Prof. Dr. Syed Kashif Haleem

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Faculty of Biological and Health Sciences
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PERSONAL INFORMATION

Last Name:	Haleem
Fore Names:	Syed Kashif
Nationality:	Pakistani
Date of Birth:	29-07-1984
Place of birth:	Mansehra, Pakistan
Postal Address:	Department of Microbiology, Academic Block 9, Second Floor, Hazara University, Mansehra, Pakistan.

BRIEF INTRODUCTION

I completed my Doctorate in **Microbiology and Immunology** from the Department of Infection, Immunity, and Inflammation at the University of Leicester, UK in 2012. Prior to that, I had graduated from Hazara University in Mansehra, Pakistan in 2005, specializing in Microbiology. Following the completion of my doctoral studies, I returned to my alma mater and joined the Department of Microbiology as a Lecturer. Through dedication and hard work, I steadily progressed in my academic career. In 2016, I was promoted to the position of Assistant Professor and further advanced to become Associate Professor in University in 2022 and Professor in 2024. Throughout my tenure at the university, I actively contributed to the growth and development of the Department of Microbiology. From 2018 to 2021, I had the honor of serving as the Head of the Department, assuming the responsibility of leading and guiding a team of esteemed faculty members and aspiring students. Currently, I am serving as Chairman Microbiology since April 2024.

During my PhD, I successfully investigated the role of the lectin pathway recognition molecule, ficolin-A, in fighting pneumococcal infection, using a mouse model of *Streptococcus pneumoniae*. I have been lucky enough during my PhD as my PhD research project was a part of MRC funded programme grant involving constant interactions with renowned immunologists and microbiologists as PI and Co-PIs like Prof Wilhelm Schwaeble, Prof. Russell Wallis, Prof. Peter Andrew and Professor Aras Kadioglu. Regular interactions with reputable scientists from diverse backgrounds refined my research skills in my field. Working along a high quality research team subsequently resulted in excellent PhD dissertation and earned me authorship/coauthourship in high impact journals like PLoS Pathogen, PNAS and Infection & Immunity. I have more than 40 research papers published in journals of international repute with cumulative impact factor 130 and 1275 citations with overall h-index 18. I also won a research project under National Research Program for Universities awarded by Higher Education Commission of Pakistan. I have a broad

command over different assays like ELISA, qPCR and FACS and vast experience of working with clinical and experimental animal models.

EDUCATION

PhD (Microbiology and Immunology) | University of Leicester (UK)
14/02/2008 to 12/07/2012
Title: Role of the lectin pathway recognition molecule ficolin-A in fighting pneumococcal infection

BSc Hons (Microbiology) | Hazara University Pakistan
03/2002 to 02/2006
A Grade

Higher Secondary School Certificate (Pre Med) | BISE Abbottabad
09/1999 to 09/2001
A Grade

Secondary School Certificate | BISE Abbottabad
06/1997 to 06/1999
A Grade

TEACHING/RESEARCH EXPERIENCE

Professor (Microbiology) (BPS-21) | Hazara University (Pakistan)
11/09/2024 – Till date

Associate Professor (BPS-20) | Hazara University (Pakistan)
05/08/2022 – 10/09/2024

Assistant Professor (BPS-19) | Hazara University (Pakistan)
15/01/2016 to 04/08/2022

Lecturer (BPS-18) | Hazara University (Pakistan)
05/05/2007 to 14/01/2016

Responsibilities:

- Prepare and deliver lectures, tutorials, seminars, and laboratory sessions in Microbiology and Immunology.
- Supervise research projects of M. Phil and Ph.D. students.
- Participate in curriculum revision, academic planning, and course development.
- Applying for research funding
- Executing research project won.

Research Assistant | University of Leicester (UK)
Jan 2012 – June 2012
Responsibility: Worked on MRC funded project of Professor Wilhelm Schwaeble at the Department of Infection & Immunity University of Leicester (UK).

Practical Demonstrator | University of Leicester (UK)
December 2008 – April 2012
Responsibility: Demonstrated practical sessions to undergraduate students in the Department of Infection, Immunity & Inflammation. University of Leicester

ADMINISTRATIVE EXPERIENCE

Chairman, Department of Microbiology, MLT and DPT | Hazara University (Pakistan)
29/04/2024 till date

Head of Microbiology Department | Hazara University (Pakistan)
02/03/2018 to 26/09/2018
19/09/2019 to 28/04/2021

Responsibilities:

- Provide administrative and academic leadership.
- Develop and enhance research and teaching laboratories.
- Lead curriculum revision and research topic approval at the postgraduate level.
- Launch market based programs
- Serve on various department and university committees.

KEY ADMINISTRATIVE ACHIEVEMENTS

- Serving as Chairman Department of Microbiology, MLT and DPT since April 2024 till date and Head of Microbiology Department between 2018-2021, showcasing strong organizational and administrative skills.
- Developed three research laboratories and a teaching lab to foster a cutting-edge research culture in the Microbiology Department of Hazara University.
- Led the team to establish an Animal House facility, enhancing in-vivo research capabilities for various university departments.
- Convened committees to update the curriculum and Scheme of Studies for BS, MPhil, and PhD programs in Microbiology and Medical Lab Technology Department, aligning them with current standards.
- Successfully launched the BS Medical Lab Technology Program as a discipline in the Microbiology Department, attracting a significant number of students.
- Successfully launched the Forensic Sciences Program from Fall 2025.
- Actively engaged in various department and university committees, such as the University Central Purchase Committee, Need Assessment Committee, Seminar Committees, Health Committee, and Undergraduate/Postgraduate Admission Committees.
- Serving as a member of the Postgraduate Entrance Test Committee at Hazara University.
- Led the Quick Response Team for COVID-19, ensuring the implementation of SOPs and monitoring diagnostic testing among faculty and students.

