi.org/10.47278/book.CAM/2024.177>
9. Hayat D, **Ahmed R**, Siddique F, Nadeem U, Malik M, Nazir M, Naeem F, Haneef MA and Afzal A, 2024. Role of T-Helper cells in generating effective humoral immune response in vaccinated cows. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), Complement Altern Med, Unique Scientific Publishers, Faisalabad, Pakistan, Vol. x: 67-74. <https://doi.org/10.47278/book.CAM/2024.257>

10. Hayat D, **Ahmed R**, Qadir L, Riaz A, Ain QU, Arshad M, Gir R, Rafiq C, Latif S, Afzal A, Mukhtar M and Abbas S, 2024. Processing mechanism of vaccinal antigen in the host for production of effective immunity. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), *Complementary and Alternative Medicine: Immunization/Vaccinology*. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 75-83.
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11. Naeem F, **Ahmed R**, Naeem F, Aqeel A, Rehman SU, Hayat D, Nazir M, Haneef MA, Saeed Z and Aleem M, 2024. Role of complement proteins in phagocytosis of exogenous antigens. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), *Complementary and Alternative Medicine: Immunization/Vaccinology*. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 433-440.
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12. Nazir M, **Ahmed R**, Qureshi AM, Bibi S, Rauf A, Hameed A, Iqbal F, Ahmed A, Hayat D and Saeed Z, 2024. Biological effects of complement activation in vaccinated dairy cows. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), *Complementary and Alternative Medicine: Immunization/Vaccinology*. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 93-102.
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13. Nazir M, **Ahmed R**, Aslam HB, Ahmed M, Hameed A, Kashif M, Shahzadi W, Siddique S, Zahoor UB, Mukhtar M and Prince K, 2024. Use of recombinant vectors as vaccine in dairy animals. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), *Complementary and Alternative Medicine: Immunization/Vaccinology*. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 160-169.
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14. Saeed Z, **Ahmed R**, Aqeel A, Abdullah M, Taqi MH, Rasheed M, Kazim M, Nazir M, and Naeem F, 2024. Immuno-evasion mechanism of *Brucella abortus* in dairy cows. In: Alvi MA, Rashid M, Zafar MA, Mughal MAS and Toor SI (eds), *Complementary and Alternative Medicine: Immunization/Vaccinology*. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 421-432.
<https://doi.org/10.47278/book.CAM/2024.018>
15. Cross-Species Transmission of Viral Zoonoses: Threats to Animal and Human Health. 2025. Malik M, **R Ahmed**, FT Zahra, A Rehman & A Zahid. *Biological Times*. 2025. November 4(11): 14-15.
16. The Silent Return: Re-emergence of Bacterial Zoonoses in the Anthropocene. 2025. Malik M, **R Ahmed**, U Nadeem, R Mushtaq & Z Malik. *Biological Times*. 2025. November 4(11): 10-11.
17. Amjad Islam Aqib, Muhammad Ijaz, Muhammad Shoaib, Iqra Muzammil, Hafiz Iftikhar Hussain, Tean Zaheer, **Rais Ahmed**, Iqra Sarwar, Yasir Razzaq Khan and Muhammad Aamir Naseer. *Staphylococcus aureus* and Dairy Udder. *Insights In to Drug Resistance in Staphylococcus aureus*. 2021 Feb 17:123

Awards & Honours/Professional Trainings:

1. Received a **Certificate of Appreciation** for participation in the *One-Day Workshop on Developing Evidence-Based Policy Guidelines for Sustainable Control of Brucellosis in Pakistan* held on November 12, 2024, organized by the Department of Pathobiology, Faculty of Veterinary Sciences, Bahauddin Zakariya University, Multan, Pakistan.
2. Received a **Certificate of Gratitude** as **Guest Trainer** on “One Day Hands-on Training on Biostatistics” on February 14, 2024

