

DR. ABDUL BARI SHAH

Natural Product Chemistry • Bioinformatics • AI & Machine Learning

abs.uom28@gmail.com | a.shah@kbtu.kz | abdul.shah@kaznu.edu.kz | +7 702 987 2366

Almaty, Kazakhstan | Nationality: Pakistani | [LinkedIn](#) | [Google Scholar](#) | [ResearchGate](#)

PROFESSIONAL SUMMARY

Natural product chemist working at the interface of chemistry, bioinformatics, and AI & machine learning, with a decade of research and teaching experience spanning Pakistan, South Korea, and Kazakhstan. Specializes in the isolation, structural characterization, and bioactivity evaluation of metabolites from plants, fungi, and bacteria, integrating network pharmacology, molecular docking, LC-MS/MS-based analysis, and data-driven computational approaches. Author of 60+ peer-reviewed publications (several in Q1 journals including *Natural Product Reports*, *Gut Microbes*, and *npj Biofilms and Microbiomes*), with an established record of postgraduate teaching, curriculum delivery, and international collaboration. Currently Associate Professor at the Kazakh-British Technical University (KBTU) and Al-Farabi Kazakh National University (KazNU), and a Brain Pool Scientist of the National Research Foundation of Korea.

ACADEMIC & PROFESSIONAL EXPERIENCE

Associate Professor *September 2026 – Present*

Kazakh-British Technical University (KBTU), Almaty, Kazakhstan

Focus: Natural product chemistry, bioinformatics, and AI & machine learning applications in chemistry and chemical engineering; research and teaching

Associate Professor Researcher *2025 – Present*

Faculty of Chemistry and Chemical Technology, Al-Farabi Kazakh National University, Almaty, Kazakhstan

Research: Natural products, systems pharmacology, LC-MS, molecular networking, network pharmacology, and molecular docking & simulation (bioinformatics)

Teaching (Undergraduate & Graduate): Selected Chapters of Pharmaceutical Chemistry; Innovative Drug Design Technologies; Modern Trends in the Development of Chemistry and Technology of Synthetic Drugs; Introduction to Pharmacology; Regulatory Framework for Drug Registration and Pharmacological Supervision

Other subjects taught: General Chemistry, Natural Product Chemistry, Advanced Biochemistry, Pharmacology, Instrumental Analysis, Research Methodology

Brain Pool Scientist *Present*

Brain Pool Program, National Research Foundation of Korea (NRF)

Research Scientist — Joint Research Projects *2025 – 2026*

The Research Center for Medicinal Plants, Al-Farabi Kazakh National University, Almaty, Kazakhstan

Focus: Natural product chemistry, bioinformatics, project organization, experimental/technical design, data analysis, commercialization of plant materials and publication & dissemination

Research Professor *2024 – 2025*

College of Pharmacy, Korea University, Sejong 30019, Republic of Korea

Focus: Natural product isolation, LC-MS, molecular networking, cell-based assays, enzyme kinetics, network pharmacology, molecular docking & simulation (bioinformatics), and graduate teaching

Postdoctoral Research Associate *2023 – 2024*

Natural Products Research Institute, College of Pharmacy, Seoul National University, Seoul 08826, South Korea

Focus: Natural product isolation from bacteria, fungi and plants; food microbes/human microbiota; LC-MS; biological activity assays; and supervision of graduate students

Research Assistant *2017 – 2018*

Department of Chemistry (Biochemistry), University of Malakand, Pakistan

Focus: Application of NF/RO membranes, biodegradation of dyes, and teaching graduate students

EDUCATION

Ph.D., Applied Life Science (Organic and Natural Product Chemistry) 2020 – 2023

Gyeongsang National University, Jinju, South Korea

Modules: Natural product isolation and characterization from plants, enzyme kinetics, bacterial biofilm, LDL-oxidation, cell culture

Result: 4.32 / 4.50 — A+ (Outstanding)

