

PERSONAL INFORMATION

Rana EL HAJJ



Beirut, Lebanon

9617985858 -3316

r.hajj@bau.edu.lb
ranaelhajj2306@gmail.com

Linkedin: <https://www.linkedin.com/in/rana-el-hajj-0781081b8/?originalSubdomain=lb>
Google Scholar: <https://scholar.google.com/citations?user=n6aMcj8AAAAJ&hl=en>
Research Gate: <https://www.researchgate.net/profile/Rana-El-Hajj-2>

Sex Female | Nationality Lebanese

WORK EXPERIENCE

[January 2026- Present]

Associate Professor of Microbiology
Beirut Arab University- Debbiyeh, Lebanon

[January 2021 – December 2025]

Assistant Professor of Microbiology
Beirut Arab University- Debbiyeh, Lebanon

- Designed and delivered undergraduate and postgraduate courses in Microbiology and other disciplines in Biology.
- Developed and updated course materials to align with the latest scientific advances and accreditation requirements.
- Supervised 19 Graduate research dissertations (Masters and PhD).
- Supervised undergraduate student seniors' projects.
- Contributed to the design and establishment of specialized tracks in undergraduate curricula.
- Conducted academic advising and mentoring for students in Biology and Biochemistry programs (under and post-graduate levels).

[September 2020 –December 2020]

Part- time Instructor
Beirut Arab University- Debbiyeh, Lebanon

EDUCATION AND TRAINING

[2018 –2020]

Post-Doctoral Fellow-Parasitology and Oncology
American University of Beirut, Beirut, LEBANON.

[2015 –2018]

Ph.D. - Microbiology, Infectious Diseases and Hygiene
Montpellier University, Montpellier, FRANCE.

[2014–2015]

Master of Research- Genomics and Health
Lebanese University, Hadath, LEBANON.

RESEARCH EXPERIENCE

[2020–Present]

Research Projects, Beirut Arab University, LEBANON

- Antimicrobial Activity of Herbal Extracts Against Diverse Bacterial Strains
- Prevalence and Antimicrobial Resistance of Carbapenemase-Producing Gram-Negative Bacteria in Lebanese Hospitals
- Efficacy of Herbal Extracts Against Multidrug-Resistant (MDR) Bacteria
- Emergence of Carbapenem-Resistant Gram-Negative Bacteria in Soil, Water, Sewage, and Wildlife Across Lebanon
- Antimicrobial Resistance Profiles of Environmental and Wildlife-Derived Carbapenem-Resistant Bacteria
- Antimicrobial Properties of Plant Extracts Against Foodborne Pathogens
- Antifungal Activity of Herbal Extracts on Clinically Relevant Fungal Strains
- Antioxidant Properties of Plant Extracts: Biochemical and In Vitro Investigations
- Impact of Antibiotic Treatments on Gut Flora and Their Role in Inflammatory Bowel Disease (IBD) Pathogenesis
- Antibacterial Properties of Nanoparticles and Doped Nanoparticles Against Pathogenic Bacteria
- Comparative Antibacterial Activity of Polyoxometalates (POMs) and Conventional Antibiotics Against Clinical Bacterial Strains
- Therapeutic Potential of Herbal Extracts in Diabetes Management
- Wound Healing Efficacy of Various Herbal Extracts
- Prevalence of Heavy Metal- and Antibiotic-Resistant Bacteria, and *Entamoeba histolytica* in Lebanese Rivers
- Antimicrobial and Anticancer Activities of Metabolites from Lebanese Actinomycetes

[2015–2019]

Post-Doctoral Researcher, American University of Beirut, LEBANON

- Innovative Antiparasitic Drug Design: Targeting *Toxoplasma gondii* Through Identification of Novel Molecular Pathways
- Impact of Imidazoquinoxaline Derivatives on SENP3/ARF-Mediated SUMOylation and NPM1c Degradation in NPM1-Mutant Acute Myeloid Leukemia
- Targeted Therapy Approaches in the Treatment of Acute Myeloid Leukemia
- Synergistic Effects of Lenalidomide and Arsenic Trioxide in the Treatment of Primary Effusion Lymphoma
- Pathogenesis of Sebaceous Neoplasms and the Role of HPV Infection

THESIS SUPERVISION

Ph.D Supervision

Ms. Nourhane Darwich; "Investigation of the Biogenic Synthesis of Silver and Yttrium Nanoparticles by Pine Needle and its Biological Applications in vivo" (Co-supervision, Defended).

