



Department of Microbiology

KOHSAR UNIVERSITY MURREE



Research and Community Contributions

The faculty of Microbiology is engaged in a variety of research projects endeavors, involving the local community in these activities outside the lab. Currently, the department of Microbiology focus on the major research areas in Microbiology including Microbiome Analysis, Environmental Microbial Load Managing, Cell and Tissue Culture Technology, Food and Water Investigation, and Nanotechnology.

Projects in Progress

1. Environmental (Soil) Microbiome Analysis
2. Role of Bacteriophage cocktail in meat preservation
3. Challenges of Stunted Growth-Understanding to Intervention Plans
4. Beyond the borders climate change & community engagement for diseases

MOUs and Industrial Linkages

	Theme	Signing Body
1.	Addressing intractable challenges-Managing the Waste & Feeding the World.	Dr. Akhter Hameed Khan Memorial Trust Rawalpindi - Pakistan
2.	An agreement for technical support and collaboration	University of Education, Lahore
3.	Research Collaboration and Faculty Exchange Program to Scale Up the Mutual Strength	University of Veterinary and Animal Sciences



Department of Microbiology

KOHSAR UNIVERSITY MURREE



Research Publications

1. Dr. Aftab Ahmad (Assistant Professor/HOD)

1. **Ahmad A**, Almsned F, Ghazal P, Saleet Jafri M, Bokhari H. (2020) Neuropeptide S receptor gene Asn107 polymorphism in obese male individuals in Pakistan PLoS ONE. 15(12):e0243205. <https://doi.org/10.1371/journal.pone.0243205>
(IF 3.752)
2. Morsi Y, Zhu T, **Ahmad A**, Xie X, Yu F, Mo X. Electrospinning: An emerging technology to construct polymer-based nanofibrous scaffolds for diabetic wound healing. *Frontiers of Materials Science*. 2021 February 11:1-26 <https://doi.org/10.1007/s11706-021-0540-1>
(IF 2.612)
3. Muhammad, S., Nazia, M., **Ahmad, A.**, Muhammad, S., Hamid, A., et al., "Evaluation of inflammatory cytokine and immunohistochemical analysis of cirrhotic liver from HCV patients". *Pakistan Journal of Zoology*. (2022).
(IF 0.687)
4. **Ahmad A**, Yang W, Chen G, Shafiq M, Javed S, Ali Zaidi SS, et al. (2019) Analysis of gut microbiota of obese individuals with type 2 diabetes and healthy individuals. PLoS ONE 14(12): e0226372. <https://doi.org/10.1371/journal.pone.0226372>
(IF 3.752)
5. Khan, R., Xiangyang, S., **Ahmad, A.** and Mo, X., 2018. Electrospinning of Crude Plant Extracts for Antibacterial and Wound Healing Applications: A Review. *SM J. Biomed. Eng*, 4(1), pp.1-8.
6. Saraf, V. S., Sheikh, S. A., **Ahmad, A.**, Gillevet, P. M., Bokhari, H., & Javed, S. (2021). Vaginal microbiome: normalcy vs dysbiosis. *Archives of Microbiology*, 1-10.
(IF 2.667)
7. Ahmed, H., Khan, M.R., Panadero-Fontan, R., Sandez, C.L., Mustafa, I., Ghani, A., Hussain, M., Asif, S., **Ahmad, A.**, Naqvi, S.M.S. and Qayyum, M., 2013. Prevalence of Bovine Hypodermosis in water buffalo (*Bubalus bubalis*) from Jhelum District, Pakistan. *Kafkas Univ Vet Fak Derg*, 19(1), pp.79-
8. Tariq H, Noreen Z, **Ahmad A**, khan L, Ali M, Malik M, Javed A, Rasheed F, Kocagoz T, Sezerman U, Bokhari H., (2022) Colibactin possessing E. coli isolates in association with colorectal cancer and their genetic diversity among Pakistani Population. PLOS ONE. <https://doi.org/10.1371/journal.pone.0262662>
(IF 3.752)
9. Donia A, Shahid FM, **Ahmad A**, Javed A, Nawaz M, Bokhari H., (2022) Integration of RT-LAMP and Microfluidic Technology for Detection of SARS-CoV-2 in Wastewater as an Advanced Point-of-care Platform" *Food and Environment Virology*. <https://doi.org/10.1007/s12560-022-09522-3>
(IF 4.034)

