

## Heba Attia Mohammed Attia, PhD.

Department of Microbiology and Immunology, Faculty of Pharmacy, Cairo University

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### Contact:

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**Google Scholar profile:** [Heba Attia - Google Scholar](#)

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### Education:

#### **PhD in Pharmaceutical Sciences (Microbiology and Immunology)**

Faculty of Pharmacy Cairo University (Cairo, Egypt)

Major: Microbiology and Immunology

September 2023

Thesis title: *Investigating the interactions between Food-derived pro-and Anti-Carcinogens and the gut microbiota.*

#### **MSc in Pharmaceutical Sciences**

Faculty of Pharmacy Cairo University (Cairo, Egypt)

July 2016

Major: Microbiology and Immunology

Thesis title: *Studies on NDM-1 like genes in local Gram-negative isolates*

#### **BSc in Pharmaceutical Sciences**

Faculty of Pharmacy Cairo University (Cairo, Egypt)

May 2009

Honors: Distinction with honors.

### Professional positions:

**2024-ongoing:** Deputy Director of the Central Laboratory for Transitional Research and Biosafety Affairs.

**2023-ongoing:** Lecturer, Department of Microbiology and Immunology, Faculty of Pharmacy, Cairo, Egypt.

**2016- 2023:** Lecturer Assistant, Department of Microbiology and Immunology, Faculty of Pharmacy, Cairo, Egypt.

**2010- 2016:** Teaching assistant, Department of Microbiology and Immunology, Faculty of Pharmacy, Cairo, Egypt.

### Workshops and training:

**2024:** Two- days Grant writing workshop

**2024:** Introduction to patent and utility model registration procedure, TICO-Cairo University.

**2023:** How to build a successful career, the tip below the iceberg, and lessons from academia, Faculty of Pharmacy, Cairo University.

**2023:** Microbiome Virtual International Forum (MVIF-10), Online-MVIF

- 2022:** Towards Research excellence with Elsevier, New papers all the time, how to keep up to date, National research center, Cairo, Egypt.
- 2022:** Microbiome Virtual International Forum (MVIF-9), Online-MVIF
- 2022:** Regulation of bacterial virulence as an approach to combat the problem of antibiotic resistance, Faculty of Pharmacy, Helwan University.
- 2022:** Poster Booster:(3) Professional Presentation of the Poster. Online-CABI Platform
- 2022:** Microbial Genomics Workshop (BV-BRC training)- online Micro-GenomeUA
- 2022:** How to overcome the obstacles and challenges facing women scientists, Online-Africa Science Week.
- 2021:** Epi/ Genomic Medicine and Health Equity Autumn School, Online (Ge-GPx Network).
- 2020:** iSeq100 validation, Center for Genome and Microbiome Research, Faculty of Pharmacy, Cairo University.
- 2019:** The first bioinformatics workshop, EG-CompBio, Nile University.
- 2018:** Metagenomics Workshop, Center for Genome and Microbiome Research, Faculty of Pharmacy, Cairo University.
- 2017:** Metrics for Evaluation of Academic Performance, Faculty of Pharmacy, Cairo University.
- 2017:** Maximize your scientific impact while keeping your integrity, Faculty of Pharmacy, Cairo University.
- 2012:** Bioinformatics BTC-003, Faculty of Pharmacy, Cairo University.

### Teaching experiences:

**2023-ongoing:** Lecturer, Department of Microbiology and Immunology, Faculty of Pharmacy, Cairo, Egypt.

- Parasitology course for PharmD program students (Spring and summer semesters)
- Cell biology course for the credit hour students (Spring semester)
- Supervising the practical part of Parasitology, Cell biology and Pharmaceutical Microbiology courses for PharmD students, and Cell biology courses for credit hour students.
- Supervising experiential training research projects

**2016- 2023:** Lecturer Assistant, Department of Microbiology and Immunology, Faculty of Pharmacy, Cairo, Egypt.

- Involved in the practical sessions of the following courses:
  - Pharmaceutical Microbiology
  - General Microbiology and Immunology
  - Parasitology
  - Pathology
  - Medical Microbiology
  - Cell biology
- Involved in preparing the practical part of the following diplomas:
  - Diagnostic microbiology
  - Cosmetics
  - Advanced practical techniques
  - Genomics diploma