Mrs. Zahraa Samadi; "A One Health Approach Mapping of Antimicrobial Resistance in Lebanon" (Co-supervision, Defended).

Mr. Hassan Dhaini; "The Antitumor and Antimicrobial Potential of Compounds Derived from Marine Actinomycetes in Lebanon". (Co-supervision, Defended).

Mrs. Mariam Ramadan; "Investigating the antibacterial and wound healing activities of Green Nanoparticles Synthesized from the *Pelargonium graveolens* Plant" (Co-supervision, in progress).

Mrs. Mariana Hamadi; "Investigating the biogenic synthesis of Green Nanoparticles by *Ceratonia siliqua* and their effect on bacteria and liver damage in rats" (Co-supervision, in progress).

Mr. Anwar Al Souheil; "Using Next Generation Sequencing Technique for Understanding the Prevalence of Carbapenem Resistant Gram-Negative Bacteria in South Lebanon". (Co-supervision, in progress).

Ms. Fatima Hamadeh; "Microbial degradation of azo dyes by bacteria isolated from Saida dump". (Co-supervision, in progress).

Ms. Hibatallah Nahas; "Eco-friendly Silver and Zinc Oxide Nanoparticles and their Multifunction". (Co-supervision, in progress).

M.Sc. Supervision

Ms. Nour Kalakesh; "Investigating the Antibacterial and Antifungal Activities of Pomegranate Extracts Against Foodborne Pathogens" (Main Supervision, Defended).

Ms. Dania Itani; "Investigating the Antibacterial and Antifungal Activities of *Mentha longifolia* Hexane and Ethanolic Extracts" (Main Supervision, Defended).

Ms. Farah Nasr; "Assessment of Water Quality in Hasbani River and Domestic Water in Hasbaya, and Investigation of the Prevalence of Amoebiasis" (Co-supervision, Defended).

Ms. Dima El Masri; "Synthesis and Characterization of Azo-Cyclodextrin Complex and its Application as an Antimicrobial Agent." (Co-supervision, Defended).

Ms. Rashika Zantout; "Preliminary Assessment of Bioremediation Potential of Water Pollution by Rhizosphere Bacteria in the Constructed Wetland of Litani River in Lebanon. (Co-supervision, Defended).

Ms. Rayan Zahr; "Characterization of actinomycetes strains in Lebanese soil with an emphasis on their antibacterial activity" (Co-supervision, Defended).

Ms. Sarah Zahr; "Investigating the antibacterial and antioxidant activities of different citrus fruit species cultivated in Lebanon." (Co-supervision, Defended).

Mr. Ahmad Asaad; "A Comparative Study on the Antibacterial Activity of Polyoxometalates with Different Structures." (Co-supervision, Defended).

Ms. Zeina El Hajj Chehade; "Investigation of the Lebanese Meghli: Antibacterial and in vivo Toxicological Evaluation." (Co-supervision, Defended).

Ms. Zahra El Baba; "Investigating the Antibacterial and Antifungal Potentials of Traditionally Used Mediterranean Plants against Food-Borne Pathogens". (Co-supervision, in progress).

Ms. Ghazal Al Radi; "Assessment of Co-occurrence of Antibiotic and Heavy Metals Resistant Bacteria in Lebanese Rivers: The Case Study of Awali and Litani- Qasmiyeh Rivers" (Main supervision, in progress).

Ms. Layana Ayach; "Isolation and Characterization of Plastic-Degrading Bacteria from Soil Adjacent to the Litani-Qasmiyeh and Awali-AIShouf Rivers: Evaluation of Degradation Efficiency" (Main supervision, in progress).