- Selected as member of member of Curriculum Review Committee by Higher Education Division of the Govt. of KP Province for Standardization and uniformization of BS Curriculum across Universities of KP Province.

RESEARCH GRANTS WON

- **Title:** Age-related variations in the activation of complement system against *Pseudomonas aeruginosa*
- **Grant Amount:** PKR 5.2 million
- **Grant Completion:** 2024
- **Key Findings:**
    1. Identification of C9 as the relevant recognition molecule for weak complement-mediated immunity against *Pseudomonas aeruginosa* in children
    2. Identification of Complement CL11 as the recognition molecule responsible for weak complement-mediated immunity against *Pseudomonas aeruginosa* in the elderly
    3. Identification of superior role of complement CL-11 against multi drug resistant strains of *Pseudomonas aeruginosa* in activating complement system

PUBLICATIONS

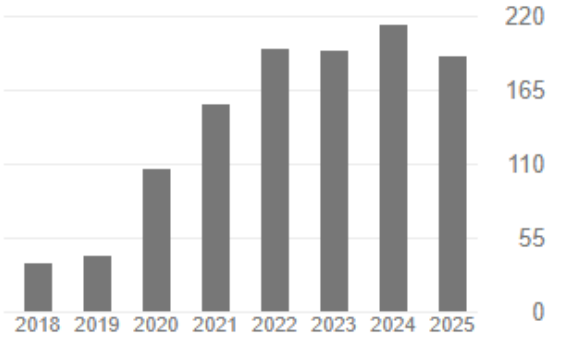
Total Impact Factor = 130

Number of Citations = 1275

h-index= 18

Google Scholar: https://scholar.google.com/citations?hl=en&user=LtjQWNEAAAAJ

	All	Since 2020
Citations	1277	1058
h-index	18	17
i10-index	25	25



Key Papers

1) Ali, Y. M., Lynch, N. J., **Haleem, K. S.**, Fujita, T., Endo, Y., Hansen, S., Holmskov, U., Takahashi, K., Stahl, G. L., Dudler, T., Girija, U. V., Wallis, R., Kadioglu, A., Stover, C. M., Andrew, P. W. & Schwaeble, W. J. (2012). The lectin pathway of complement activation is a critical component of the innate immune response to pneumococcal infection. *PLoS Pathog*, 8 (7), e1002793. https://doi.org/10.1371/journal.ppat.1002793 (IF 6.82)
2) Ali, Y. M., Hayat, A., Saeed, B. M., **Haleem, K. S.**, Alshamrani, S., Kenawy, H. I., Ferreira, V. P., Saggu, G., Buchberger, A., Lachmann, P. J., Sim, R. B., Goundis, D., Andrew, P. W., Lynch, N. J. & Schwaeble, W. J. (2014). Low-dose recombinant properdin provides substantial protection against Streptococcus pneumoniae and Neisseria meningitidis infection. *Proc Natl Acad Sci U S A*, 111 (14), 5301-6. https://doi.org/10.1073/pnas.1401011111 (IF 11.20)

3) **Haleem, K.S.**, Ali, Y.M., Yesilkaya, H., Kohler, T., Hammerschmidt, S., Andrew, P. W., Schwaeble, W.J., Lynch, N.J. (2019) The pneumococcal surface proteins PspA and PspC sequester host C4 binding protein to inactivate complement C4b on the bacterial surface. *Infection and Immunity* 87:e00742-18. https://doi.org/10.1128/IAI.00742-18 (IF 3.44)

4) Khan, A., Tauseef, I., Bibi, A., Khan, M.A., Akbar, S., Sultana, N., **Haleem, K.S.** (2018) Age-related Variations in the in vitro Bactericidal Activity of Human Sera against Pseudomonas aeruginosa. *Central European Journal of Immunology,* 43(1), 18-25 https://doi.org/10.5114/ceji.2018.74869 (IF 2.08)

5) Rehman, M., Tauseef, I., Aalia, B., Shah, S. H., Junaid, M., & **Haleem, K. S.** (2020). Therapeutic and vaccine strategies against SARS-CoV-2: past, present and future. *Future Virology*, 15(7), 471-482 https://doi.org/10.2217/fvl-2020-0137 (IF 1.83).

6) Sarfraz, M., Afzal, A., Khattak, S., Saddozai, U.A., Li, H.M., Zhang, Q.Q., Madni, A., **Haleem, K.S.**, Duan, S.F., Wu, D.D. and Ji, S.P., (2021). Multifaceted behavior of PEST sequence enriched nuclear proteins in cancer biology and role in gene therapy. *Journal of Cellular Physiology,* 236(3), 1658-1676. https://doi.org/10.1002/jcp.30011 (IF 6.38)

7) Khattak, S., Khan, M., Usman, T., Ali, J., Wu, D. X., Jahangir, M., **Haleem, K.**, Muhammad, P., Rauf, M. A., Saddique, K., Khan, N. H., Li, T., Wu, D. D. & Ji, X. Y. (2021). Assessment of General Populations Knowledge, Attitude, and Perceptions Toward the Coronavirus Disease (COVID-19): A Cross-Sectional Study From Pakistan. *Frontiers in Medicine*, 8, 747819. https://doi.org/10.3389/fmed.2021.747819 (IF 4.1)

8) Khattak, S., Faheem, M., Nawaz, B., Khan, M., Khan, N. H., Ullah, N., Khan, T. A., Khan, R. U., **Haleem, K. S.**, Ren, Z. G., Wu, D. D. & Ji, X. Y. (2022). Knowledge, Attitude, and Perception of Cancer Patients towards COVID-19 in Pakistan: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health* 19 (13):7926. doi: 10.3390/ijerph19137926..