MSc, Applied Life Science (Organic and Natural Product Chemistry) 2018 – 2020

Gyeongsang National University, Jinju, South Korea

Modules: Natural product isolation and characterization from plants, enzyme kinetics, advanced instrumental analysis, advanced biochemistry

Result: 4.38 / 4.50 — A+ (Outstanding)

BS (Honours), Chemistry (Specialization: Biochemistry) 2012 – 2016

University of Malakand, Pakistan

Modules: Biochemistry, organic chemistry, nutritional biology, physiology, analytical chemistry, inorganic chemistry, physical chemistry

Result: 3.69 / 4.00 — A+ (Outstanding)

DOCTORAL & MASTER'S THESES

Ph.D. Dissertation: "Identification of Phenolic Metabolites from *Artocarpus elasticus* Leaves and Their Application to PTP1B and DPP-IV Inhibitions"

Master's Dissertation: "Ugonins from *Helminthostachys zeylanica* Displaying α -Glucosidase and Protein-Tyrosine Phosphatase 1B Inhibitions"

RESEARCH INTERESTS & EXPERTISE

Current Research in Progress

- Isolation of bioactive metabolites from natural sources and their biological evaluation
- Network pharmacology and molecular docking of bioactive substances
- AI & machine learning for natural product discovery, bioactivity prediction, and chemical process design

Core Research Areas & Skills

- Bioactive compound isolation from bacteria, fungi, and plants
- Media optimization for human microbiota and probiotics
- Molecular networking (GNPS, Antimarin, etc.)
- Network pharmacology and molecular docking/simulation
- Lead-compound discovery via RP-HPLC, MPLC, Sephadex LH-20, silica, ODS, and MCI-gel chromatography
- Structural characterization by NMR (1D & 2D), mass spectrometry, and LC-MS
- Enzyme inhibition studies: bacterial neuraminidase, protein tyrosine phosphatase, acetylcholinesterase/butyrylcholinesterase, α -glucosidase, tyrosinase, DPP-4, human neutrophil elastase, β -secretase, xanthine oxidase
- Antioxidant evaluation for LDL oxidation (TBARS, conjugated dienes, relative electrophoretic mobility)
- Application of lead compounds to cell-based studies and bacterial biofilm inhibition
- Enhancement of plant metabolites via phytohormone treatment (greenhouse and field studies)
- Synthesis of thiourea derivatives via photochemical methods; dye degradation using bacteria and nanoparticles

RESEARCH GRANTS, PROJECTS & FELLOWSHIPS

Funded Research Projects (Last Two Years)

- **Scientific Consultant**, Project AP19577056 — "Development Technology of Cultivation of *Cichorium intybus* L., Investigation of Secondary Metabolites and Their Antidiabetic and Hepatoprotective Effects." LLP Research Institute of Natural Products and Technologies, Almaty, Kazakhstan. **2025 (Jan – Dec)**. Engaged on a consulting basis to provide expert scientific advice, methodological support, and consultation on research direction, experimental design, and publication strategy.
- **Contributing Researcher**, Projects RS-2019-NR040070 and RS-2021-NR058871 — funded by the National Research Foundation of Korea (NRF), Korean Government. College of Pharmacy, Korea University, Sejong, Republic of Korea. **Sept 2024 – Aug 2025**. Contributed to project planning, execution, and management, demonstrating leadership,

research expertise, and collaborative skills (certified by Prof. Ki Yong Lee, Director, Korea University Library, Sejong).

Fellowships

- **Brain Pool Fellowship**, Brain Pool Program, National Research Foundation of Korea — **Awarded**
- **Applicant**, Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowship, European Commission — **2024 (Applied)**

BIO-STATISTICAL & SOFTWARE SKILLS

SigmaPlot • MestReNova • Agilent MassHunter • ChemDraw • Cytoscape • GraphPad Prism • Online databases for network pharmacology • Molecular docking & scoring software

SCHOLARSHIPS & AWARDS

- Young Pioneer Research Award (×2) — Excellent research performance, 2021 & 2022
- BK21+ (Brain Korea 21 Plus) Scholarship — for master's and Ph.D. studies
- BK21 Four (Brain Korea 21 Four) Scholarship — for Ph.D. studies
- Best Scholarship Award, Department of Environmental Life Chemistry, Gyeongsang National University, South Korea (2019)