PUBLICATIONS

1. **Biodegradation of Congo Red and Orange G by Bacillus cereus from the Saida Dumpsite: Experimental and In Silico Evidence.** Fatima Hamadeh, Shiraz Rawas, **Rana El Hajj**, Dalia El Badan. *Bacteria* 5 (3), 53.
2. **Genomic characterization of gram-negative bacteria isolated from conflict-trauma patients in a southern Lebanese hospital.** Al Souheil, Anwar, Hadi Hussein, Dayana Shoukair, Abdallah Kurdi, Karim Allaw, Mohamad Ghassan Abiad, Hassan Jamil Kazma et al. *Expert Review of Anti-infective Therapy* (2026).
3. **Green synthesis and evaluation of doped silver nanoparticles using Ceratonia siliqua leaf extract: antibacterial and molecular docking insights.** Hamadi, Mariana S., Zeinab Hachem, Ahmad F. El-Sayed, Taymour A. Hamdalla, Mahmoud I. Khalil, and **Rana El Hajj**. *RSC Advances* (2026).
4. **Optimized Decolorization of Methylene Blue by Bacillus cereus: A Genomic and Analytical Approach.** Hamadeh, Fatima, Thibaut Armel Chérif Gnimadi, Mano Joseph Mathew, Charbel Al-Bayssari, Mounir Kassir, **Rana El Hajj**, and Dalia El Badan. *Applied Microbiology* 6, no. 4 (2026): 52.
5. **Biogenic Silver Nanoparticles in Diabetes: In Vivo Mechanisms, Therapeutic Potential, and Future Perspectives: A Review** Darwich, Nourhane A., Rana El Hajj, and Mahmoud I. Khalil. *MedComm–Biomaterials and Applications* 5, no. 2 (2026): e70056.
6. **Green Synthesis of Silver and Gadolinium Doped Nanoparticles from Ceratonia siliqua Leaves Extract: Characterization, Antibacterial Effect and Molecular Docking** Hamadi, Mariana S., Zeinab Hachem, Alaa M. Abdallah, Ahmad F. El-Sayed, Taymour A. Hamdalla, Mahmoud I. Khalil, and **Rana El Hajj**. *Hybrid Advances* (2026): 100615.
7. **In Vivo Therapeutic Potential of Biologically Synthesized Nanoparticles From Pine Needle Leaf Extract in Streptozotocin-Induced Diabetic Rats.** Darwich, Nourhane A., Noura S. Abouzeinab, Ahmed F. El-Sayed, **Rana El Hajj**, and Mahmoud I. Khalil. *BioMed Research International* 2026, no. 1 (2026): 1938383.
8. **Genomic Insights into bla NDM-5-Producing Escherichia coli ST648 Isolates from Human and Wildlife Sources in Lebanon.** Zahraa Samadi, Ziad C. Jabbour, Zeinab R. Hodroj, Hadi M. Hussein, Abdallah Kurdi, Lama Hamadeh, Rami Mahfouz, Mahmoud I. Khalil, **Rana El Hajj**, Ghassan Matar & Antoine G. Abou Fayad. *Microorganisms* 13, no. 12 (2025): 2824.
9. **Unveiling the Antibacterial Potential of Green-Synthesized Silver Chloride, and Silver Chromium Nanoparticles from Pelargonium graveolens Extract through Molecular Docking and Bioactivity Studies.** Mariam A. Ramadan, Zeinab Hachem, Alaa M. Abdallah, Nour El Ghouch, Ahmed F. El-Sayed, Mahmoud I. Khalil, **Rana El Hajj**. *Microbiology Spectrum*. <https://doi.org/10.1128/spectrum.01142-25>.
10. **Draft genome sequences of New Delhi metallo-beta-lactamase-producing Klebsiella pneumoniae strains isolated from water and wastewater sources.** Zahraa F. Samadi, Ziad C. Jabbour, Zeinab R. Hodroj, Hadi M. Hussein, Abdallah Kurdi, Lama Hamadeh, Rami Mahfouz, Mahmoud I. Khalil, **Rana El Hajj**, Ghassan M. Matar, Antoine G. Abou Fayad. *Microbiology Resource Announcement* 0:e00574-25.
11. **Molecular Epidemiological Surveillance of Carbapenem-Resistant Gram-Negative Bacteria in Southern Lebanon.** Anwar Al Souheil, Hadi Hussein, Ziad Jabbour, Sara Barada, Jose-Rita Gerges, Ghada Derbaj, Abdallah Kurdi, Hassan Jamil Kazma, Nour Nahouli, Ali Hasan Najem, Abdallah Medlej, Wael Zorkot, **Rana El Hajj**, Mahmoud I Khalil, Ghassan M Matar, Antoine Abou Fayad. *Antibiotics* **2025**, 14(11), 1124.
12. **Antitumor Potential of Bioactive Crude Extracts Derived from Actinomycetes.** Dhaini, Hassan K., Bahaa Fahed Hassanieh, **Rana El Hajj**, and Mahmoud I. Khalil. 2025. *Bacteria* 4, 4: 51. <https://doi.org/10.3390/bacteria4040051>.
13. **Unveiling the Antibacterial and Antioxidant Potential of Mentha longifolia: A Comprehensive Characterization of Ethanolic and Hexane Extracts.** Itani, Dania, **Rana El Hajj** (2025). *Edelweiss Applied Science and Technology* (9(8), 847–856. <https://doi.org/10.55214/2576-8484.v9i8.9469>.
14. **Modulatory effects of Micromeria barbata and 3-acetyl-11-keto-boswellic acid on advanced glycation end products-induced inflammatory cytokine response in THP-1 cells.** Saad, May, Ghewa A. El-Achkar, **Rana El Hajj**, Abir Abdel Rahman, Mahmoud I. Khalil, and Nadine Nasreddine. (2025). *Edelweiss Applied Science and Technology*, 9(6), 1815-1835