9) Subhan, F., Shahzad, R., Tauseef, I., **Haleem, K.S.**, Rehman, A., Mahmood, S. and Lee, I. (2018) Isolation, identification, and pathological effects of beach sand bacterial extract on human skin keratinocytes *in vitro*. *Peer J,* 6, e4245; https://doi.org/10.7717/peerj.4245 (IF 2.98)

Other Publications

10) Hussain, W., **Haleem, K. S.**, Khan, I., Tauseef, I., Qayyum, S., Ahmed, B., & Riaz, M. N. (2017). Medicinal plants: a repository of antiviral metabolites. *Future Virology, 12*(6), 299-308 . https://doi.org/10.2217/fvl-2016-0110 (IF 1.83)

11) Abid, O. u. R., Khatoon, G., Arfan, M., Sajid, I., Langer, P., Rehman, W., . . . **Haleem, K. S.** (2017). Synthesis of Hydrazones from Amino Acids and their Antimicrobial and Cytotoxic Activities. *Journal of the Chinese Chemical Society*, 64 (9), 1079-1087 https://doi.org/10.1002/jccs.201600859 (IF 1.96)

12) Akhtar, K., Shah, S. W. A., Shah, A. A., Shoaib, M., **Haleem, S. K.**, & Sultana, N. (2017). Pharmacological effect of Rubus ulmifolius Schott as antihyperglycemic and antihyperlipidemic on streptozotocin (STZ)-induced albino mice. *Applied Biological Chemistry, 60*(4), 411-418. https://doi.org/10.1007/s13765-017-0293-9 (IF 1.83)

13) Khan, I., Qayyum, S., Ahmed, S., **Haleem, K. S.,** Liu, G.-L., & Zhen-Ming, C. **(2017).** Isolation and Characterization of Medicinally Important Marine Penicillium Isolates. *Pakistan Journal of Zoology, 49*(2), 435-441. https://doi.org/10.17582/journal.pjz/2017.49.2.435.441 (IF 0.831)

14) Khan, I., Qayyum, S., Ahmed, S., Maqbool, F., Tauseef, I., **Haleem, K. S.,** & Chi, Z. M. (2017). Cloning and characterization of pyruvate carboxylase gene responsible for calcium malate overproduction in Penicillium viticola 152 and its expression analysis. 605, 81-91 *Gene*. https://doi.org/10.1016/j.gene.2016.12.036 (3.68)

15) Khan, A.Q., **Haleem, S.K.,** Shafiq, M., Khan, N.A., Rahman, S. (2017) Seropositivity of brucellosis in human and livestock in Tribal-Kurram agency of Pakistan indicates cross circulation. *Thai Journal of Veterinary Medicine*, *47* (3), 349-355 https://he01.tci-thaijo.org/index.php/tjvm/article/view/99987 (IF 0.28)

16) Akbar, S., **Haleem, S.K.,** Hussain, W., Tauseef, I., Ali, N., Hasan, M. (2017) Raphanus Sativus Mediated Synthesis, Characterization and Biological Evaluation of Zinc Oxide Nanoparticles. *Nanoscience and Nanotechnology letters,* 9(12), 2005-2012 https://doi.org/10.1166/nnl.2017.2550 (IF 1.128)

17) Ali, A., Sultan, T., Subhan, F., **Haleem, K.S.,** and Tauseef, I. (2017) PGPRs of Plum (Prunus domestica) rhizosphere enhance the growth through health promoting and disease suppression activities. *Acta Agriculturae Scandinavica, Section B - Plant Soil Science,* 68(4), 367-378 https://doi.org/*10.1080/09064710.2017.1410565* (IF: 1.69).

18) Ali, H., Tauseef, I., **Haleem, S.K.,** Ullah, I., Shah, A.B., Khattak, M.N.K., Mahmood, S., Khan, M.F., Rashid, A. and Rehman, A.U. (2018). Prevalence of gastrointestinal nematodes in equines of Bajaur and Mohmand agencies, North-West Pakistan. *JAPS, Journal of Animal and Plant Sciences*, 28(3), 695-701. https://thejaps.org.pk/Volume/2018/28-03/abstract/04.php (IF 0.49)

19) Shah, P.T., Ali, F., Qayyum, S., Ahmed, S., **Haleem, K.S.,** Tauseef, I., Hayat, A.H., Malik, A.A., Ramzan, R. and Khan, I. (2018). Scorpion venom: A poison or a medicine-mini review. *Indian Journal of Geo Marine Sciences,* 47 (4), 773-778 http://nopr.niscpr.res.in/handle/123456789/44253 (IF 0.49)

20) Khan, S., Subhan, F., **Haleem, K.S.,** Khattak, M.N.K., Sultana,N., Sultan, T. and Tauseef,I. (2018) Impact of plant growth-promoting rhizobacteria on yield and disease control of Nicotiana tabacum. *Archives of biological sciences* 70(4): 717-725 https://doi.org/10.2298/ABS180315035K (IF 0.95)

21) Khan, I., Aftab, M., Shakir, S., Ali, M., Qayyum, S., Rehman, M. U., **Haleem, K. S.** & Touseef, I. (2019). Mycoremediation of heavy metal (Cd and Cr)-polluted soil through indigenous metallotolerant fungal isolates. *Environ Monit Assess*, 191(9), 585. https://doi.org/10.1007/s10661-019-7769-5 (IF 2.51)