Submissions Under Review



Department of Microbiology

KOHSAR UNIVERSITY MURREE



10. Hanif M, **Ahmad A**, SA Muhammad, Mohamed T, Ali A, Irum S, Ahmed H Surveillance of Feline Calicivirus using serological tests and assessment of knowledge, associated risks, and practices among pet owners in Pakistan. ASM-2022-0350.
11. Shafiq M, **Ahmad A**, Khan N, Fatima A, Mujahid TA, Qazi R, Hyder Z. Second Line Anti-Retroviral Treatment Outcome in HIV Infected Patients Co-infected with Tuberculosis in Pakistan. ASM-2022-0358.
12. Arbab Saddiquea, **Aftab Ahmad**, Asima Azamb, Mashal Naema, Habib Bokhari., 2021. A comparative study of Recovered and Deceased cases of COVID-19 in Rawalpindi, Pakistan. Journal of Medical Virology.
13. Noor Ul Ain Malik; **Aftab Ahmad**; Nazia Rehman; Zobia Noreen; Nasim Akhtar; Ramla Shahid; Aneela Javed; Habib Bokhari., 2021. Alteration of Immunomarkers and Relative Telomere Length in COVID-19 Patients. Pakistan Journal of Zoology.

2. Dr. Muhammad Adnan Shereen (Lecturer)

1. Luo Z, Liang Y, Tian M, Ruan Z, Su R, **Shereen MA**, Yin J, Wu K, Guo J, Zhang Q, Li Y, Wu J. Inhibition of PIKFYVE kinase interferes ESCRT pathway to suppress RNA virus replication. J Med Virol. 2023 Jan 25.
(IF: 20.7)
2. **Shereen M.A**, Bashir N, Su R, Liu F, Wu KL, Luo Z*, Wu JG*, 2021. Zika virus dysregulates the expression of astrocytic genes involved in neurodevelopment. PLOS Neglected Tropical Diseases 15(4): e0009362.
(IF: 4.78)
3. **Shereen M.A**, Bashir N, Khan M.A, Kazmi A, Khan S, Zhen L, Wu J. Covid-19 Management: Traditional Chinese Medicine Vs. Western Medicinal Antiviral Drugs, A Review and Meta-Analysis. Fresenius Environmental Bulletin, 30(5), Pp.5537-5549. 2021.
(IF: 0.61)
4. **Shereen, M.A.**, Khan, S., Kazmi, A., Bashir, N. and Siddique, R., 2020. COVID-19 infection: Emergence, transmission, and characteristics of human coronaviruses. Journal of advanced research, 24, pp.91-98.
(IF: 12.82)
5. Tian M.F, Liu W, Li X, Zhao P.Y, **Shereen M.A**, Zhu C, Huang S, Liu S, Yu X, Yue M, Pan P, Wang W, Li Y, Chen X, Wu K, Luo Z, Zhang Q, Wu J. HIF-1 α promotes SARS-COV-2 infection and aggravates inflammatory responses to COVID-19. Sig Transduct Target Ther 6, 308 (2021). <https://doi.org/10.1038/s41392-021-00726-w>
(IF: 38.10)
6. Zhu, C., Liu, W., Su, H., Li, S., **Shereen, M. A.**, Lv, Z., Niu, Z., Li, D., Liu, F., Luo, Z., & Xia, Y. (2020). Breastfeeding Risk from Detectable Severe Acute Respiratory Syndrome Coronavirus 2 in Breastmilk. The Journal of infection, 81(3), 452–482.
(IF: 38.63)