15. **Health risks associated with seasonal water quality in the Hasbani River, Lebanon: a physicochemical and microbiological analysis.** Dib, Israa, Mohamad Fakh, Hiba Nouredine, Farah Nassib Nasr, **Rana El Hajj**, Alexandre Livet, Vanessa Alphonse, and Nouredine Bousserhine. *Journal of Water and Health* 2025: jwh2025320.
16. **Nationwide surveillance of carbapenem-resistant Gram-negative pathogens in the Lebanese environment.** Samadi, Zahraa F., Zeinab R. Hodroj, Ziad C. Jabbour, Hadi M. Hussein, Abdallah Kurdi, Dayana Shoukair, Ricardo F. Bitar, Hadi H. Chebaro, Jean Marie J. Al Semaani, Mohamad T. Al Hajjar, Housein H. Zeaiter, Lama Hamadeh, Rami Mahfouz, Lama H. Noueihed, Jad H. Hachem, Mahmoud I. Khalil, **Rana El Hajj**, Ghassan M. Matar, Antoine G. Abou Fayad *Applied and Environmental Microbiology* 2025: e01932-24.
17. **Silver and Yttrium-Doped Silver Nanoparticles From Pine Needle Leaf Extract: Synthesis, Characterization, Antioxidant, Antiuropathogenic Bacterial, and Docking Activities.** Darwich, Nourhane A., Malak Mezher, Alaa M. Abdallah, Zeinab Hachem, Ahmed F. El-Sayed, **Rana El Hajj**, Taymour A. Hamdalla, and Mahmoud I. Khalil. *Bioinorganic Chemistry and Applications* 2025, no. 1(2025): 1566870.
18. **Antimicrobial Potential of Actinomycetes Isolated from Marine Soils of Tyre City Beach, Lebanon: A Promising Source for Novel Bioactive Metabolites.** Dhaini Hassan, Mahmoud I Khalil, **Rana El Hajj**. *Applied Microbiology* 2025, 5(1), 27; 5010027.
19. **S6K2 in Focus: Signaling Pathways, Post-Translational Modifications, and Computational Analysis.** Khalil, Mahmoud I., Mohamed Helal, Ahmed F. El-Sayed, **Rana El Hajj**, Jasmine Holail, Marwa Houssein, Ahmed Waraky, and Olivier E. Pardo. *International Journal of Molecular Sciences* 26.1 (2024): 176.
20. **Biosynthesis; Characterization; and Antibacterial, Antioxidant, and Docking Potentials of Doped Silver Nanoparticles Synthesized from Pine Needle Leaf Extract.** Darwich, Nourhane A., Malak Mezher, Alaa M. Abdallah, Ahmed F. El-Sayed, **Rana El Hajj**, Taymour A. Hamdalla, and Mahmoud I. Khalil. *Processes* 12, no. 11 (2024): 2590.
21. **Green Synthesis of Yttrium Derivatives Nanoparticles Using Pine Needle Leaf Extract: Characterization, Docking, Antibacterial, and Antioxidant Potencies.** Darwich, Nourhane A., Malak Mezher, Alaa M. Abdallah, Ahmed F. El-Sayed, **Rana El Hajj**, Taymour A. Hamdalla, and Mahmoud I. Khalil. *Processes* 12, no. 8 (2024): 1713.