SEMINARS & CONFERENCE PRESENTATIONS

- The 5th International Conference on Herbal and Traditional Medicine 2026 (HTM2026), Bangkok, Thailand — Oral Presentation: "Advanced system pharmacology and molecular docking approaches revealing the multi-target antioxidant mechanisms of *Psoralea corylifolia*"
- International Conference on Medicinal Plants and Natural Drug Research, June 2024, Almaty, Kazakhstan — Oral Presentation: "Targeting Bacterial Neuraminidase: Harnessing the Potency of Ugonins for Inhibitory Action and Biofilm Disruption"
- 54th Annual Meeting & Symposium of the Korean Society of Pharmacognosy (KSP), Nov 2023, Seoul, Korea
- 55th Annual Meeting & Symposium of the Korean Society of Pharmacognosy (KSP), Nov 2024, Seoul, Korea
- International Symposium and Annual Meetings of the Korean Society for Applied Biological Chemistry, South Korea (2019 Busan; 2020 Seoul; 2020 Online; 2021 Jeju; 2022 Daegu; 2023 Jeju)
- International GNU Symposium on Agrobiotechnology, South Korea
- 1st International Conference on Modeling and Simulation of Emerging Materials, Pakistan
- 27th National & 15th International Chemistry Conference, University of Malakand, Pakistan

PUBLICATIONS

14 publications as First / Principal Author and 50 as Co-Author — 64 peer-reviewed publications in total, including papers in *Gut Microbes*, *Natural Product Reports*, *npj Biofilms and Microbiomes*, and *Scientific Reports*.

denotes equal contribution; † denotes corresponding author.

First / Principal / Corresponding Author Publications

1. Yu, H.#; **Shah, A.B.#**; Moon, H.; Kang, M.; Lee, H.; Kim, H.; Lee, K.S.; Byun, Y.; Jung, Y.W.; Lee, K.Y.; Jeo, Y.H. Stilbenoids from *Vitis amurensis* bind to the GATA-3 DNA-binding domain and inhibit the transcription by GATA-3. *Journal of Natural Products*, 2026. <https://doi.org/10.1021/acs.inatprod.5c01559> (IF: 3.7, Q1)
2. **Shah, A.B.**; Kim, Y.J.; Lee, K.S.; Han, S.H.; Byun, Y.; Lee, K.Y. Natural products modulating interleukin-mediated pathways for anti-allergic and immunomodulatory effects. *Natural Product Reports*, 2026. <https://doi.org/10.1039/D5NP00074B> (IF: 12.5, Q1)
3. **Shah, A.B.**; Khan, M.T.; Ullah, S.; Baiseitova, A.; Idrees, M.; Kong, I.-K.; Park, K.H. Dual inhibition of PTP1B and DPP-IV by metabolites from *Artocarpus elasticus* leaves enhances insulin signaling and sensitivity. *Journal of Pharmaceutical Innovation*, 2026, 21(6), 563. <https://doi.org/10.1007/s12247-026-10799-1> (IF: 2.6, Q2)
4. **Shah, A.B.**; Cho, H.J.; Shim, S.H. Exploring the bioactive landscape: peptides and non-peptides from the human microbiota. *npj Biofilms and Microbiomes (Nature)*, 2025, 11:76. <https://doi.org/10.1038/s41522-025-00713-x> (IF: 11.4, Q1)