3. Received a **Certificate of Participation** in one day seminar titled “Assessment of Desert Ecosystem Through Animals” on March 01, 2024.
4. Received a **Certificate of Appreciation** as **Judge** in Model Competition held under Awareness activities of Research Project titles “Amelioration of camel udder health through mastitis vaccine and novel antimicrobial combination” under NRPU Project HEC-20-16147 held in Department of Medicine CUVAS dated 13-05-2024.
5. On February 16, 2024, I organized a seminar titled "*Caseous Lymphadenitis in Small Ruminants: Awareness and Preventive Measures*" as **Principal Investigator** of the HEC NRPU-funded project "*Development of Vaccine against Lympho Disease in Small Ruminants*" (Project #14949). The seminar aimed to enhance understanding of caseous lymphadenitis, emphasizing its impact, preventive strategies, and advancements in vaccine development, fostering collaboration among researchers, veterinarians, and industry stakeholders.
6. I am honored to have received a **Certificate of Appreciation** for my role as the **editor of the book** titled "*Complementary and Alternative Medicine*", published by Unique Scientific Publishers. The book has been indexed by CABI and was officially published on November 11, 2024. This recognition is a testament to the collaborative efforts of all contributors and highlights the importance of advancing knowledge in the field of complementary and alternative medicine.
7. Member “Board of Studies”, Department of Microbiology, CUVAS Bahawalpur.
8. HEC Approved PhD Supervisor, w.e.f. 30-04-2019 till date.
9. Member of a committee on “Voluntary Telemedicine Experts” w.e.f. 23-07-2020 till date.
10. Working as Expert for Board of Studies for the subject of Microbiology in Faculty of Veterinary and Animal Sciences, The Islamia University of Bahawalpur (No. 1324/DOA/dated 03-11-23 till date).
11. Working as member of Board of Studies in Faculty of Veterinary and Animal Sciences, The Islamia University of Bahawalpur (No. 1325/DOA/dated 03-11-23 till date).
12. Member departmental research committee, Department of Microbiology, IUB, for a period of three years (Letter # MICRO-1/2024-251, dated 22-08-2024).
13. Working as member of Technical Committee in the project entitled as “*Development of Indigenous recombinant human adenovirus-5 based vector vaccine against SARS-CoV-2 and its emergent variants*”. (No. Regr/Admin/317, dated 28-03-2023).
14. Working as member of Procurement Committee in the project entitled as “*Amelioration of camel udder health through mastitis vaccine and novel antimicrobial combinations*”. (No. Regr/Admin/627, dated 27-07-2023).
15. Member of university development office (UDO) of CUVAS letter No. Regr/Admin/1269 dated 06-11-2024.
16. Nominated for one day workshop on developing evidence- based policy guidelines for sustainable control of Brucellosis in Pakistan letter No. Regr/Admin/1274 dated 07-11-2024.
17. Nominated as focal person for Dengue Control Activities in CUVAS letter No. 2168 dated 30-09-2024
18. Permanently Registered Veterinary Medical practitioner (RVMP) with Pakistan Veterinary Medical Council (PVMC) license # 4865 (lifelong registration).

19. Registered Veterinary Medical Faculty (RVMF) with Pakistan Veterinary Medical Council (PVMC) code # 629.
20. English proficiency letter awarded from University of Veterinary and Animal Sciences, Lahore
21. Awarded a laptop under Chief Minister Shahbaz shareef youth initiative program
22. Awarded International Research Support Initiative Program under Higher Education Commission of Pakistan.
23. Member of American Society of Microbiology
24. Member of Board of Studies, Department of Microbiology, CUVAS Bahawalpur
25. Tutor, Ahmed Shah Abdali Group, CUVAS Bahawalpur
26. Hands-On Training Introduction to Rodents, Procedure Documentation, Rodent Behavior, Illness Recognition, Handling/Restraint, Sharps Safety and Euthanasia. 23th May, 2017. Center for Animal Resources and Education (CARE), Cornell University, Ithaca New York, U.S.A.
27. Hands on Training on Real Time PCR. 17th -18th September, 2014. Quality Operations laboratory (QOL), University of Veterinary and Animal Sciences, Lahore.
28. ENDNOTE & INFORMATICS. 28th-29th May, 2015. Department of Parasitology. University of Veterinary and Animal Sciences, Lahore.
29. COMPLEMENT FIXATION TEST. 9-10 April, 2014. Department of Microbiology. University of Veterinary and Animal sciences, Lahore.
30. Protein Profiling of Mycoplasma Gallisepticum using SDS-PAGE. 23th-25th September, 2014. Department of Microbiology. University of Veterinary and Animal sciences, Lahore.
31. Internship Certificate. Faculty of Veterinary Science. University of Agriculture, Faisalabad.
32. Character Certificate. Faculty of Veterinary Science. University of Agriculture, Faisalabad.
33. Hands-On Practical Training on Tools used for Next Generation Sequencing based Microbiome and Sequencing Data Analysis. 14th -15th December, 2016. CRDF-Funded International Collaborative Research Project. Quality Operations laboratory (QOL), University of Veterinary and Animal Sciences, Lahore.
34. International Conference on Livestock Genomics (ICLG). 30th -31th May, 2016. Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore.
35. Hands-On Training on Macrophage Isolation from Mice. 20th April, 2016. Department of Physiology, University of Veterinary and Animal Sciences, Lahore.
36. ELISA Based Diagnosis of Bovine Brucellosis. 19th -20th September, 2014. Department of Microbiology. University of Veterinary and Animal sciences, Lahore.

