



Dr. Samer Y. Al-Qaraleh, Ph.D.
Lecturer | Microbiology

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Professional Summary

A dedicated Lecturer and Researcher with a Ph.D. in Biological Sciences, specializing in the Nanobiotechnology/Medical applications. Expertise lies in the green synthesis of selenium nanoparticles for enhanced anti-cancer and antibacterial activities and their development as drug delivery systems. Demonstrated research excellence with a Scopus h-index of 9 and 256 total citations. Proven leadership in academic administration, curriculum development, and managing research teams. Committed to advancing knowledge through high-impact publications and securing competitive research grants.

Education

- **Ph.D.** in Biological Sciences (Microbiology/Nanobiotechnology)
University of Jordan | Amman, Jordan | June 2022
 - **M.Sc.** in Biological Sciences (Microbiology)
Mutah University | Al-Karak, Jordan | September 2014
 - **B.Sc.** in Nutrition and Food Technology
Mosul University | Mosul, Iraq | June 1997
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Academic Appointments

- **Part-time Lecturer**
Faculty of Dentistry, Mutah University | Oct 2024 – Present
- **Part-time Lecturer**
Faculty of Medicine & Pharmacy, Mutah University | Oct 2022 – Oct 2024
- **Part-time Lecturer**
Faculty of Pharmacy, Mutah University | Oct 2022 – Oct 2024

Courses Taught: Cytology, General Biology, Immunology, Medical Microbiology, Epidemiology, Nanotechnology & Polymers, Skin and Hair Biology.

Administrative Leadership

- **Assistant Dean**
Faculty of Dentistry, Mutah University | Oct 2024 – Present

- **Assistant Dean for Quality and E-Learning Affairs**
Faculty of Allied Medical Sciences, Mutah University | Oct 2022 – Oct 2024
 - **Vice President**
Genetic Counseling Society, Faculty of Medicine, Mutah University | Oct 2024 – Present
 - **Secretary of the College Council**
Faculty of Allied Medical Sciences, Mutah University | Oct 2022 – Present
 - **Member, Accreditation and Quality Assurance Committee**
Faculties of Dentistry, Medicine, and Pharmacy, Mutah University | 2022 – Present
 - **Member, Academic Program Development Committee**
Faculty of Allied Medical Sciences, Mutah University | Oct 2022 – Oct 2024
 - **Supervisor, Central Laboratory for Agriculture and Food Research | 2004 – 2022**
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Research Interests

- Development of novel biosensors for detecting cancer biomarkers.
 - Green synthesis and characterization of nanoparticles for bioactivities (anticancer, antioxidant, antimicrobial, anti-inflammatory).
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Technical & Professional Skills

- **Laboratory Techniques:**
 - Cell Culture & Analysis: Human cancer cell lines culture, MTT assay, Fluorescent microscopy.
 - Molecular Biology: PCR techniques, DNA isolation.
 - Microbiology: Bacterial sensitivity tests, proficient in standard microbiological methods.
 - Analytical Chemistry: SEM, FTIR, XRD, UV-spectra, EDX, Atomic Absorption, Microwave Digestion, ELISA.
 - **Research & Management:** Strong leadership, team management, analytical skills, grant writing.
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Grants & Funding

- **Principal Investigator**, "Utilizing Computer Vision and AI to Classify Bacterial Colonies from Agar Plate Images"
Deanship of Scientific Research, Mutah University | 8,000 JD | 2025
 - **Postdoctoral Researcher**, "Development of Microfluidic Biosensor with SERS for Prostate Cancer Biomarker Detection"
Suranaree University of Technology, Thailand | Apr 2024
 - **Financial Grant**, for commercial mushroom production.
Jordanian Enterprise Development Corporation, Ministry of Industry | 15,000 JD.
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Selected Publications

Scopus Metrics: 256 Citations | h-index: 9

1. Musallam D. Al Shawawreha, **Samer Y. Al-Qaraleh**, Aiman Al-Qtaitat, Sara S.Alqaraleh, Almuthna A. Alqtaitat, (2026), Exploring the Relationship Between Trace Mineral Imbalance and Hematological Alterations in Thalassemia. *Research Journal of Pharmacy and Technology*. (Accepted). VOL:19; ISSUE:09. (Q2).