Department of Microbiology

KOHSAR UNIVERSITY MURREE



7. Yang, Y., Liu, W., Hu, D., Su, R., Ji, M., Huang, Y., **Shereen, M.A.**, Xu, X., Luo, Z., Zhang, Q. and Liu, F., 2020. HIV-1 Nef Interacts with LMP7 To Attenuate Immunoproteasome Formation and Major Histocompatibility Complex Class I Antigen Presentation. *Mbio*, 11(5).
(IF: 7.78)
8. Luo Z, Zhu C, Ruan Z, Cui X, **Shereen MA**, Pan P, Huang J, Wang F, Su H, Xia Y, Wu J. Longitudinal Characterization of Cytokine Overproduction: A Case Report in Critically Ill COVID-19 Patients with Hyperinflammation in Bronchoalveolar Lavage. *Frontiers in Medicine*. 2021;8.
(IF: 5.09)
9. Pan P, Li G, Shen M, Yu Z, Ge W, Lao Z, Fan Y, Chen K, Ding Z, Wang W, Wan P, **Shereen MA**, Luo Z, Chen X, Zhang Q, Lin L, Wu J. DENV NS1 and MMP-9 cooperate to induce vascular leakage by altering endothelial cell adhesion and tight junction. *PLoS Pathog*. 2021 Jul 26;17(7): e1008603
(IF: 7.46)
10. Hu D, Wang Y, Li A, Li Q, Wu C, **Shereen MA**, Huang S, Wu K, Zhu Y, Wang W, Wu J. LAMR1 restricts Zika virus infection by attenuating the envelope protein ubiquitination. *Virulence*. 2021 Dec;12(1):1795-1807.
(IF: 5.42)
11. Ullah, H., Sajid, M., Kun, Y., Feng, J., He, M., **Shereen, M.A.**, Li, Q., Xu, T., Hao, R., Deyin, G. and Chen, Y., 2021. Antiviral activity of Interferon alpha-inducible protein 27 against Hepatitis B virus gene expression and replication. *Frontiers in Microbiology*, 12, p.552.
(IF: 6.06)
12. Sajid, M., Ullah, H., Yan, K., He, M., Feng, J., **Shereen, M.A.**, Hao, R., Li, Q., Guo, D., Chen, Y. and Zhou, L., 2021. The Functional and Antiviral Activity of Interferon Alpha-Inducible IFI6 Against Hepatitis B Virus Replication and Gene Expression. *Frontiers in Immunology*, 12, p.1028.
(IF: 8.78)
13. Khan S, Siddique R, Huanfei D, **Shereen MA**, Nabi G, Bai Q, Manan S, Xue M, Ullah MW, Bowen H. Perspective applications and associated challenges of using nanocellulose in treating bone-related diseases. *Frontiers in Bioengineering and Biotechnology*. 2021 May 7; 9:350.
(IF: 6.06)
14. Su, R., **Shereen, M.A.**, Zeng, X., Liang, Y., Li, W., Ruan, Z., Li, Y., Liu, W., Liu, Y., Wu, K. and Luo, Z., 2020. The TLR3/IRF1/Type III IFN Axis Facilitates Antiviral Responses against Enterovirus Infections in the Intestine. *Mbio*, 11(6).
(IF: 7.78)
15. Tian, M., Liu, W., Zhang, Q., Huang, Y., Li, W., Wang, W., Zhao, P., Huang, S., Song, Y., **Shereen, M.A.** and Qin, M., 2020. MYSM1 Represses Innate Immunity and Autoimmunity through Suppressing the cGAS-STING Pathway. *Cell Reports*, 33(3), p.108297.
(IF: 9.99)
16. Duan, P., Khan, S., Ali, N., **Shereen, M.A.**, Siddique, R., Ali, B., Iqbal, H.M., Nabi, G., Sajjad, W. and Bilal, M., 2020. Biotransformation fate and sustainable mitigation of a potentially toxic element of mercury from environmental matrices. *Arabian Journal of Chemistry*, 13, pp.6949-6965.
(IF: 6.21)
17. Khan, S., Siddique, R., **Shereen, M.A.**, Ali, A., Liu, J., Bai, Q., Bashir, N. and Xue, M., 2020. Emergence of a novel coronavirus, severe acute respiratory syndrome coronavirus 2: biology and therapeutic options. *Journal of clinical microbiology*, 58(5).
(IF: 11.67)