22) Maqbool, F., Kamal, R., Bhatti, Z. A., Pervez, S., Sajid, **M.**, **Haleem, K.** & Faridullah (2019). Effects of hydrocarbon degrading inoculum for carwash effluent treatment in a UASB reactor. *DESALINATION AND WATER TREATMENT*, 164, 31-38. https://doi.org/10.5004/dwt.2019.24396 (IF 1.25)

23) Rehman, S., Sultana, N., Ahmad, D., Sultana, T., & **Haleem, K. S.** (2019). Comparative GC-MS Analysis of Nine Different Seasonal Flowers Growing in Selected Region of Pakistan. *Journal of the Chemical Society of Pakistan,* 41(5), 893-902. (IF 0.39)

24) Khan, I., Ali, M., Aftab, M., Shakir, S., Qayyum, S., **Haleem, K. S.** & Tauseef, I. (2019). Mycoremediation: a treatment for heavy metal-polluted soil using indigenous metallotolerant fungi. *Environ Monit Assess,* 191, 622. https://doi.org/10.1007/s10661-019-7769-5 (IF 2.51)

25) Ahmed S., Tauseef, I., **Haleem, K.S.**, Khan, K., Shehzad, M., Ali, M. and Sunltan, F. (2019) Synthesis of silver nanoparticles using leaves of *Catharansus roseus* and their antimicrobial activity. *Applied nanoscience,* https://doi.org/10.1007/s13204-019-01221-z (IF 3.67)

26) Aziz, S., Yaseen, L., Jamal, A., Farooq, U., Qureshi, Z., Tauseef, I., **Haleem, S. K.** & Ali, M. I. (2020). Fabrication of Biochar from Organic Wastes and its Effect on Wheat Growth and Soil Microflora. *Polish Journal of Environmental Studies,* 29 (2), 1069. https://doi.org/10.15244/pjoes/99825 (IF 1.69)

27) Furqan, M.A., Farooq, U., Liaquat, R., Qureshi, Z., Ahmad, B., Jamal, A., Tauseef, I., **Haleem, S.K.**, Ullah, I. and Ali, M.I. (2020) Catalytic Efficiency of Acidithiobacillus ferrooxidans for Bioleaching Copper from Chalcocite Containing Sulfide Ore from Reko Diq Deposits in Pakistan. *Polish Journal of Environmental Studies,* 29 (2) 1593. https://doi.org/10.15244/pjoes/96257 (IF 1.69)

28) Akbar, S., Tauseef, I., Subhan, F., Sultana, N., Khan, I., Ahmed, U. & **Haleem, K. S.** (2020) An overview of the plant mediated synthesis of Zinc Oxide nanoparticles and their antimicrobial potential. *Inorganic and Nano-metal Chemistry,* 50 (4), 257-271. https://doi.org/10.1080/24701556.2019.1711121 (IF 1.71)

29) Ahmad, S., Ahmad, S., Naiz, Z., Tauseef, I., Ullah, W., Ullah, H. and **Haleem, K.S.** (2020) Pharmacotherapy of resistant enteric pathogens in combination with medicinal plants extracts and antibiotics. *Applied nanoscience* https://doi.org/10.1007/s13204-020-01409-8 (IF 3.67).

30) Subhan, F., Naeem, M., Sajjad, W., Ali, L., Tauseef, I., & **Haleem, S. K.** (2020). Epidermal Growth Factor-Like Domain-8 (EGFL8) in Mammals: The Story so far. *Life and Science*, 1(3), 3-3 http://doi.org/10.37185/LnS.1.1.59.

31) Ullah, H., Pervez, S., Ahmed, S., **Haleem, K.S.**, Qayyum, S., Niaz, Z., Nawaz, M.A., Nawaz, F., Subhan, F. and Tauseef, I., (2021) Preparation, characterization and stability studies of cross-linked α-amylase aggregates (CLAAs) for continuous liquefaction of starch. *International Journal of Biological Macromolecules*. 171, 267-276 https://doi.org/10.1016/j.ijbiomac.2021.01.057 (IF 6.95)

32) Abdullah, M., Ali, I., **Haleem, K.S.**, Rehman, A. U., Qayyum, S., Niaz, Z., Ahmed, S., Khan, I., Khattak, M. N. K., Sultana, N. and Tauseef, I. (2021) Molecular and biochemical characterization of echinococcus spp. in hydatid cyst fluid collected from human and livestock in Northern Khyber Pakhtunkhwa and Gilgit Baltistan. *JAPS, Journal of Animal and Plant Sciences*, 31(5) https://doi.org/10.36899/JAPS.2021.5.0330 (IF 0.49)

33) Murtaza, A., Ullah, S., Tauseef, I., **Haleem, K.**, Jamal, M., Gu, J., (2021). High rate of ESBL producing Escherichia coli from retail chicken carrying *blactx-m* gene on plasmids mainly carrying

frep-b replicon. *JAPS, Journal of Animal and Plant Sciences*, 31(3) 698-707 https://thejaps.org.pk/Volume/2021/31-03/abstract/08.php (IF 0.49)

34) Shah A, Tauseef I, Ali MB, Yameen MA, Mezni A, Hedfi A, **Haleem SK**, Haq S (2021). In-Vitro and In-Vivo Tolerance and Therapeutic Investigations of Phyto-Fabricated Iron Oxide Nanoparticles against Selected Pathogens, *Toxics* 9(5), 105. https://doi.org/10.3390/toxics9050105 (IF 4.14)