5. **Shah, A.B.;** Baiseitova, A.; Amzeyeva, U.; Shang, X.; Jenis, J. α -Glucosidase inhibition-guided network pharmacology and molecular docking reveal the antidiabetic potential of *Cichorium intybus* as a functional food. *International Journal of Molecular Sciences*, 2025, 26(19), 9497. <https://doi.org/10.3390/ijms26199497> (IF: 5.6, Q1)
6. **Shah, A.B.;** Lee, K.Y. Integrative metabolomics and system pharmacology reveal the antioxidant blueprint of *Psoralea corylifolia*. *Scientific Reports*, 2025, 15, 28632. <https://doi.org/10.1038/s41598-025-14469-z> (IF: 4.9, Q1)
7. Jan, M.#; **Shah, A.B.#;** Al-Joufi, F.A.; Zahoor, M.; Esa, M.; Rashid, H.U.; Gulfam, N.; Shahzad, M.S.; Haseena. Isolation, characterization, antidiabetic and antityrosinase potentials of compounds isolated from *Anabasis articulata*. *Applied Food Research*, 2025, 100949. <https://doi.org/10.1016/j.afres.2025.100949> (IF: 5.4, Q1)
8. **Shah, A.B.;** Shim, S.H. Human microbiota peptides: important roles in human health. *Natural Product Reports*, 2024. <https://doi.org/10.1039/D4NP00042K> (IF: 12.5, Q1)
9. **Shah, A.B.†;** Baiseitova, A.; Zahoor, M.; Ahmad, I.; Ikram, M.; Bakhsh, A.; Shah, M.A.; Ali, I.; Idress, M.; Ullah, R.; Nasr, F.A.; Al-Zharani, M. Probiotic significance of *Lactobacillus* strains: a comprehensive review on health impacts, research gaps, and future prospects. *Gut Microbes*, 2024, 16(1), 2431643. <https://doi.org/10.1080/19490976.2024.2431643> (IF: 15.3, Q1)
10. **Shah, A.B.;** Baiseitova, A.; Kim, Y.J.; Lee, K.Y. Therapeutic potential of ugonins: bioactive flavonoids from *Helminthostachys zeylanica* with multifaceted biological activities. *Planta Medica*, 2026, 92(02), 112–122. <https://doi.org/10.1055/a-2717-2323> (IF: 2.1, Q2)
11. **Shah, A.B.;** Baiseitova, A.; Lee, G.; Kim, J.H.; Park, K.H. Investigation of responsible phenolic metabolites for PTP1B inhibition from *Artocarpus elasticus*. *ACS Omega*, 2024, 9(8), 9053–9062. <https://doi.org/10.1021/acsomega.3c07471> (IF: 5.2, Q1)
12. Baiseitova, A.#; **Shah, A.B.#;** Idress, M.; Kong, L.K.; Park, K.H. Antioxidant potentials of furanodihydrobenzoxanthones from *Artocarpus elasticus* and their protection against oxLDL-induced injury in SH-SY5Y cells. *Biomedicine & Pharmacotherapy*, 2023, 165, 115278. <https://doi.org/10.1016/j.biopha.2023.115278> (IF: 7.5, Q1)
13. **Shah, A.B.;** Baiseitova, A.; Kim, J.H.; Lee, Y.H.; Park, K.H. Inhibition of bacterial neuraminidase and biofilm formation by ugonins isolated from *Helminthostachys zeylanica* (L.) Hook. *Frontiers in Pharmacology*, 2022, 13, 10. <https://doi.org/10.3389/fphar.2022.890649> (IF: 5.4, Q1)
14. **Shah, A.B.;** Yoon, S.; Kim, J.H.; Zhumanova, K.; Ban, Y.J.; Lee, K.W.; Park, K.H. Effectiveness of cyclohexyl functionality in ugonins from *Helminthostachys zeylanica* to PTP1B and α -glucosidase inhibitions. *International Journal of Biological Macromolecules*, 2020, 165, 1822–1831. <https://doi.org/10.1016/j.ijbiomac.2020.10.061> (IF: 8.7, Q1)

