

Abdul Waheed Khan, PhD

Molecular Pharmacology | Immunology | 3D Spheroids/Organoids | Cancer Biology | Animal Studies | Metabolic & Autoimmune Diseases

Email: waheed@ajou.ac.kr | waheedmarwat31@gmail.com

Google Scholar: <https://scholar.google.com/citations?user=r6OqALEAAAAJ&hl=en>

Research Summary

A highly motivated and accomplished researcher with strong expertise in molecular pharmacology, immunology, and cancer biology. I possess extensive experience in advanced molecular and cellular techniques, including Western blotting, ELISA, qPCR, SPR, CETSA, multiple cell cultures, cells differentiation, and 3D spheroid/organoid systems, along with hands-on proficiency in in vivo disease models and surgical procedures. My research integrates in vitro, and in vivo approaches to investigate immune signaling, inflammation, cancer, and therapeutic target discovery.

I am an independent, detail-oriented scientist as well as a collaborative and adaptable team member, capable of leading projects and contributing effectively in experimental environments. My strong interest in immune signaling, immune-metabolism, and inflammation-driven cancer motivates my commitment to high-quality, and impactful research. I aim to contribute to innovative translational research as a postdoctoral fellow and further develop as an independent scientist in the global research community.

Key Achievements

- Authored 24 peer-reviewed publications in good impact journals (h-index: 10, i10-index: 10, & 850 citations)
- First discovery of selective IL-36R small molecule antagonist for inflammation and cancer
- Integrated in vitro, and in vivo experimental approaches for immune signaling, metabolic diseases, and cancer biology
- Recipient of National Research Foundation, Brain Korea 21 (BK21) Best Research Paper Award (2026) and AJOU University Outstanding PhD Thesis Award (2026)
- Hands-on expertise in in vitro, 3D spheroid/organoid systems, mechanistic investigations, and in vivo disease models
- Experienced in multidisciplinary collaboration, project leadership, and scientific communication
- Strong expertise in immune-metabolism, cytokine signaling, and inflammation role in cancer progression

Research Expertise & Technical Skills

- **Molecular & Cellular Biology:** Mammalian cell culture, Western blotting, qPCR, ELISA, SPR, CETSA, microscopy, UV spectrophotometer, 3D spheroids/organoids, Transwell assays, migration & invasion assays, MTT/LDH viability assays

- **Immunology & Inflammation:** IL-36, TLR signaling, inflammasomes, cytokine profiling, immune-metabolism (TXNIP/ChREBP,NLRP3 inflammasome, oxidative stress)
- **In Vivo & Behavioral Studies:** Experimental and disease models, behavioral assays, surgical procedures, and toxicity studies
- **Computational & Analysis:** Basic bioinformatics, primer design, BLAST, GraphPad Prism, ImageJ

First/First co-authors Publications (Bold Name)

1. **Khan, A.W.** et al. (2025). Discovery of a Novel Selective Small Molecule Interleukin-36 Receptor Antagonist for Inflammation and Cancer. *Biochemical Pharmacology*.
2. **Khan, A.W.** et al. (2025). Discovery of Selective TLR9 Antagonists via Machine Learning–Driven Structural Modeling and Experimental Validation. *International Journal of Biological Macromolecules*.
3. Mariya Bilal, **Khan, A.W.** et al. (2025). Molecular and Functional Characterization of a Novel TLR9- Specific DNA Aptamer with Therapeutic Potential. *International Immunopharmacology*.
4. Naila, **Khan, A. W.** et al., (2026). Generative AI uncovers novel Chrebp/Txnip axis inhibitors with potential anti-inflammatory activity, *Journal of Chemical Information and Modeling*.
5. Farooq M., Hwang, Khan A. W. (2025). Identification of a Novel Fibroblast Growth Factor Receptor-Agonistic Peptide and its Effect on Diabetic Wound Healing. *Life Sciences*, 364, 123432.
6. Farooq M.... Khan A. W. (2025). Rational Design and Therapeutic Potential of Myd88 Inhibitory Peptide in Psoriasis. *Biomedicine & Pharmacotherapy*, 183, 117801.
7. Nasir, **Khan, A.W.** et al. (2024). Pharmacological and Computational Evaluation of an Isoxazolone Derivative for Mitigating Cisplatin-Induced Neuropathic Pain. *Arabian Journal of Chemistry*, 17(1), 105454.
8. **Khan, A. W.** et al. (2022). Potential biomedical applications of *Araucaria araucana* as an antispasmodic, bronchodilator, vasodilator, and antiemetic: Involvement of calcium channels. *Journal of ethnopharmacology*, 298, 115651.
9. **Khan, A.W.** Khan A. U. (2019). Antidepressant Effect of *Solanum surattense* Burm. f. *Journal of Ethnopharmacology*.
10. **Khan, A.W.** et al. (2017). Anticonvulsant, Anxiolytic, and Sedative Activities of *Verbena officinalis*. *Frontiers in Pharmacology*, 7, 499.