Department of Microbiology

KOHSAR UNIVERSITY MURREE



18. Khan, S., Siddique, R., Li, H., Ali, A., **Shereen, M. A.**, Bashir, N., & Xue, M. (2020). Impact of coronavirus outbreak on psychological health. *Journal of Global Health*, 10(1).
(IF: 7.66)
19. Khan, S., Siddique, R., Ali, A., Bai, Q., Li, Z., Li, H., **Shereen, M.A.**, Xue, M. and Nabi, G., 2020. The spread of novel coronavirus has created an alarming situation worldwide. *Journal of infection and public health*, 13(4), p.469.
(IF: 7.53)
20. Wang, W., Hu, D., Feng, Y., Wu, C., Li, A., Wang, Y., Cheng, K., Tian, M., Xiao, F., Zhang, Q. and **Shereen, M.A.**, 2020. STING promotes NLRP3 localization in ER and facilitates NLRP3 deubiquitination to activate the inflammasome upon HSV-1 infection. *PLoS pathogens*, 16(3), p.e1008335.
(IF: 7.46)
21. Khan, S., Nabi, G., Han, G., Siddique, R., Lian, S., Shi, H., Bashir, N., Ali, A. and **Shereen, M.A.**, 2020. Novel coronavirus: how things are in Wuhan. *Clinical Microbiology and Infection*, 26(4), p.399.
(IF: 13.31)
22. Liu, R., Liu, X., Yuan, L., Han, H., **Shereen, M.A.**, Zhen, J., Niu, Z., Li, D., Liu, F., Wu, K. and Luo, Z., 2020. Analysis of adjunctive serological detection to nucleic acid test for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection diagnosis. *International immunopharmacology*, 86, p.106746.
(IF: 5.71)
23. Siddique, R., Bai, Q., **Shereen, M.A.**, Nabi, G., Han, G., Rashid, F., Ahmed, S., Benzhanova, A., Xue, M. and Khan, S., 2020. Evidence and speculations: vaccines and therapeutic options for COVID-19 pandemic. *Human Vaccines & Immunotherapeutics*, pp.1-9.
(IF: 4.52)
24. Luo Z, Su R, Wang W, Liang Y, Zeng X, **Shereen MA**, et al. (2019) EV71 infection induces neurodegeneration via activating TLR7 signalling and IL-6 production. *PLoS Pathog* 15(11): e1008142.
(IF: 7.46)
25. Luyao S, Wenbiao W, Aixin i, Pinan, Weiyong L, **Shereen MA**, et al. (2019). SUMO1 SUMOylates and SENP3 DeSUMOylates NLRP3 to Orchestrate the Inflammasome Activation. *FASEB journal*, SSRN Electronic Journal, DOI: 10.2139/ssrn.3275284.
(IF: 5.83)
26. Pan P, Zhang Q, Liu W, Wang W, Yu Z, Lao Z, Zhang W, Shen M, Wan P, Xiao F, **Shereen MA**, Zhang W, Tan Q, Liu Y, Liu X, Wu K, Liu Y, Li Gand Wu J (2019) Dengue Virus Infection Activates Interleukin-1 β to Induce Tissue Injury and Vascular Leakage. *Front. Microbiol.* 10:2637
(IF: 6.06)
27. Khokhar M, **Shereen MA**, Khan M, Khan RU, Sohail A, Khan IU, Khan IU, Khattak S. In vitro efficacy of polymer coated miltefosine drug against leishmania tropica. *Journal of Parasitic Diseases*. 2021 Sep 23:1-1.
(IF: 1.4)
28. Huang, S.; Wan, P.; Huang, S.; Xiang, Q.; Yang, G.; **Shereen, M.A.**; Pan, P.; Liu, W.; Wu, K.; Wu, J. Anapc10 Orchestrates the NLRP3 Inflammasome Activation during Cell Cycle Control. *FEBS Letter*. 2021 Oct;595(19):2463-2478..
(IF: 3.86)



Department of Microbiology

KOHSAR UNIVERSITY MURREE



29. Shereen, M. I., Shah, M., Siraj, S., Ali, M., Kazmi, A., & **Shereen, M. A.** (2020). Association of Vitamin D and its Receptor (VDR) Gene Single Nucleotide Polymorphism (ApaI and TaqI) with Risk of Psoriasis. *Annals of Jinnah Sindh Medical University*, 6(2), 37-43. (HEC recognized "Y"; ISSN: 2523-1316)
30. Asnad, Afridi M.T.I, Tahir M, **Shereen M.A.** 2014. Placebo-Controlled Trail of Pharmaceutical Optimized Lisinopril 10mg (F-5) in Patients with Essential Hypertension for Efficacy and biochemical Evaluation. *Medical Forum*, vol. 25(12): 11-14. (HEC recognized "Y"; Switzerland, ISSN: 1029-385X)
31. Afridi M.T.I, Chaudary I.A, Shereen M.I, Asnad, **Shereen M.A.** 2014. Outcome of Internal Fixation of Fractures in a Tertiary Care Hospital Peshawar. *Medical Forum*, vol. 25(12): 172-176. (HEC recognized "Y"; Switzerland, ISSN: 1029-385X)
32. **Shereen, M.A.**, Ullah, H., Khan, S., Bashir, N., Kazmi, A., Saif, K. and Qudus, M.S., 2020. COVID-19 around the world and the Chinese strategy to cope with SARS-CoV-2. *Biomedical Research and Therapy*, 7(7), pp.3890-3897.
33. **Shereen, M.A.** and Kazmi, A., 2020. SARS-CoV-2 pandemic: causes and current situation, historical lessons, and strategical therapeutic interventions. *Biomedical Research and Therapy*, 7(5), pp.3807-3812.
34. Bashir, N., **Shereen, M. A.**, Kazmi, A., Sajid, M., & Ullah, H. (2020). A retrospective analysis of pyogenic liver abscess and antibiotic resistivity of common pathogens in Peshawar. *Biomedical Research and Therapy*, 7(12), 4190-4196.