35) Shah, N.I., Jabeen, N., Irum, S., Ahmad, K.S., Tauseef, I., Khan, T.F., Anwaar, S., Shafique, S., **Haleem, S.K.**, Mehmood, A. and Hussain, S.Z. (2021). Environmentally benign and economical bio-fabrication of ZnO and Cr-doped ZnO nanoparticles using leaf extract of Citrus reticulata for biological activities. *Materials Today Communications* 27, 102383 https://doi.org/10.1016/j.mtcomm.2021.102383 (IF 3.38)

36) Shah, A., Tauseef, I., Yameen, M. A., **Haleem, S. K.**, Haq, S., & Shoukat, S. (2022). In-vivo toxicity and therapeutic efficacy of Paeonia emodi-mediated zinc oxide nanoparticles: In-vitro study. *Microscopy Research and Techique*, 85(1), 181-192. https://doi.org/10.1002/jemt.23894 (IF 2.76)

37) Naveed, M., **Haleem, K. S.**, Ghazanfar, S., Tauseef, I., Bano, N., Adetunji, C. O., Saleem, M. H., Alshaya, H. & Paray, B. A. (2022). Quantitative Estimation of Aflatoxin Level in Poultry Feed in Selected Poultry Farms. *BioMed Research International*, 2022, 5397561. https://doi.org/10.1155/2022/5397561 (IF 4.1)

38) Wali, S., Zahra, M., Okla, M. K., Wahidah, H. A., Tauseef, I., **Haleem, K. S.**, Farid, A., Maryam, A., Abdelgawad, H., Adetunji, C. O., Akhtar, N., Akbar, S., Rehman, W., Yasir, H. & Shakira, G. 2022. Brassica oleracea L. (Acephala Group) based zinc oxide nanoparticles and their efficacy as antibacterial agent. *Brazilian Journal of Biology,* 84, e259351 https://doi.org/10.1590/1519-6984.259351 (IF 2.4).

39) Shah, A., Tauseef, I., Arfat Yameen, M., Ben Ali, M., Haq, S., Elmnasri, K., Al-Harbi, M. S., **Kashif Haleem, S.**, Hedfi, A. & Ben-Attia, M. 2023. Histopathological and hematological Investigations of Mice Model inoculated with Nickel oxide nanoparticles and bacterial pathogens: In-vitro and in-vivo antibacterial studies. *Journal of King Saud University - Science,* 35, 1, 102456 https://doi.org/10.1016/j.jksus.2022.102456 (IF 6.3).

40) Khan, M., Khan, I., Tauseef, I., **Haleem, K.S.**, Shah, T.A., Naz, S., Nazir, N., Aziz, T. and Thamer, H.A., (2023). Cloning and periplasmic soluble expression of hepatitis B surface antigen gene in Escherichia coli. *European Review for Medical & Pharmacological Sciences*, 27(24). https://doi.org/10.26355/eurrev_202312_34770 (IF 6.3)

41) Fatima, T., Tauseef, I., **Haleem, K.S.**, Naeem, M., Islam, S. U., Khan, M.S., Islam, U. I., Subhan, F. (2024). Footprint of green synthesizing ingredients on the environment and pharmaceuticals. *International journal of environmental science and technology* https://doi.org/10.1007/s13762-024-05498-8 (IF 6.4)

42) Akbar, S., **Haleem, K.S.**, Farrukh, S., El-Ghaiesh, S. H., Fawzy, S., Jan, A. and Al-Harrasi, A. (2024). Occurrence and antimicrobial resistance of Campylobacter jejuni isolated from poultry and hospitalized diarrheal patients in Khyber Pakhtunkhwa, Pakistan. *Journal of Agriculture and Food Research* https://doi.org/10.1016/j.jafr.2024.101423 (IF 4.8)

43) Zeb, F., **Haleem, K.S.**, Almuqbil, M., Rashid, M., Hussain, W., Maqbool, F., Tauseef, I., Jafri, L., Mannasaheb, B.A., Hussain, S.A. and Quadri, M.S.A., (2024). Age, gender, and infectious status-wise assessments of hematological parameters among patients with dengue infection. *Heliyon*, *10*(13) https://doi.org/10.1016/j.heliyon.2024.e34053.

ABSTRACTS SUBMITTED TO CONFERENCES AND WORKSHOPS

1) **Haleem KS**, Ali YM, Lynch NJ, Andrew PW and Schwaeble WJ, 2011. Role of the lectin pathway recognition molecule ficolin-A in fighting pneumococcal infections. *British Society for Allergy and Clinical Immunology Annual Meeting*, July 11th -13th, 2011.

2) Subhan, F., Ullah, M. W., Yang, G., Islam, M. U., Tauseef, I., **Haleem, K.,S.** Rashid, A., 2017. Bacterial Bio-Fermented 3D Bio-Model for Skin Keratinocytes in vitro Cell Culture, *13th International Conference on Nursing, Medical and Biological Sciences (NMBS-2017)*, Dec. 28-29, 2017 Pattaya (Thailand)

3) Subhan, F.,, Khan, B.A, Tariq, R., Bayan, R., **Haleem. K.S**, Tauseef, I., 2021, Equip the commensal army; win the war against pathogens, *International Conference on Multidisciplinary Nano Research,* August 02-04 2021, AUST Abbottabad, Pakistan

4) Tehreem Fatima, Fazli Subhan, Tayyaba Bibi, **Syed Kashif Haleem**, Nuzhat Imam Shah, Isfahan Tauseef, 2024 Construction of 3D cell culture bio-model using bacterial cellulose and bacterial fermented fish waste product and its applications in skin regeneration. *Times Higher Education's Global Sustainable Development Congress* 10–13 June 2024 Bangkok Thailand,