Co-Author Publications

1. Otegenova, B.; Berganayeva, G.; Kudaibergenova, B.; Szydłowska-Czerniak, A.; Adeloye, A.O.; Dyusebaeva, M.; **Shah, A.B.†.** Phytochemical evaluation, nutritional and pharmacological values of *Trigonella foenum-graecum* plant: a comprehensive review. *Frontiers in Chemistry*, 2026, 14, 1849521. <https://doi.org/10.3389/fchem.2026.1849521> (IF: 5.3, Q1)
2. Ali, J.; Akram, M.; Zahoor, M.; **Shah, A.B.†;** Alotaibi, A. Solvent-dependent bioactive composition and antifungal potential of neem (*Azadirachta indica*) seed extracts against mycotoxigenic *Aspergillus* species. *Chemistry & Biodiversity*, 2026. <https://doi.org/10.1002/cbdv.202503312> (IF: 2.5, Q2)
3. Han, Y.K.; Kim, Y.; Vinh, L.B.; **Shah, A.B.;** Lee, K.S.; Park, B.; Lee, K.Y. Identification of anti-inflammatory constituents of *Lindera glauca* using cell extraction coupled with LC-QTOF MS/MS. *Natural Product Research*, 2025. <https://doi.org/10.1080/14786419.2025.2602916> (IF: 1.6, Q2)
4. Zahoor, M.; Javid, A.; Siddique, M.; Akram, M.; **Shah, A.B.†;** Alotaibi, A. Phytochemical characterization, mycotoxigenic fungi inhibition and aflatoxin detoxification using *Ocimum basilicum* whole seed extracts. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, 2026, 54. <https://doi.org/10.15835/nbha54114794> (IF: 1.3, Q2)
5. Hasan, F.; Thippamma, K.; Kumar, V.; Baiseitova, A.; Ikram, M.; **Shah, A.B.†.** Natural products targeting Alzheimer's disease via NF- κ B pathway: a review. *CNS & Neurological Disorders — Drug Targets*, 2025. <https://doi.org/10.2174/0118715273397045250922054643> (IF: 3.0, Q2)
6. Jenis, J.; Minkayeva, A.; Yessimova, O.; Kumargaliyeva, S.; **Shah, A.B.;** Karunakaran, T.; Gulnur, K.; Aisa, H.A.; Baiseitova, A. Comparative phytochemical, colloidal, and antioxidant profiling of *Artemisia albida*, *Artemisia leucodes*, and *Artemisia scopaeformis*: potentials for cosmeceutical and nutraceutical applications. *Molecules*, 2025. <https://doi.org/10.3390/molecules30214165> (IF: 4.6, Q1)
7. Baiseitova, A.; Amzeyeva, U.; Tolepbergen, A.; Ulfanova, Y.; Shybyray, Y.; Dai, L.; Shang, X.; **Shah, A.B.;** Kim, J.Y.; Jenis, J. Response surface methodology optimization on ultrasonic-assisted extraction of chicory (*Cichorium*

intybus L.) and their UPLC-ESI-QTOF-MS analysis, antioxidant and hepatoprotective activity. *eFood*, 2025, 6:e70081. <https://doi.org/10.1002/efd2.70081> (IF: 5.7, Q1)