Administrative Tasks

1. Working as ***Additional Director ORIC***, CUVAS (No. Regr/Admin/862, dated 24-06-2026 till date)
2. Working as member of Admission Committee, CUVAS (No. Regr/Admin/618, dated 21-05-2026 till date)
3. Working as ***Associate Editor*** in Cholistan Journal of Veterinary and Animal Sciences, CUVAS (No. Regr/Admin/639, dated 23-05-2026 till date)

4. Worked as Deputy Director Student Affairs CUVAS.
5. Working as Incharge undergraduate lab-2 (Immunology lab) and PG lab-2 in Department of Microbiology, Faculty of Veterinary Science (Letter No. MICRO-384, w.e.f. 17-01-2023 till date).
6. Member “Board of Studies”, Department of Microbiology, CUVAS Bahawalpur.
7. HEC Approved PhD Supervisor, w.e.f. 28-11-2022 till date.
8. Member departmental research committee, Department of Microbiology, The Islamia University of Bahawalpur (IUB), (Letter # MICRO-1/2025-325, dated 07-10-2025).
9. Member of university development office (UDO) of CUVAS letter No. Regr/Admin/1269 dated 06-11-2024 till date.
10. Working as Expert for Board of Studies for the subject of Microbiology in Faculty of Veterinary and Animal Sciences, The Islamia University of Bahawalpur (No. 1324/DOA/dated 03-11-23).
11. Working as member of Board of Studies in Faculty of Veterinary and Animal Sciences, The Islamia University of Bahawalpur (No. 1325/DOA/dated 03-11-23).
12. Working as member of Technical Committee in the project entitled as “*Development of Indigenous recombinant human adenovirus-5 based vector vaccine against SARS-CoV-2 and its emergent variants*”. (No. Regr/Admin/317, dated 28-03-2023).
13. Working as member of Procurement Committee in the project entitled as “*Amelioration of camel udder health through mastitis vaccine and novel antimicrobial combinations*”. (No. Regr/Admin/627, dated 27-07-2023).
14. Worked as external examiner for the evaluation of M. Phil theses in the discipline of Microbiology, Faculty of Veterinary and Animal Sciences, The Islamia University of Bahawalpur (No. 176/AS&R, 175/AS&R, No. 170/AS&R dated 15-06-2023).
15. Worked as external examiner for the evaluation of M. Phil thesis in the discipline of Microbiology in the Institute of Microbiology, University of Veterinary and Animal Sciences, Lahore (No. CE/133/2023, dated 18-08-2023).

M. Phil/PhD Students Supervised

A. Research and Thesis Supervision (Supervisor):

1. Supervised M. Phil student **Ms. Fatima Naeem (Reg. No. 23-CUVAS-0054)** on research focusing on “In vitro evaluation of medicinal plant-based remedies for caseous lymphadenitis using an animal model”.
2. Supervised M. Phil student **Ms. Duaa Hayat (Reg. No. 2019-CU-MICRO-093)** on research focusing on “Preparation and evaluation of inactivated vaccine against lympho disease in small ruminants”
3. Supervised M. Phil student **Mr. M. Adnan (Reg. No. 2019-CU-MICRO-019)** on research focusing on “Comparative efficacy of inactivated and toxoid vaccine of *Corynebacterium pseudotuberculosis* in small ruminants”
4. Supervised M. Phil student **Mr. Abdur Rauf (Reg. No. 22-CUVAS-0036)** on research focusing on “Molecular characterization of *Pseudomonas aeruginosa* isolated from surgical infections in postoperative patients in Bahawal Victoria Hospital, Bahawalpur”
5. Supervised M. Phil student **Mr. Amir Haneef (Reg. No. 23-CUVAS-0052)** on research focusing on “Antibacterial Activity of traditional herbal extracts against *Corynebacterium Pseudotuberculosis*”