MAJOR COURSES TAUGHT

- **MIC-221:** Clinical Immunology (Undergraduate)
- **MIC-215:** General Immunology (Undergraduate)
- MIC-704: Advanced Immunology (Postgraduate)
- **MIC-315:** Medical Microbiology (Undergraduate)
- **MIC-111:** Fundamentals of Microbiology-I (Undergraduate)
- **MIC-121:** Fundamentals of Microbiology-II (Undergraduate)
- **MIC-623:** Molecular mechanism of Disease (Postgraduate)
- **MIC-625:** Current Trends in Molecular Medicine (Postgraduate)
- **MIC678:** Host-Pathogen Interactions (Course developed and Introduced in Curriculum of MS/PhD Microbiology)

- **MIC635:** Viral Immunology (Course developed and Introduced in Curriculum of MS/PhD Microbiology)
- **MIC634:** Vaccinology (Course developed and Introduced in Curriculum of MS/PhD Microbiology)
- **MIC-703:** Research planning and scientific Writing (Postgraduate)

MEMBERSHIP OF UNIVERSITY BODIES/BOARD

- Selected as member of member of Curriculum Review Committee by Higher Education Division of the Govt. of KP Province Pakistan for Standardization and uniformization of BS Curriculum across Universities of KP Province.
- Member of the Board of Studies of the Department of Microbiology Hazara University.
- Member of the Board of Faculty of Biological and Health Sciences Hazara University.
- Member of the Board of Studies of the Department of Microbiology University of Swabi.
- Member/convener of several department/university committees like Purchase committee, need assessment committee, seminar committees, health committee and Undergrad/Graduate admission committees etc
- As a Chairman/head of Department, I have been convener of thesis examination committees and have convened more than 40 MPhil examinations and five PhD examination.

M. PHIL/ PHD RESEARCH SUPERVISION

- Supervised 41 M. Phil and 1 PhD students, who have completed their degree till 2025.
- Currently supervising 2 M. Phil and 2 PhD students.

PhD Students

S. No.	Student's Name	Thesis Title	Status
1.	Sadia Akbar	Investigation of the protective role of complement system against *Campylobacter jejuni*	Completed 2024
2.	Umair Ahmed	Age-related variations in the activation of complement system against *Pseudomonas aeruginosa*	Write up in progress
3.	Muhammad Naveed	In-depth analysis of the complement activation cascade against multi drug resistant *Staphylococcus aureus*	Thesis Submitted for evaluation

M. Phil/MS Students

S. No.	Student's Name	Thesis Title	Year
1.	Israr Khan	Diagnosis and Drugs Susceptibility Testing Pattern of *Mycobacterium tuberculosis* Using Different Phenotypic Methods in clinical samples of Rawalpindi territory Hospitals, Pakistan	2015
2.	Saadullah Khattak	Comparative study of Microbial load from different irrigation water sources	2015
3.	Sadia Sardar	Assessment of mycotoxins in locally available vegetables	2015
4.	Sadia Akbar	Investigation of antimicrobial activity of green synthesized zinc oxide nanoparticles using leaf extract of *Raphanus sativus*	2016
5.	M. Azam Khan	Comparative bactericidal activity of serum of different age groups against *Staphylococcus aureus*	2016

6.	Akram Khan	In vitro killing of *Pseudomonas aeruginosa* by serum obtained from various age groups	2016
7.	Abdul Qadir Khan	Sero-diagnosis of Brucellosis in livestock and human population, and their risk factors in Kurram agency, KPK, Pakistan	2016
8.	Malik Danish Saeed	Serodiagnosis of anaplasmosis through ELISA in cattle of Hazara Division	2016
9.	Fakhar Islam	In-vitro bactericidal activity of human sera against *Klebsiella pneumoniae*	2017
10.	Aftab Ahmed Khan	In-vitro bactericidal activity of serum, obtained from children, adults and elderly, against *Escherichia coli*	2017
11.	Zohaib	Detection of dengue virus and its serotypes in *Aedes* mosquitoes and larvae in dengue controlled areas of Lahore	2017
12.	Muhammad Akbar	Bacteriological Evaluation of Raw and Cooked Meat Sold at Local Markets and Hotels of Peshawar City	2017
13.	Syeda Rabail Siraj	Occurrence of the Vaginal Candidiasis in Women of Reproductive Age Groups in a Tertiary Care Centre of Abbottabad	2017
14.	Dr. M. Qasim	Bactericidal Potential of Milk Inhabitant *Bacillus* Species Against Selected Bacterial Pathogens	2017
15.	Mehraj Ullah	Age-dependent variations of human serum bactericidal activity against *Salmonella typhimurium*	2018
16.	Shafiq ur Rehman	Comparative bactericidal activity of human sera of different age groups against *Vibrio cholerae*	2018
17.	Abrar Khan	In vitro bactericidal activity of human sera obtained from various age groups against *Shigella dysenteriae*	2018
18.	Raheem ud Din	Isolation and identification of enteropathogenic bacteria from milk samples in District Swat	2018
19.	Sohail Ahmed	Effects of irradiation and autoclaving on the microbial eradication of cooked poultry meat	2018
20.	Shazia Gul	Seroprevalence of Infectious Bronchitis Virus in Chicken Collected from Selected Farms of Mansehra and Abbottabad	2018
21.	Ihsan ur Rehman	Seroprevalence of toxoplasmosis in slaughtered animals from butcher's shops in Mingora City	2018
22.	Muhammad Naveed	Quantitative Estimation of Aflatoxin Level in Poultry Feed of District Mansehra	2018
23.	Anwar Ullah	Comparative Bactericidal Activity of Serum of different Age Groups against Haemophilus influenzae	2019
24.	Shakeel Ahmed	Determination of Ochratoxin Contamination in Poultry Feed of District Abbottabad	2019
25.	Mehboob Alam Khan	Assessment of the Efficacy of Pentavalent Vaccine used in EPI Program Against Haemophilus influenzae	2019
26.	Shafiq ullah	Plasmid Replicon Typing and Profiling of Antibiotic Resistance of ESBL Producing Escherichia coli from Poultry Meat	2019
27.	Irum	Amplification and Cloning of Endolysin and Holin from Bacteriophage RSP	2019
28.	Matiullah	Cloning and Expression of Hepatitis B Surface Antigen Gene in *Escherichia coli*	2019
29.	Muhammad Zubair	Identification and Antibiotic Resistance Patterns of Pathogenic Bacteria Isolated from Intestine of Monosex Male Tilapia in Selected Earthen Ponds	2020
30.	Nowshad Wali	Isolation and molecular identification of exopolysaccharides producing *Weissella confusa* from buffalo ruminal gut	2020
31.	Yasir Ayaz	Biosynthesis of silver nano particles from *Bacillus tequilensis* and their antimicrobial activity	2020
32.	Naveed Anjum	Probiotic Potential of *Streptococcus thermophilus* Isolated From Buffalo Faecal Samples	2020
33.	Mubashar Rehman	In vitro Binding of Complement Lectin Pathway Activation Molecule MBL to Pseudomonas aeruginosa	2021
34.	Zia ur Rehman	Role of Ficolin L, H and M in Activating the Lectin Pathway Against *Pseudomonas aeruginosa*	2021