Other Publications

11. Naila, **Khan A. W.** et al., (2026). Predictive neural networks accelerate identification of mechanistically validated small-molecule modulators of TLR7 signaling. *Biochemical Pharmacology*, 118176.
12. **Khan, A.W.** et al. (2023). Autoimmune Neuroinflammatory Diseases: Role of Interleukins. *International Journal of Molecular Sciences*, 24(9), 7960.
13. **Khan, A.W.** et al. (2023). Therapeutic Potential of Plant-Derived Metabolites in Spinal or Sciatic Injury-Induced Neuropathic Pain. *Frontiers in Pharmacology*, 14, 1251613.

14. **Khan, A. W.** et al. (2022). Role of Plant-Derived Active Constituents in Cancer Treatment and Their Mechanisms of Action. *Cells*, 11(8), 1326.
15. Faheem, **Khan A. W.** et al. (2022). Antiepileptic Properties of Medicinal Plants. *Arabian Journal of Chemistry*, 15(1), 103478.
16. **Khan, A. W.** et al. (2019). Antiplatelet and Antioxidant Activities of Tomato. *Journal of Food and Nutrition Research*, 7(6), 435.
17. **Khan, A.W.** et al. (2019). An Updated List of Neuromedicinal Plants of Pakistan: Their Uses and Phytochemistry. *Evidence-Based Complementary and Alternative Medicine*, 2019, 6191505.
18. Bashir S.... Khan A.W. et al. (2025). Pharmacological and Computational Investigations of Isosteviol 16-oxime for Attenuating Streptozotocin-induced Diabetic Neuroinflammation utilizing rat as Animal Model. *International Immunopharmacology*, 153, 114506
19. Faheem M.... Khan A.W. et al. (2022). Neuroprotective Effect of Natural Compounds in Paclitaxel-Induced Chronic Inflammatory Pain. *Molecules*, 27(15), 4926.
20. Farooq M.... Khan A. W. et al. (2021). Role of FGF Signaling in Tissue Repair and Regeneration. *Cells*, 10(11), 3242.
21. Farooq M.... Khan A. W. et al. (2022). Therapeutic Targeting of Innate Immune Receptors against SARS-CoV-2. *Frontiers in Pharmacology*, 13, 915565.
22. Faheem, M.... Khan, A. W. et al. (2021). Investigation of 1, 3, 4 Oxadiazole Derivative in PTZ-Induced Neurodegeneration: A Simulation and Molecular Approach. *Journal of Inflammation Research*, 5659-5679.
23. Iqbal, M.S... Khan A.W. (2021). Behavior of Pharmacists and Satisfaction of Patients in Coronavirus Disease-19 Pandemic. *Asian Journal of Pharmaceutics (AJP)*, 15(1).
24. Bashir, S.... Khan, A. W. et al. (2020). Students' perception of the learning environment in private-sector pharmacy institutes of Pakistan. *Pharmacy Education*, 20, 191-197.
25. Faheem M.... Khan A. W. et al. (2020). 1, 3, 4-Oxadiazole Derivative Attenuates Chronic Constriction Injury Induced Neuropathic Pain: A Computational, Behavioral, and Molecular Approach. *Brain Sciences*, 10(10), 731.

Education

PhD in Pharmaceutical Sciences (Pharmacology & Drug Discovery) Ajou University, South Korea | CGPA: 4.02/4.5 Thesis: Discovery and pharmacological investigation of selective Small-Molecule IL-36R and TLR9 Antagonists for Autoimmune Diseases and Inflammation. Supervisor: Prof. Sangdun Choi

MPhil in Pharmacology Riphah International University, Pakistan | CGPA: 3.67/4.0 Thesis: Neuropharmacological Effects of *Solanum surattense* and *Verbena officinalis*

Doctor of Pharmacy (PharmD) Kohat University of Science and Technology, Pakistan | CGPA: 3.3/4.0 Project: Clinical Assessment of Diabetes Mellitus

Awards & Honors

- Outstanding PhD Thesis Award, Ajou University, 2026
- Brain Korea 21 (BK21) Best Research Paper Award, 2026

- Brain Korea 21 PhD Fellowship Recipient, 2021
- National Testing Service Pakistan Scholarship for Master, 2017
- National Bank of Pakistan Student Scholarship for Bachelor, 2013

Academic & Professional Experience

Senior Lecturer & Supervisor (Pharmacology) Ibadat International University, Pakistan | 2016–Present - Supervising MPhil and PharmD research projects - Teach Pharmacology, Pathology, Physiology, Biochemistry and Cancer Biology - Train students in animals' disease models and experimental design

Professional Skills

- Scientific writing and peer-reviewed publishing
- Independent project leadership
- Grant-oriented thinking
- International and multicultural collaboration

References

- Dr. Sangdun Choi (Supervisor) – Ajou University | sangdunchoi@ajou.ac.kr
- Dr. Muhammad Haseeb (Projects Supervisor) – Brain Science Institute-KIST | haseeb@kist.re.kr ; haseeb@ajou.ac.kr
- Dr. Masaud Shah (Lab-Mate)– Ajou University | masaud@ajou.ac.kr