22. **Isolation and Characterization of Bacillus subtilis BSP1 from Soil: Antimicrobial Activity and Optimization of Fermentation Conditions.** Hellany, Heba, Jean Claude Assaf, Sara Barada, Dalia el-Badan, **Rana El Hajj**, Sonia Abou Najem, Antoine G. Abou Fayad, and Mahmoud I. Khalil. " *Processes* 12, no. 8 (2024): 1621.
23. **Characterization of Actinobacteria strains in Lebanese soil with an emphasis on investigating their antibacterial activity.** Rayan Zahr, Sarah Zahr, **Rana El Hajj**, Mahmoud Khalil. *Brazilian Journal of Microbiology*.(2024).
24. **Phytochemistry and biological activities of Citrus sinensis and Citrus limon: An update.** Sarah Zahr, Rayan Zahr, **Rana El Hajj**, Mahmoud Khalil. *Journal of Herbal Medicine* (2023).
25. **Immunity against COVID-19: What Do We Know So Far? A Comprehensive Review on the Immunity Against COVID-19.** Mounneh Mohamad Bahij, Ghassan Dbaibo, Darine Daher, Tarek Bou Dargham, Christine Atallah, **Rana El Hajj**, Lina Reslan, Zeina Bayram, and Abdul Rahman Bizri. *Journal of Clinical Respiratory: Open Access* (2022): 1-16.
26. **Characterization of the risk factors associated with Urinary Tract Infection (UTI) in Lebanon, and evaluation of the antibacterial activity of Hawthorn extract against UTI-causing bacteria.** Ramadan Jamila, **Rana El Hajj**, and Mahmoud Khalil. *Bacterial Empire*. Vol. 5 No. 3 (2022).
27. **Actinomycetes, Promising Therapeutic Agents: Characteristics and Active Metabolites.** Zahr, Rayan, Sarah Zahr, **Rana El Hajj**, and Mahmoud Khalil. " *Journal of Biology and Today's World*. Vol.11, Issue 6, 1-8 (2022).
28. **EAPB0503, an imidazoquinoxaline derivative modulates SENP3/ARF mediated SUMOylation, and induces NPM1c degradation in NPM1 mutant AML.** Skayneh, Hala, Batoul Jishi, Rita Hleihel, Maguy Hamie, **Rana El Hajj**, Carine Deleuze-Masquefa, Pierre-Antoine Bonnet, Marwan El Sabban, and Hiba El Hajj. *International Journal of Molecular Sciences* 23, no. 7 (2022): 3421.
29. **Microsatellite Instability in Near East Sebaceous Neoplasms: Toward Improved Prediction.** **Rana El Hajj**, Maelle Saliba, Muhammad Shaheen, Fatmeh I. Abbas, Shaarif Bashir, Umer N. Sheikh, Asif Loya, and Ibrahim Khalifeh. *Applied Immunohistochemistry & Molecular Morphology* 30, no. 3 (2022): 204-208.
30. **HAS 1: A natural product from soil-isolated Streptomyces species with potent activity against cutaneous leishmaniasis caused by Leishmania tropica.** Awada Bassel, Maguy Hamie, **Rana El Hajj**, Ghada Derbaj, Rania Najm, Perla Makhoul, Dima Hajj Ali, Antoine G. Abou Fayad, and Hiba El Hajj. *Frontiers in Pharmacology* 13 (2022).
31. **Toxoplasmosis: Current and emerging parasite druggable targets.** **Rana El Hajj**, Lina Tawk, Shaymaa Itani, Maguy