35.	Abdul Rauf	*In vitro* C3 Activation on the Surface of Wildtype and Multidrug Resistant *Pseudomonas aeruginosa*	2021
36.	Kashif Ahmed	Role of the Classical Pathway in Complement Activation Against *Pseudomonas aeruginosa*	2021
37.	Farman Ullah	Collectin-11 mediated lectin pathway activation against *Pseudomonas aeruginosa*	2022
38.	Zaheer Haider	Frequency of bla_{CTX-M}, bla_{SHV}, bla_{TEM} genes in ESBL producing *E. coli* isolated from dairy milk marketed in Charsadda	2023
39.	Matiullah	Investigation of the Roles of Alternative, Lectin and Classical Pathways of Complement Against *Pseudomonas aeruginosa*	2023
40.	Fahimullah	Investigation of Membrane Attack Complex formation on the surface of wild type and multi drug resistant *P. aeruginosa*	2024
41.	Saba Fareed	The Efficacy of the Pneumococcal Vaccine Used in the EPI Program to Boost Complement-Mediated Immune Response Against *Streptococcus pneumoniae*	2025
42.	Yusra Jalil	Role of the complement recognition molecules in mediated complement mediated immune response against ESBL producing *Escherichia coli*	In process
43.	Isra Mughal	Formation of Membrane Attack Complex on the surface of ESBL producing *Escherichia coli*	In process

CONFERENCES/WORKSHOPS/SEMINARS ORGANIZED AND ATTENDED

- Attended/organized (Coordinator) **Second National Conference on 'Current approaches in Microbiology'** held at Nathiagali (Pakistan) on June 27th -28th, 2013.
- Attended British Society for Allergy and Clinical Immunology (BCACI) Annual Meeting, East Midlands Conference Centre Nottingham (UK), July 11th -13th, 2011.
- Organized a training workshop on **"Biosafety Training in KPK with a Skill Based Approach"** at Hazara University Mansehra on 16-18 November 2016.
- Organized a workshop on **"Advances in Phage Therapy"** at Hazara University Mansehra on 4-5 April 2017.
- Organized a seminar on **"World Malaria Day #End Malaria for Good"** at Hazara University Mansehra on 4-5 April 2018.
- Organized a seminar on **"Importance of Blood Grouping and Construction of Database of Blood Donors"** at Hazara University Mansehra on 22 November 2017.
- Organized an awareness seminar of **COVID-19** at Hazara University on 06, March 2020.
- Attended **"International Workshop on Fundamental Techniques in Viral Diseases Diagnostics"**, organized by COMSTECH Secretariat, Islamabad during January 25-27, 2021
- Participated in **Hazara University Research Expo 2022** held on June 09, 2022 organised by Directorate of ORIC Hazara University.

WORK EXPERTISE

- Experience in infection study using mouse model.
- ELISA
- PCR
- qPCR
- FACS

- Phagocytosis and serum bactericidal assays

SPECIALIST TRAINING

- Personal License holder for Animal Research after completing Personal License Training Module 1-3 at University of Leicester UK from May 19, 2008 to May 20, 2008
- Attended special training program on 'Laboratory Safety' at University of Leicester, UK. October 03, 2008 covering following modules:
  I. Safety management & risk assessment
  II. Biological & chemical hazards
  III. Radiation Safety
  IV. Genetic Modification

RESEARCH INTERESTS

- Infectious Microorganisms
- Animal models
- Immunotherapeutics against MDR Pathogens
- Complement System

Microbiology and Immunology are major areas of my research. I have expertise in both these fields. Currently, I am focusing my research on various molecular aspects of the interaction of host immune system against different infectious microorganisms with the emphasis on complement system in fighting these pathogens, aiming to investigate the potential of several complement components as therapeutics. Recently I completed one NRPU research project, investigating the complement driven immune responses against *Pseudomonas aeruginosa*, whereas applications for more research grants is under process. In addition to above-mentioned areas, I have also conducted research in other areas of Microbiology.