8. Ullah, I.; Afzal, S.; Hamyun, M.; Gulfam, N.; Khalil, M.S.; Zahoor, M.; **Shah, A.B.**; Ullah, R.; Ali, E.A. Characterization and pharmacological insights into silver nanoparticles derived from *Juncus articulatus* L. *Applied Organometallic Chemistry*, 2025, 39:e70284. <https://doi.org/10.1002/aoc.70284> (IF: 3.7, Q1)
9. Bilal, H.; Khan, M.A.; Shah, S.W.A.; Ghias, M.; Khan, A.; Zahoor, M.; Ullah, R.; Iqbal, Z.; **Shah, A.B.** Protective effect of *Helicteres isora*, an efficient candidate on hepatorenal toxicity and management of diabetes in animal models. *Open Chemistry*, 2025, 3:20250133. <https://doi.org/10.1515/chem-2025-0133> (IF: 1.9, Q3)
10. Naz, S.; Ullah, H.; Zahoor, M.; Khan, A.; **Shah, A.B.**; Ullah, R.; Ali, E.A. Synthesis and exploration of the anti-inflammatory and antioxidant potential of silver nanoparticles of propolis and GC-MS profiling. *Applied Organometallic Chemistry*, 2025, 39:e70182. <https://doi.org/10.1002/aoc.70182> (IF: 3.7, Q1)
11. Ali, J.; Hussain, A.; Siddique, M.; Ikram, M.; Zahoor, M.; Ullah, R.; Gulfam, N.; **Shah, A.B.** Fungicidal effect of *Azadirachta indica* extracts against pathogenic fungi *Rhizopus stolonifer* and *Monilinia fructicola* in postharvest peaches. *Discover Plants*, 2025, 2:1–14. <https://doi.org/10.1007/s44372-025-00211-6>
12. Rashid, H.U.; Khan, S.W.; Latif, A.; Nayab, S.; Umar, M.N.; Sana, F.; **Shah, A.B.**; Zahoor, M.; Ullah, R.; Ali, E.A. Synthesis, in vitro and in-silico evaluation of amide derivatives as prospective antimicrobial and antileishmanial agents. *Future Medicinal Chemistry*, 2025, 17, 789–802. <https://doi.org/10.1080/17568919.2025.2479419> (IF: 3.4, Q2)
13. Bibi, C.; Khan, R.S.; Akbar, F.; Esa, M.; Zahoor, M.; Ullah, R.; Shahat, A.A.; **Shah, A.B.** Symptomatic evidence of begomovirus disease in vegetable crops reported from selected districts of Khyber Pakhtunkhwa, Pakistan. *Applied Ecology and Environmental Research*, 2025, 23(3), 4203–4216. http://dx.doi.org/10.15666/aeer/2303_42034216 (IF: 0.6, Q4)
14. Drick, M.; Wan Salleh, W.M.N.H.; Ab Ghani, N.; Rasol, N.E.; Salihu, A.S.; **Shah, A.B.**; Sungthong, B. Lipoxigenase inhibitory activity of phytoconstituents isolated from the rhizomes of *Boesenbergia albosanguinea* (Ridl.) Loes. *Bulletin of the Chemical Society of Ethiopia*, 2025, 39, 1167–1176. <https://dx.doi.org/10.4314/bcse.v39i6.11> (IF: 2.3, Q3)
15. Vinh, L.B.; Lee, K.S.; Han, Y.K.; Kim, Y.J.; Kim, S.; **Shah, A.B.**; Byun, Y.; Lee, K.Y. Allergy inhibition using naturally occurring compounds targeting thymic stromal lymphopoietin pathways: a comprehensive review. *Biomolecules & Therapeutics*, 2025, 33, 249–267. <https://doi.org/10.4062/biomolther.2024.177> (IF: 3.2, Q2)