2. Jaffal, S., Thipayarat, A., **Alqaraleh, S.**, Wongwiwat, J., & Supanivatin, P. (2025). Jasmine sambac L. essential oil attenuates inflammation and pain via TRPV1. *Inflammopharmacology*, 33(10), 6099–6110. <https://doi.org/10.1007/s10787-025-01929-1>
3. **Samer Y Al-Qaraleh**; Wael A Al-Zereini; Sawsan A Oran; Osama Y Al-Madanat; Aiman I Al-Qtaitat; and Abdalrahim Alahmad. (2024), Enhanced anti-breast cancer activity of green synthesized selenium nanoparticles by PEGylation: induction of apoptosis and potential anticancer drug delivery system, *Adv. Nat. Sci.: Nanosci. Nanotechnol.* 15 (2024) 025006 (10pp). <https://doi.org/10.1088/2043-6262/ad4bae>. (Q2).
4. **Samer Y. Alqaraleh**; Wael A. Al-Zereini; Nesrin R. Mwafi; Sahar M. Jaffal; Aiman I. Al-Qtaitat. The green synthesis of selenium nanoparticles: a comprehensive review on methodology, characterization, and biomedical applications. *Research Journal of Pharmacy and Technology*. 17, (8): 2024. <https://doi.org/10.52711/0974-360X.2024.00629> (Q2)
5. **Samer Y. Al-Qaraleh**, Wael A. Al-Zereini, Sawsan A. Oran, Ahmad Z. Al-Sarayreh, and Sa'ed M. Al-Dalain. (2022), Evaluation of the antioxidant activities of green synthesized selenium nanoparticles and their conjugated polyethylene glycol (PEG) form *in vivo*. *OpenNano Journal*. <https://doi.org/10.1016/j.onano.2022.100109>. (Q1)
6. **Samer Alqaraleh**, Wael Al-zereini, and Sawsan Oran. (2023), Phyto-decoration of selenium nanoparticles using *Moringa peregrina* (Forssk.) Fiori aqueous extract: chemical characterization and bioactivity evaluation. *Biointerface Research in Applied Chemistry*. 13, (2): 112. <https://doi.org/10.33263/BRIAC132.112>. (Q3, IF: 1.949).
7. **Samer Y. Al-Qaraleh**. (2023), Metallic Nanoparticles Applications in Cosmetology: A Comprehensive Review. *Nanomedicine and Nanotechnology Open Access*. 8, (3). <https://doi.org/10.23880/nnoa-16000238>. (IF: 1.49).
8. Ezz Al-Dein M. Al-Ramamneh, Ayoup M. Ghrair, Ashok K. Shakya, Khalid Y. Alsharafa, Khalid Al-Ismail, **Samer Y. Al-Qaraleh**, Jacek Mojski, and Rajashri R. Naik. (2022). Efficacy of *Sterculia diversifolia* Leaves Extract: Volatile Compounds, Antioxidant and Anti-Inflammatory Activity, and Green Synthesis of Potential Antibacterial Silver Nanoparticles. *Plants*. 11: 2492. <https://doi.org/10.3390/plants11192492>. (Q1, IF: 4.658).
9. Abdalrahim Alahmad, Wael A. Al-Zereini, Tahani J. Hijazin, Osama Y. Al-Madanat, Ibrahim Alghoraibi, Omar Al-Qaraleh, **Samer Al-Qaraleh**, Armin Feldhoff, Johanna-Gabriela Walter, Thomas Scheper. (2022), Green synthesis of silver nanoparticles using *Hypericum perforatum* L. aqueous extract with the evaluation of its antibacterial activity against clinical and food pathogens. *Pharmaceutics* 2022, 14, 1104. <https://doi.org/10.3390/pharmaceutics14051104>. (Q1, IF: 6.734).
10. Al-Maathidy A. Q, Karawya Q, **Al-Qaraleh S. Y**, Al-Qtaitat A. (2023), Histological Study of the Possible Protective Effect of *Spirulina Platensis* on Dibutyl Phthalate (DBP)-Induced Pulmonary Alveolar Changes in Adult Male Albino Rats. *Biomed Pharmacol J*;16(2): 915-926. <https://dx.doi.org/10.13005/bpj/2674>.
11. Ahmad Z Al-Sarayreh, Khaled M Khleifat, Sa'ed M Al-Dalain, Yousef M Al-Saraireh, Yaseen T Al-Qaisi, Ibrahim I Al-Farrayeh, **Samer Y AL-Qaraleh**. (2022), *Globularia arabica* methanolic leaf extract has higher efficacy on burn wound healing in diabetic rats