Hamie, Jana Ezzeddine, Marwan El Sabban, and Hiba El Hajj. *Microorganisms* 9, no. 12 (2021): 2531.

32. **Comprehensive overview of Toxoplasma gondii-induced and associated diseases.** Daher Darine, Ahmad Shaghlil, Eyad Sobh, Maguy Hamie, Malika Elhage Hassan, Mohamad Bahij Mounneh, Shaymaa Itani, **Rana El Hajj**, Lina Tawk, Marwan El Sabban, and Hiba El Hajj. *Pathogens* 10, no. 11 (2021): 1351.
33. **PD-L1 expression in sebaceous carcinomas.** Saliba Maelle, Muhammad Shaheen, **Rana El Hajj**, Fatmeh Abbas, Shaarif Bashir, Umer Nisar Sheikh, Rami Mahfouz, Asif Loya, and Ibrahim Khalifeh. *Cancer Immunology, Immunotherapy* 70 (2021): 1907-1915.
34. **P18 (SRS35/TgSAG4) Plays a Role in the Invasion and Virulence of Toxoplasma gondii.** Hamie, Maguy, Nadim Tawil, **Rana El Hajj**, Rania Najm, Sara Moodad, Rita Hleihel, Martin Karam et al. *Frontiers in Immunology* (2021): 2517.
35. **Sebaceous neoplasms: prevalence of HPV infection and relation to immunohistochemical surrogate markers.** Saliba Maelle, Muhammad Shaheen, **Rana El Hajj**, Fatmeh Ibrahim Abbas, Shaarif Bashir, Umer Nisar Nisar Sheikh, Rami Mahfouz, Asif Loya, and Ibrahim Khalifeh. *European Journal of Dermatology* 31 (2021): 170-175.
36. **Toxoplasmosis: Current and Emerging Parasite Druggable Targets.** **Rana El Hajj**, Lina Tawk, Shaymaa Itani, Maguy Hamie, Jana Ezzeddine, Marwan El Sabban, and Hiba El Hajj. *Microorganisms* 2021, 9, 2531." (2021).
37. **Sebaceous Neoplasms: The Epidemiologic, Histopathologic and Immunohistochemical Features of 215 Near-Eastern Cases.** Saliba Maelle, Muhammad Shaheen, Rana El Hajj, Fatmeh Abbas, Shaarif Bashir, Umer Nisar Sheikh, Asif Loya, and Ibrahim Khalifeh. *European Journal of Dermatology*, doi:10.1684/ejd.2021.4097, (2021).
38. **P18 surface antigen mediates reactivation of cerebral toxoplasmosis in murine models displaying an interferon-gamma immune response.** Hamie Maguy, Nadim Tawil, Lea Maalouf, **Rana El Hajj**, Rania Najm, Rita Hleihel, Martin Karam et al. *Journal of Infection and Public Health* 13, no. 12 (2020): 2116-2117.
39. **Expanded genome-wide comparisons give novel insights into population structure and genetic heterogeneity of Leishmania tropica complex.** Salloum Tamara, Rim Moussa, Ryan Rahy, Jospin Al Deek, Ibrahim Khalifeh, **Rana El Hajj**, Neil Hall, Robert P. Hirt, and Sima Tokajian. *PLoS neglected tropical diseases* 14, no. 9 (2020): e0008684.
40. **Lenalidomide in combination with arsenic trioxide: an effective therapy for primary effusion lymphoma.** Moodad, Sara, **Rana El Hajj***, Rita Hleihel, Loyal Hajjar, Nadim Tawil, Martin Karam, Maguy Hamie, Raghida Abou Merhi, Marwan El Sabban, and Hiba El Hajj. *Cancers* 12, no. 9 (2020): 2483.
* co-first author
41. **Cutaneous leishmaniasis: an evolving disease with ancient roots.** Saliba Maelle, Awss Shalhoub, Suad Taraif, Asif Loya, Mohammad A. Houreih, **Rana El Hajj**, and Ibrahim Khalifeh. *International Journal of Dermatology* 58, no. 7 (2019): 834-843.
42. **EAPB0503: An Imiquimod analog with potent in vitro activity against cutaneous leishmaniasis caused by Leishmania major and Leishmania tropica.** **Rana El Hajj**, Hanady Bou Youness, Laurence Lachaud, Patrick Bastien, Carine Masquefa, Pierre-Antoine Bonnet, Hiba El Hajj, and Ibrahim Khalifeh. *PLoS neglected tropical diseases* 12, no. 11 (2018): e0006854.
43. **Fatal visceral leishmaniasis caused by Leishmania infantum, Lebanon.** **Rana El Hajj**, Hiba El Hajj, and Ibrahim Khalifeh. *Emerging infectious diseases* 24, no. 5 (2018): 906.
44. **Acute disseminated encephalomyelitis and reactivation of cerebral toxoplasmosis in a child: case report.** Bannoura, Sami, **Rana El Hajj**, Ibrahim Khalifeh, and Hiba El Hajj. *IDCases* 13 (2018): e00434.
45. **Toxoplasma gondii autophagy-related protein ATG9 is crucial for the survival of parasites in their host.** Nguyen Hoa Mai, Hiba El Hajj, **Rana El Hajj**, Nadim Tawil, Laurence Berry, Maryse Lebrun, Yann Bordat, and Sébastien Besteiro. *Cellular Microbiology* 19, no. 6 (2017): e12712.