16. Ali, J.; Hussain, A.; Ikram, M.; Siddique, M.; Zahoor, M.; Ullah, R.; Ibrahim, M.A.; Gulfam, N.; **Shah, A.B.** Application of *Azadirachta indica* (neem) organic crude macerated extracts against postharvest decay of fruits caused by *Penicillium expansum*, *Colletotrichum gloeosporioides* and *Botrytis cinerea*. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, 2025, 53, 14086. <https://doi.org/10.15835/nbha53114086> (IF: 1.3, Q3)
17. Khan, S.; Ullah, I.; Rahman, M.U.; Khan, H.; **Shah, A.B.**; Althomali, R.H.; Rahman, M.M. Inorganic-polymer composite electrolytes: basics, fabrications, challenges and future perspectives. *Reviews in Inorganic Chemistry*, 2024. <https://doi.org/10.1515/revic-2023-0030> (IF: 3.1, Q2)
18. Rehman, F.; **Shah, A.B.**†; Muhammad, M.; Khan, E.; Ataya, F.S.; Batiha, G.E. Antioxidant, antibacterial, enzyme inhibition and fluorescence characteristics of unsymmetrical thiourea derivatives. *Heliyon*, 2024, 10, e31563. <https://doi.org/10.1016/j.heliyon.2024.e31563> (IF: 4.0, Q1)
19. Mehboob, Z.; Sharif, S.; Lodhi, M.S.; **Shah, A.B.**; Romman, M.; Nayila, I. Phytochemical profiling and anticancer potential of *Gardenia latifolia* extracts against arsenic trioxide-induced liver fibrosis in a rat model. *Frontiers in Pharmacology*, 2024, 15. <https://doi.org/10.3389/fphar.2024.1389024> (IF: 4.8, Q1)
20. Shah, S.H.A.; Nisar, M.; Ihsan, M.; Zahoor, M.; Ullah, R.; Iqbal, Z.; **Shah, A.B.** Estimation of genetic polymorphism in quince (*Cydonia oblonga* Mill.) genotypes using morphological traits and molecular (DNA barcoding) characterizations. *PLOS ONE*, 2024, 19(11), e0310048. <https://doi.org/10.1371/journal.pone.0310048> (IF: 2.6, Q2)
21. Lee, Y.H.; Kim, J.H.; Baiseitova, A.; **Shah, A.B.**; Im, S.Y.; Kim, J.Y.; Lee, Y.B.; Park, K.H. Selective induction of furanocoumarins in *Angelica acutiloba* roots by the signaling molecule ethylene and their monoamine oxidase inhibition. *Industrial Crops and Products*, 2024, 213, 118418. <https://doi.org/10.1016/j.indcrop.2024.118418> (IF: 6.2, Q1)
22. Latif, M.; Zahoor, M.; Muhammad, A.; Naz, S.; Kamran, A.W.; Ullah, R.; **Shah, A.B.**; Almeer, R.; Sayed, A. Bioaccumulation of lead in different organs of *Ctenopharyngodon idella* (grass fish) and *Tor putitora* (mahseer) fish. *Brazilian Journal of Biology*, 2024, 84, e260355. <https://doi.org/10.1590/1519-6984.260355> (IF: 1.6)
23. Kim, J.H.; Jeong, Y.J.; Lee, Y.H.; **Shah, A.B.**; Kim, C.H.; Park, K.H. 1-Aminocyclopropane-1-carboxylic acid enhances phytoestrogen accumulation in soy plants (*Glycine max* L.) by accelerating the isoflavone biosynthetic pathway.

