

Dr. Amen Shamim

Assistant Professor

Centre for Advanced Studies in Agriculture and Food Security/ Department of Computer Science, University of Agriculture, Faisalabad, Pakistan

Email: amen.shamim@uaf.edu.pk

Research Interest

I am a Bioinformatician with a diverse research background, spanning genome-wide analysis, structural modeling, machine learning in bioinformatics, and molecular dynamics simulations. My work integrates big data analytics, computational modeling, and functional genomics to uncover insights in biomedical research.

Publications

1. Qureshi MA, Butt M, Lal A, Vo T, Bupi N, Tabassum M, Im H, Lee A, Shamim A, Lee S. 2025. Regulatory role of stem-loop structures in Faba bean necrotic yellows virus replication efficiency. *Molecular Spectrum* Accepted.
2. Shafique R, Zahra A, Butt MH, Khan SH, Ali WR, Arshad MI, Shamim A. 2025. Comparative analysis of ACE2 mutations and their impact on SARS-CoV-2 susceptibility within diverse ethnic groups. *Journal of Biomolecular Structure and Dynamics* 1-14.
3. Khalid Z, Shamim A, et al. 2024. Identification of potential inhibitors against *Corynebacterium diphtheriae* MtrA response regulator protein: an in-silico drug discovery approach. *Journal of Molecular Graphics and Modelling* 133:108858.
4. Shah M, Yamin R, Ahmad I, Wu G, Jahangir Z, Shamim A, Nawaz H, Nishan U, Ullah R, Ali EA, Shehryar, Chen K. 2024. In-silico evaluation of natural alkaloids against the main protease and spike glycoprotein as potential therapeutic agents for SARS-CoV-2. *PLoS One*. 19(1), e0294769.
5. Lal A, Shamim A, Kil EJ, Vo T, Qureshi MA, Bupi N, Tabassum M, Lee S. 2023. Insights into the differential composition of stem-loop structures of nanoviruses and their impacts. *Microbiology Spectrum* 21(1):157-197.
6. Ali WR, Zahra A, Rasheed H, Ahmad A, Khan SH, Shamim A, Arshad MI. 2022. Detection of SARS-CoV-2 by RT-LAMP assay in human COVID-19 patients. *Proceedings of the 19th International Bhurban Conference on Applied Sciences and Technology (IBCAST)*:381-385.
7. Zahra A, Shahid A, Shamim A, Khan SH, Arshad MI. 2022. The SHERLOCK platform: An insight into advances in viral disease diagnosis. *Molecular Biotechnology* 64:1-16.
8. Lee J, Shamim A, Park J, Jang JH, Kim JH, Kwon JY, Lee J. 2022. Functional and structural changes in the membrane-bound O-acyltransferase family member 7 (MBOAT7) protein: the pathomechanism of a novel MBOAT7 variant in patients with intellectual disability. *Frontiers in Neurology* 13:642.
9. Park KR, Kim YE, Shamim A, Gong S, Choi SH, Kim KK, Ahn JH. 2022. Analysis of novel drug-resistant human cytomegalovirus DNA polymerase mutations reveals the role of a DNA binding loop in phosphonoformic acid resistance. *Frontiers in Microbiology* 13:771978.
10. Hur JH, Kang CY, Lee S, Parveen N, Yu J, Shamim A, Kim KK. 2021. AC-motif: A DNA motif containing adenine and cytosine repeat plays a role in gene regulation. *Nucleic Acids Research* 49(17):10150-10165.
11. Shamim A, Razzaq M, Kim KK. 2020. MD-TSPC4: Computational method for predicting the thermal stability of i-motif. *International Journal of Molecular Sciences* 22(1):61.
12. Batool N, Shamim A, Chaurasia AK, Kim KK. 2021. Genome-wide analysis of *Staphylococcus aureus* sequence type 72 isolates provides insights into resistance against antimicrobial agents and virulence potential. *Frontiers in Microbiology* 11:613800.