CONFERENCES

The Promising Activities of Traditional Herbal Extracts against Multidrug-Resistant Bacteria

13th conference on the Global Scientific Guild, Webinar, October 2024.

Targeted therapy for Acute Myeloid Leukemia: Investigating the potency of Arsenic trioxide, All Trans Retinoic Acid and Everolimus combination

Biomedical Research Day, American University of Beirut, Lebanon, April 2019.

EAPB0503: an Imiquimod analog with potent in vitro activity against Cutaneous Leishmaniasis caused by *Leishmania tropica*

Annual Congress of the Lebanese Society of Infectious diseases and Clinical Microbiology LSIDCM, Le Royal Dbayeh, Lebanon, February 2019.

EAPB0503: an Imiquimod analog with potent in vitro activity against Cutaneous Leishmaniasis caused by *Leishmania tropica*

IAP congress, Jordan, October 2018.

EAPB0503: an immunomodulatory drug analog as promising treatment for Cutaneous Leishmaniasis

Biomedical Research Day, AUB, Beirut, Lebanon, March 2018.

EAPB0503: an immunomodulatory drug analog as promising treatment for Cutaneous Leishmaniasis

Vancouver, Canada, May 2017.

WORKSHOPS AND TRAININGS

Communication and Presentation Skills for Academic Skills

Beirut Arab University, August 2025.

From Petri-Dish to Predictions – AI Meets Microbiology

Virtual Three- days' Workshop, August 2025.

Impact of AI on Education and Research Workshop

Beirut Arab University, May 2025.

Webinar on Micro-Credentials: A Catalyst for Educational Innovation and Career Advancement, by Erasmus+ Higher Education Reform Experts, May 2025.

Building Bridges: Exploring Community -Engaged Learning, Quality Assurance Center, February 2024.