RESEARCH PROFILE

Summary

- Investigated the role of ficolin-A in fighting pneumococcal infection, demonstrating its therapeutic potential.
- Described the therapeutic potential of properdin in alternative pathway complement activation against *S. pneumoniae* and *N. menegitidis*.
- Resolved the mechanism of how pneumococcus inhibits complement C4b deposition on its surface.
- Published research articles in high-impact journals, including PLoS Pathogens and Proceedings of the National Academy of Sciences USA and other reputed journals.
- Completed NRPU research grants to study complement driven immune responses against *Pseudomonas aeruginosa*.

Details

During my PhD research, I made some key contributions for science with findings of great impact. I successfully investigated the protective role of the lectin pathway recognition molecule, ficolin-A, in fighting pneumococcal infection, and demonstrated the therapeutic potential of this molecule using a mouse model of *Streptococcus pneumoniae*. My results showed that mice deficient in lectin pathway recognition molecules succumbed to infection when challenged with *Streptococcus pneumoniae,* establishing the critical role of this molecule in fighting pneumococcal infection. These findings were published in our joint paper in PLoS Pathogen, which have earned more than 200 citation so far (see Ali et al., 2012). I took these findings one step further by injecting the mice with recombinant ficolin before the pneumococcal challenge and revealed that the mice treated/injected with recombinant ficolin A expressed in *E. coli* cleared the infection more efficiently with increased survival rates and decreased blood bacterial burden after the pneumococcal challenge. These findings opened a new window for research showing a hope that some complement proteins can be used to boost immunity against a particular pathogen, hence showing a great promise as alternative antibiotic therapy to tackle increasing antibiotic resistance in future.

In another Medical Research Council (MRC) UK project, I along with my colleagues at Leicester, described the therapeutic potential of properdin, an alternative pathway molecule. In this project, we demonstrated that low dose recombinant properdin injected in mice provides substantial protection in mice challenged with *S. pneumoniae* and *N. meningitidis* with increased survival rates and decreased blood bacterial burden. Los Angles Times covered this success story on March 24, 2014

(http://www.latimes.com/science/sciencenow/la-sci-sn-immune-system-resistant-infection-20140324-story.html) as well as other notable Science Media (see links below).

1. https://www.eurekalert.org/pub_releases/2014-03/uol-iib032414.php
2. https://scienceblog.com/71288/booster-makes-immune-system-far-more-effective-in-fighting-pneumonia-meningitis/

I also resolved the unsolved mystery of how pneumococcus inhibits complement C4b deposition on its surface. Although it was established that C4 is not deposited on the pneumococcal surface and restrict complement attack, the exact mechanism behind this phenomenon was unknown. I successfully demonstrated for the first time that *Streptococcus pneumoniae* sequesters host regulator (C4 binding protein) on its surface that degrades any C4b deposited on its surface with the help of factor I as a cofactor. This also cleared the misconception that pneumococcus inhibits C4b deposition and showed that pneumococcus degrades C4b after deposition on its surface by inducing factor I mediated cleavage with the help of C4BP. My four years stay in the UK was more than fruitful with outstanding new findings. These key findings during my PhD earned me authorship/coauthourship in high impact journals with two joint publications in PLoS Pathogen (Impact factor 6.8) and Proceedings of the National Academy of Science USA (impact factor 11.2), and a first author paper in Infection & Immunity (Impact factor 3.4). All these research articles were highly appreciated among science audience with more than 300 citations.

With major accomplishments in research in UK, I came back as the youngest PhD in Hazara University (27 Years) and joined my department. I focused my research on immunotherapeutics as alternate treatment strategies against bacteria rapidly developing antibiotic resistance. In an MPhil project carried under my supervision in collaboration with PIMS Islamabad, we came up with new findings that serum mediated

immunity against *P. aeruginosa* is compromised in children and elderly. These were very interesting findings which were published in the *Central-European Journal of Immunology* (Impact factor 2.7). I hypothesised that these differences in age-related variations in serum mediated immunity against *P. aeruginosa* are due to maturational deficiency of some complement proteins in children or age-related dysregulation in elderly. To investigate these differences at the molecular level, I submitted a research proposal to HEC and won NRPU research grant worth 5.2 Million to investigate these differences at the molecular level with an aim to identify complement protein having a key role in protection against *Pseudomonas aeruginosa*. By translating these findings, I am hopeful to produce the recombinant versions of these proteins for their possible commercial utilization as an additional therapeutic strategy in children, compromised elders and the adults infected with resistant *Pseudomonas aeruginosa* strains. Besides immunotherapeutic strategies, I also investigated the role of several nanoparticles as antimicrobials which was published in several impact factor journals.

Several key findings during my research career and collaborations have earned me authorship/coauthorship in more than 44 publications in HJRS/JCR listed journals with a combined impact factor of 130, 1275 citations and an h-index of 18. I have supervised more than 40 M. Phil research students and 2 PhD scholars whereas one PhD is writing up.

RELEVANT WEBSITES/LINKS

1. Official: https://hu.edu.pk/faculty/detail/250
2. Google Scholar: https://scholar.google.com/citations?hl=en&user=LtjQWNEAAAAJ
3. LinkedIn: https://www.linkedin.com/in/kashifhaleem
4. Documentary on my research project: https://youtu.be/cvI18h_fDKo

ACADEMIC REFEREES

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