Journal of Agricultural and Food Chemistry, 2023, 71, 10393–10402. <https://doi.org/10.1021/acs.jafc.3c01810> (IF: 6.2, Q1)

24. Kim, J.Y.; Lee, Z.P.; Lee, G.H.; Kim, J.H.; **Shah, A.B.**; Lee, Y.H.; Park, K.H. Investigation of bacterial neuraminidase inhibition of xanthones bearing geranyl and prenyl groups from *Cratoxylum cochinchinense*. *Frontiers in Chemistry*, 2023, 11. <https://doi.org/10.3389/fchem.2023.1245071> (IF: 4.2, Q2)
25. Lee, Y.H.; Wang, Y.; Kim, J.Y.; Lee, G.H.; Kim, J.H.; **Shah, A.B.**; Park, K.H. Enzymatic evaluation of chromenone derivatives from *Flemingia philippinensis* as viral neuraminidase (H3N2) inhibitors. *Journal of Molecular Structure*, 2023, 1293, 136243. <https://doi.org/10.1016/j.molstruc.2023.136243> (IF: 4.7, Q2)
26. Bibi, C.; Hadi, F.; Ali, N.; Zahoor, M.; Zeb, M.; Ullah, R.; Ali, E.A.; **Shah, A.B.** Cold-acclimation effect on cadmium absorption and biosynthesis of polyphenolics, free proline and photosynthetic pigments in *Spirogyra aequinoctialis*. *Open Chemistry*, 2023, 21, 20230127. <https://doi.org/10.1515/chem-2023-0127> (IF: 1.9, Q3)
27. Khan, S.; Rahman, F.U.; Zahoor, M.; Haq, A.U.; **Shah, A.B.**; Rahman, M.U.; Rahman, H.U. The DNA threat probing of some chromophores using UV/VIS spectroscopy. *World Journal of Biology and Biotechnology*, 2023, 8, 2. <https://doi.org/10.33865/wjb.008.02.0962> (IF: 4.2)
28. Ullah, Z.; Islam, N.; Ikram, M.; Zahoor, M.; Nazir, M.; Naz, S.; Ullah, R.; Bari, A.; **Shah, A.B.** Heavy metal transportation from polluted water into humans through fodder plants and farmed animals. *Zeitschrift für Physikalische Chemie*, 2023. <https://doi.org/10.1515/zpch-2023-0212> (IF: 3.2, Q3)
29. Kim, J.H.; **Shah, A.B.**; Lee, Y.H.; Baiseitova, A.; Ban, Y.J.; Park, K.H. Changes in secondary metabolites in soybean (*Glycine max* L.) roots by salicylic acid treatment and their anti-LDL oxidation effects. *Frontiers in Plant Science*, 2022, 13, 1000705. <https://doi.org/10.3389/fpls.2022.1000705> (IF: 4.8, Q1)
30. Baiseitova, A.; Ban, Y.J.; Kim, J.Y.; Lee, G.; **Shah, A.B.**; Kim, J.H.; Lee, Y.H.; Park, K.H. Soybean phytochemicals responsible for bacterial neuraminidase inhibition and their characterization by UPLC-ESI-TOF/MS. *Food & Function*, 2022, 13(13), 6923–6933. <https://doi.org/10.1039/D2FO00537A> (IF: 5.4, Q1)
31. Baiseitova, A.; Lee, G.; **Shah, A.B.**; Yoon, S.; Kim, J.H.; Lee, Y.H.; Park, K.H. New dihydrobenzoxanthone derivatives with bacterial neuraminidase inhibitory activity isolated from *Artocarpus elasticus*. *Bioorganic Chemistry*, 2022, 127, 105978. <https://doi.org/10.1016/j.bioorg.2022.105978> (IF: 4.7, Q1)
32. Ikram, M.; Zahoor, M.; Naeem, M.; Islam, N.U.; **Shah, A.B.**; Shahzad, B. Bacterial oxidoreductive enzymes as molecular weapons for the degradation and metabolism of toxic azo dyes in wastewater: a review. *Zeitschrift für Physikalische Chemie*, 2022. <https://doi.org/10.1515/zpch-2022-0150> (IF: 3.2, Q3)
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BOOKS, CHAPTERS & EDITORIAL ROLES

Books & Book Chapters

1. **Shah, A.B.**; Baiseitova, A. *From Mortar to Machine: Evolution of Metabolite Isolation Techniques in Natural Products Research*. Springer Nature Monograph — book proposal accepted, manuscript in preparation.
2. **Shah, A.B.**; Baiseitova, A.; Zahoor, M. (Eds.) *Bridging Traditional and Modern Medicine with Phytopharmaceuticals: From Heritage to Innovation*. Bentham Science Publishers, under process, 2026 (Edited Book).
3. **Shah, A.B.**; Baiseitova, A. Endophytes as a Source of Antioxidant and Antiaging Agents. Invited book chapter, Taylor & Francis / Apple Academic Press. In press.
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5. **Shah, A.B.**; Baiseitova, A. Genistein's Role in Menopause and Hormonal Balance. Book chapter (with editor).
6. **Shah, A.B.**; Baiseitova, A. Pharmaceutical Chemistry: Drug Design and Structural Modification. Book chapter (with editor).

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REFERENCES

Prof. Ki Hun Park *Professor; Ph.D. & M.Sc. Advisor*

Division of Applied Life Science, Gyeongsang National University, Jinju, South Korea

Email: khpark@gnu.ac.kr

Prof. Mohammad Zahoor *Professor; Undergraduate Advisor*

Department of Biochemistry, University of Malakand, Chakdara (Dir), Pakistan

Email: mohammadzahoorus@yahoo.com

Prof. Aizhamal Baiseitova *Assistant Professor; Senior Colleague*

Faculty of Chemistry and Chemical Technology, Al-Farabi Kazakh National University, Kazakhstan

Email: aizhabaiseitova@gmail.com