6. Supervised M. Phil student **Ms. Maria Nazir (Reg. No. 23-CUVAS-0007)** on research focusing on “Molecular characterization of corynebacterium pseudotuberculosis isolates from small ruminants of district bahawalpur’
7. Supervised M. Phil student **Mr. M. Kashif (Reg. No. 21-CUVAS-0140)** on research focusing on “Antibacterial Activity of Curcuma Longa and Calotropis Procera against Corynebacterium Pseudotuberculosis”
8. Supervised M. Phil student **Ms. Uraiza Noor (Reg. No. 21-CUVAS-0051)** on research focusing on “Prevalance and Antibigram of Staphylococcus Aureus and Eschericia Coli at One Health interface’
9. Supervised M. Phil student **Ms. Attiya Nawaz (Reg. No.)** on research focusing on “Evaluation of Antibacterial potential of Nanopartical coupled antibiotics against mixed culture bacteria”

B. Research and Thesis Supervision (Major Member):

10. Supervised M. Phil student **Ms. Ieman Tariq (Reg. No. 2019-CU-MICRO-086)** on research focusing on “Seroprevlance and molecular detection of fowl cholera in indiginous and commercial pouly birds inrular areas of bahawalpur, Pakistan”
11. Supervised M. Phil student **Ms. Ayesha Tariq (Reg. No. 2019-CU-MICRO-087)** on research focusing on “Spatial epidemiology of chicken anemia virus and haemoparasites in indiginous exotic poultry breeds of bahawalpur, Pakistan”
12. Supervised M. Phil student **Ms. Iqra Naeem (Reg. No. 2019-CU-MICRO-051)** on research focusing on “Determining the antibacterial effect of clove and cinnamon essential oils, nano-zinc oxide and their combinations against Campylobacter jejuni”
13. Supervised M. Phil student **Mr. M. Abdullah (Reg. No. 23-CUVAS-0046)** on research focusing on “Evaluating the Anti-methanogenic activity of Angelica archangelica via In Silico methyl coenzyme M Reductase (MCR) Protein targetting an in vitro antimicrobial assay”
14. Supervised M. Phil student **Ms. Munaza Rasheed (Reg. No. 2019-CU-MICRO-098)** on research focusing on “Seroprevlance and molecular characterization of pollorum disease in indiginous poultry birds in District Bahawalpur”
15. Supervised M. Phil student **Ms. Ume Rubaba Zahra (Reg. No. 2023-CUVAS-0061)** on research focusing on “Determination of the surveillance of swine flue in tertiary care hospital bahawalpur”
16. Supervised M. Phil student **Ms. Urwa Gill (Reg. No. 2019-CU-MICRO-104)** on research focusing on “Molecular Characterization of multidrug resistant Yersinia enterocolitica and evaluation of mustard oil nanoemulsion as an antibacterial agent”
17. Supervised M. Phil student **Ms. Shahanaz (Reg. No. 21-CUVAS-0044)** on research focusing on “Comperative Efficacy of Castor Leaf Extract, Castor Oil and Silver nanoparticles against different pathogenic bacteria”
18. Supervised M. Phil student **Ms. Shanza Habib (Reg. No. 23-CUVAS-0057)** on research focusing on “Isolation and Biochemical Characterization of Subtilisin from Bacillus subtilis isolated from agricultural soil”

C. Research and Thesis Supervision (Minor Member):

19. Supervised M. Phil student **Mr. Muhammad Atif (Reg. No. 2019-CU-MLT-045)** on research titled “Histopathological insights into urine fibroid types, immunohistochemical profiles and age-related dynamis”
20. Supervised M. Phil student **Ms. Farwa Sajid (Reg. No. 2019-CU-FOOD-019)** on research titled “Physicochemical characteristics and shelf stability of Dahi incorporated with Albedo and Flavedo powders from grapefruit”
21. Supervised M. Phil student **Ms. Faiza Naeem (Reg. No. 2019-CU-FOOD-046)** on research titled “Physicochemical characteristics and shelf stability of Dahi incorporated with Albedo and Flavedo powders from kenow fruit”

Note: references are available upon request