Articles Accepted/Under Review

1. Biodegradation of Polystyrene (PS) by newly isolated fungus *Aspergillus terreus* strain NA2: An insight into the biotechnological potential of the strain from soil (**Accepted in Polymers**)
2. The Biotechnological Potential of *Phanerochaete chrysosporium* NA3 for Polystyrene (PS) Degradation (**Revision Submitted in Journal of Fungi**)
3. Docking of Velpatasvir to the SARS-CoV-2 Viral Spike Protein-Human ACE2 Complex: repurposing for COVID-19 (**Under review**)
4. Second Line Anti-Retroviral Treatment Outcome in HIV Infected Patients Co-infected with Tuberculosis in Pakistan (**Revision**)
5. Updates on measles incidence and eradication: Emphasis on the immunological aspects of measles infection (**Under Review**).
6. Simple Non-invasive Models for the Prediction of Compensated Cirrhosis in Chronic Hepatitis C Patients (**Under Review**)
7. Molecular detection and S1 gene based phylogenetic analysis of field isolates of infectious bronchitis virus (IBV) from various regions of Pakistan (**Under Review**).

3. Dr. Sadia Mehmood Satti

1. **SATTI, S.M.**; CASTRO-AGUIRRE, E.; SHAH, A.A.; MARSH, T.L.; AURAS, R. (2021). Genome Annotation of Poly (lactic acid) Degrading *Pseudomonas aeruginosa*, *Sphingobacterium* sp. and *Geobacillus* sp. *international journal of molecular sciences*. 22, 7385.

(IF 5.9)



Department of Microbiology

KOHSAR UNIVERSITY MURREE



2. **SATTI, S. M., & SHAH, A. A. (2020).** Polyester-based biodegradable plastics: an approach towards sustainable development. *Letters in Applied Microbiology*, 70(6), 413430.
(IF 2.2)
3. **SATTI, S. M., SHAH, Z., LUQMAN, A., HASAN, F., OSMAN, M., & SHAH, A. A. (2020).** Biodegradation of Poly (3-hydroxybutyrate) and Poly (3-hydroxybutyrate-co-3hydroxyvalerate) by Newly Isolated *Penicillium oxalicum* SS2 in Soil Microcosms and Partial Characterization of Extracellular Depolymerase. *Current microbiology*.
(IF 1.7)
4. **SATTI, S.M., NOOR, H., UD DIN, S., FARMAN, M., HASAN, F., KHAN, S., BADSHAH, M. AND SHAH, A.A., 2020.** Insight on esterase from *Pseudomonas aeruginosa* strain S3 that depolymerize poly (lactic acid) (PLA) at ambient temperature. *Polymer Degradation and Stability*, p.109096.
(IF 4.5)
5. **SATTI, S. M., ABBASI, A., KHAN, S., RANA, Q., MARSH, T. L., AURAS, R., HASSAN, F., BADSHH M. & SHAH, A. A., 2019** Statistical Optimization of Lipase Production from *Sphingobacterium* sp. Strain S2 and Evaluation of Enzymatic Depolymerization of Poly (lactic acid) at Mesophilic Temperature. (*Polymer degradation and stability* doi 10.1016/j.polymdegradstab.2018.11.030)
(IF 4.5)
6. **SATTI, S. M., SHAH, A. A., MARSH, T. L. & AURAS, R. 2018.** Biodegradation of Poly (lactic acid) in Soil Microcosms at Ambient Temperature: Evaluation of Natural Attenuation, Bio-augmentation and Biostimulation. *Journal of Polymers and the Environment*, 1-10.
(IF 2.6)
7. **SATTI, S. M., SHAH, A. A., AURAS, R. & MARSH, T. L. 2017.** Isolation and characterization of bacteria capable of degrading poly (lactic acid) at ambient temperature. *Polymer Degradation and Stability*, 144, 392–400. DOI 10.1016/j.polymdegradstab.2017.08.023)
(IF 4.5)
8. **OSMAN, M., SATTI, S. M., LUQMAN, A., HASAN, F., SHAH, Z. & SHAH, A. A. 2017.** Degradation of Polyester Polyurethane by *Aspergillus* sp. Strain S45 Isolated from Soil. *Journal of Polymers and the Environment*. (DOI 10.1007/s10924-017-0954-0)
(IF 2.6)
9. **SATTI, S. M., SHAH, A. A., AURAS, R., & MARSH, T. L. (2019).** Genome annotation of Poly (lactic acid) degrading *Pseudomonas aeruginosa* and *Sphingobacterium* sp. bioRxiv, 609883