13. Yu YS, Shin HR, Kim D, Baek SA, Choi SA, Shamim A, Baek SH. 2020. Pontin arginine methylation by CARM1 is crucial for epigenetic regulation of autophagy. *Nature Communications* 11(1):6297.
14. Shamim A, Parveen N, Subramani VK, Kim KK. 2020. Molecular packing interaction in DNA crystals. *Crystals* 10(12):1093.
15. Parveen N, Shamim A, Cho S, Kim KK. 2019. Computational approaches to predict the non-canonical DNAs. *Current Bioinformatics* 14(6):470-479.
16. Iqbal S, Shamim A, Azam SS, Wadood A. 2016. Identification of potent inhibitors for chromodomain-helicase-DNA-binding protein 1-like through molecular docking studies. *Medicinal Chemistry Research* 25:2924-2939.
17. Shamim A, Abbasi SW, Azam SS. 2015. Structural and dynamical aspects of Streptococcus gordonii FabH through molecular docking and MD simulations. *Journal of Molecular Graphics and Modelling* 60:180-196.
18. Azam SS, Shamim A. 2014. An insight into the exploration of druggable genome of Streptococcus gordonii for the identification of novel therapeutic candidates. *Genomics* 104(3):203-214.
19. Shamim A, Shamim A, Hussain B. 2012. Study of biochemical changes and elevated levels of enzymes in Salmonella typhi infected patients in Pakistani population. *International Journal Bioautomation* 16(1):33-42.

Chapters/articles in books with foreign publishers

1. Iftikhar, M. S., Talha, G. M., Aleem, M., **Shamim, A.** (2021). Bioinformatics–computer programming. In Nanotechnology in Cancer Management (pp. 125-148). **Elsevier**.
2. **Shamim, A.**, Shamim, A., Riaz, A., (2012). Biochemical aspects in Typhoid Fever: *Salmonella typhi* infection in Faisalabad, Pakistan. **Lambert Academic Publishing**, ISBN 9783659223471.

Conferences

1. **Shamim, A.**, Biolatti, V., Quiles, CG., 2025. Profiling the Tumour Microenvironment to Predict NAC Response in Bladder Cancer. ISMB, Liverpool
2. **Shamim, A.**, Quiles, CG., Biolatti, V., ...2025. Genomic landscape of hypoxia in bladder cancer. Estro, Austria.
3. **Shamim, A.**, Batool, N., Parveen, N., Kim, K. K., 2021. Molecular packing interaction in DNA crystals. PDB 50th Anniversary Symposium in Asia, Japan
4. Ali, W. R., Zahra, A., Rasheed, H., Ahmad, A., Khan, S. H., **Shamim, A.**, 2022. Detection of SARS-CoV-2 by RT-LAMP assay in Human COVID-19 patients. 19th International Bhurban Conference on Applied Sciences and Technology (IBCAST)-2022)
5. Batool, N., Ko, K. S., **Shamim, A.**, Chaurasia, A. K., Kim, K. K., 2022 Functional Identification of Serine Hydroxymethyltransferase as a Key Gene Involved in Lysostaphin Resistance and Virulence Potential of Staphylococcus aureus Strains. Antimicrobial Chemotherapy Virtual Conference (ACC)
6. **Shamim, A.**, Kim, K.K., 2019 Computational studies to analyze crystallization and crystal packing of DNA oligonucleotides. Conference: 2019 Conference of the Federation of Korean Societies for Biomolecular Sciences, South Korea
7. **Shamim, A.**, Kim, K.K., 2019 Whole-genome analysis framework for identification of non-coding regulatory mutations in multiple cancer types. 27th Conference on Intelligent Systems for Molecular BiologyAt: Basel, Switzerland
8. **Shamim, A.**, Kim, K.K., 2018 G-quadruplex associated recurrent noncoding regulatory mutations in cancer genome.26th Conference on Intelligent Systems for Molecular Biology, USA

Academic Achievements

- ❖ Radnet Fellowship, MCRC, University of Manchester, UK
- ❖ Sungkyunkwan Honorable Scholarship award from School of medicine, Sungkyunkwan University
- ❖ ADP, fully funded scholarship for Ph.D studies from Agriculture University Faisalabad.
- ❖ Merit scholarship holder in M.Phil at National Centre for Bioinformatics (NCB), Quaid-i-Azam University, Islamabad.
- ❖ Representative of NCB in inter-departmental badminton games.
- ❖ DNA Day poster winner in BS(Hons) at Government College University, Faisalabad.