Design Thinking Workshop, in partnership with Florida State University

Antonine University, Lebanon, October 2022.

The Art of Negotiation course, as part of Division of Continuing Education, authorized by the University of California, Irvine and offered through **Coursera**, March 2022.

TEACHING EXPERIENCE

[2020–Present]

Beirut Arab University, LEBANON

Undergraduate Courses

First Level Courses: Introduction to Biology (Freshman Program), Biology 1, Biology 2.

Second Level Courses: Microbiology, Food Microbiology, Biochemical Principles of Nutrition.

Third Level Courses: Ecology, Plant Physiology, Seminar in Biology/Biochemistry, Virology, Senior Project in Biology/Biochemistry.

Graduate Courses: Advanced Microbiology, Advanced Topics in Molecular Biology, Research Techniques, Special Topics in Microbiology, Biodiversity & Pollution, Individual Studies.

Courses offered to Faculty of Dentistry: Microbiology, Immunology& Molecular Biology.

General Elective Courses offered to all University students: Global Warming, Environmental Issues of Lebanon.

PROFESSIONAL SKILLS

Microbiology Techniques

Disc diffusion, Agar well diffusion, MIC/MBC Assays, Time-kill test, Biofilm Assays, Transformation, Plasmid extraction.

Molecular Biology Techniques

Genomic DNA and RNA isolation, PCR, RT-PCR, Protein isolation, Western blotting.

Immunological techniques

Enzyme-Linked Immunosorbent Assay (ELISA).

Cell Biology techniques

Cell culture and maintenance, Physiological assays investigating cellular death, growth and apoptosis, Light / Fluorescent microscopy, Establishment of primary cell cultures, Flow Cytometry Histological Techniques Histological processing and sectioning of paraffin embedded tissues, Differential staining of tissue sections, Immunofluorescence, Confocal Microscopy.

Animal Handling

Dissection, Eyepricks, Intravenous/Intraperitoneal/Subcutaneous injection

FUNDS, HONORS AND AWARDS

- Patent entitled: Plant-based Oxide Nanoparticles for Antimicrobial Dental Applications (2026)
- BAU Intramural Grant (2025)
10 000\$
- LIRA 17 (2025)
10 000k on the PhD project of Ms. Hibatallah Nahas: Sustainable Production of Green Metallic Nanoparticles and Their Multifaceted Industrial Applications (Leb-Nano)
- Prix Cèdre
Travel Grant (April 2016)

SERVICE

[September 2025- Present]

- Faculty Representative in the Committee of Graduate Studies at Beirut Arab University.
- Member of the Committee of Students Activities.
- Member of the Committee of Library.

[September 2023- August 2025]

- TV Interview to discuss the dissemination of Carbapenem-resistant Bacteria in Lebanese hospitals, and the importance of the accurate diagnosis, May 2024, TeleLiban, Ahla Sabah program.
- Member of Faculty Council Committee 2021 – present.
- Head of the Organizing Committee of SciMix Competition held for all the departments of the faculty of Science (Under and Post-graduates).
- Head of the Organizing Committee of “She Speaks Science” event held at the faculty of science for the postgraduate level.

[September 2022- September 2024]

- Secretary of the Faculty Council Meeting.
- Head of the committee of Students Activities
- Faculty Representative in the Committee of Student's Activities at Beirut Arab University.
- Member of the committee of Students Activities.
- Faculty of Science, Beirut Arab University.
- Member of the committee of Community Service, Faculty of Science, Beirut Arab University.
- Member of the organizing committee of BAU Virtual Science Fair event for High School Students (April 12 & 24, 2021).
- Member of the organizing committee of BAU Annual Science Fair event for High School Students (2018).

LANGUAGE SKILLS

Mother tongue(s) Arabic
French
English

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
French	C2	C2	C2	C2	C2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

REFEREES

Prof. Mahmoud Khalil m.khalil@bau.edu.lb
Dr. Ibrahim Khalifeh Ibrahim.Khalifeh@thechristhospital.com
Dr. Raghida Abou Merhi raboumerhi@ul.edu.lb