compared to *Malva sylvestris* methanolic leaf extract. *Journal of Burn Care and research*. <https://doi.org/10.1093/jbcr/irac089>. (Q1, IF: 2.2).

12. Sahar Jaffal, **S.Y. Al-Qaraleh**. (2025), Jasmine sambac L. essential oil attenuates inflammation and pain via TRPV1. *Inflammopharmacology*. (Accepted). (Q1)
13. Sati Y Al –Dalain, Moawiya A. Haddad, **Samer Y Alqaraleh**. (2023), Utilizing Sweet Lupin as anutritional supplement and its therapeutic properties to create chicken burgers that are healthy. *CurrentResearch in Nutrition and Food Science Journal*; 11(1). <https://dx.doi.org/10.12944/CRNFSJ.11.1.11> (Q3).
14. Haddad M. A, Dalain S. Y. A, Fraihat A. H. A, Parisi S, Parisi A, Arabiat S, **Alqaraleh S. Y.** (2023). Use of Fresh Pumpkin Fruits for Producing Chicken Sausage Suggests Functional Properties. *Curr Res Nutr Food Sci*; 11(2). <http://dx.doi.org/10.12944/CRNFSJ.11.2.17> (Q3).
15. **Samer Y. Alqaraleh** and Khaled tarawneh. (2016), Antioxidant Activity of Methanolic Extracts of *Aloysia triphylla*, *Ceratonia siliqua*, *Cupressus sempervirens* and *Punica granatum* Selected from Karak Region-Jordan. *American-Eurasian Journal of Agriculture & Environment Sciences* 16 (3): 479-486. <https://10.5829/idosi.aejaes.2016.16.3.12847>. (IF: 0.12).
16. Nofal S. Al-Ameiri Muwaffaq R. Karajeh, and **Samer Y. Qaraleh**. (2015), Molds Associated with olive fruits infested with olive fruit fly, *Bactrocera oleae* and their effects on some oil quality traits. *Jordan Journal of Biological Sciences*. 8 (3): 217 – 220.

Published books:

Green Nanoscience for Health and Healing. 2025, Eliva Press.
<https://www.elivapress.com/en/book/book-5255043439/>

Professional Development & Training

- Dealing with Suspected and Confirmed COVID-19 Cases (USAID & Jordan MOH) | Sep 2024
 - Practicing Academic Work (Jordanian Ministry of Higher Education) | 2023
 - Erasmus+ Fostering Academia-Industry Collaboration 1 & 2 (University of Teramo, Italy) | 2018, 2019
 - Building Capacity of Personnel in the Jordanian Food Industry (European Commission, Spain) | Mar 2017
 - Internal Auditing for ISO/IEC 17025:2005 (USAID, Jordan) | Dec 2011
 - <https://reviewer.springernature.com/dashboard/certificates>
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References

- Osama E. Mohawesh, Ph.D. Full Professor. Water Resources and Environmental Engineering. Dean, Deanship of Scientific Research. Mut'ah University, P. O. Pox (7), Karak 61710, Jordan. Mobile: +962797408855, Email: osama.mohawesh@gmail.com. osama@mutah.edu.jo.
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