**2010- 2016:** Teaching assistant, Department of Microbiology and Immunology, Faculty of Pharmacy, Cairo, Egypt.

- Involved in the practical sessions of the following courses:
  - Pharmaceutical Microbiology
  - General Microbiology and Immunology
  - Medical Microbiology
  - Parasitology
  - Pathology
  - Cell biology
- Involved in preparing the practical part of the following diplomas:
  - Diagnostic microbiology
  - Cosmetics
  - Genomics diploma

### Conferences

**2025:** 17<sup>th</sup> BGICC-Breast Gynecological & Immunooncology International Cancer Conference, *Attendee*

**2024:** The Microbiome Bioinformatics Symposium (the German-Egyptian Microbiome Research Capacity Building (GEM CAP)), *Attendee*

**2024:** 5<sup>th</sup> Egyptian International Conference on Microbiota& Microbiome in Health and Disease, *Attendee*

**2023:** 4<sup>th</sup> Egyptian International Conference on Microbiota& Microbiome in Health and Disease, *Oral presentation*

**2022:** The 2<sup>nd</sup> International Biotechnology Conference (Current Challenges and Future Perspectives, Misr University for Science & Technology, *Attendee*.

**2021:** 10<sup>th</sup> International Scientific Conference of the Faculty of Pharmacy, Cairo University- Reshaping Pharma Sustainability and Innovation for Better Pandemic Response Cairo, Egypt, *Active participation (The biosafety lab)*.

**2021:** 3<sup>rd</sup> Egyptian International Conference on Microbiota and Microbiome in Health and Disease, National research center, Cairo, Egypt. *Attendee*.

**2019:** 1<sup>st</sup> Egyptian International Conference on Microbiota and Microbiome in Health and Disease, National research center, Cairo, Egypt. *Attendee*.

**2019:** 10<sup>th</sup> Probiotics, Prebiotics & New Foods, Nutraceuticals and Botanicals for Nutrition & Human and Microbiota Health Conference, Rome, Italy. *Poster presentation*.

**2014:** 4<sup>th</sup> International Scientific Conference of the Faculty of Pharmacy, Cairo University, Egypt, *Poster presentation*.

**Publications:**

- Ahmed, S., Attia, H., Saher, O. & Fahmy, A. M. (2024). Augmented glycosomes as a promising approach against fungal ear infection: Optimization and microbiological, *ex vivo* and *in vivo* assessments. *Int. J. Pharm.* X, 8, 100295.
- Zayed, A., Goyal, V., Kiran, K., Attia, H. & Farag, M. A. (2024). Analysis of salinity-induced metabolome changes in Indian mustard (*Brassica juncea*) roots and shoots: hydroponic versus microplot cultivation. *J. Sci. Food Agric.*
- Arga, K.Y., Attia, H., & Aziz, R. K., (2024). Pharmacomicrobiomics-Guided Precision Oncology: A New Frontier of P4 (Predictive, Personalized, Preventive, and Participatory) Medicine and Microbiome-Based Therapeutics. *OMICS*, 28(1): p. 5-7.
- Osman, E. O., Attia, H., Samir, R. & Mahmoud, Z. (2023). Design, synthesis, and antibacterial activity of a new series of ciprofloxacin-thiadiazole hybrid. *J. Mol. Struct*, 1282, 135135.
- Attia, H., Elbanna, S. A., Khattab, R. A., Farag, M. A., Yassin, A. S. & Aziz, R. K. (2023). Integrating microbiome analysis, metabolomics, bioinformatics, and histopathology to elucidate the protective effects of pomegranate juice against benzo-alpha-pyrene-induced colon pathologies. *Int. J. Mol. Sci.*, 24
- Sallam, I. E., Abdelwareth, A., Attia, H., Aziz, R. K., Homsy, M. N., von Bergen, M., & Farag, M. A. (2021). Effect of gut microbiota biotransformation on dietary tannins and human health implications. *Microorganisms*, 9(5), 965.
- Attia, H., Sallam, I. E., Abdelwareth, A., Mira, A., Khattab, R. A., Yassin, A. S., ... & Aziz, R. K. (2020). Investigating Potential Chemoprotective Role of Pomegranate Juice Through Analyzing Its Reciprocal Interactions with the Gut Microbiota.
- Norsigian, C. J., Attia, H., Szubin, R., Yassin, A. S., Palsson, B. Ø., Aziz, R. K., & Monk, J. M. (2019). Comparative genome-scale metabolic modeling of metallo-beta-lactamase-producing multidrug-resistant *Klebsiella pneumoniae* clinical isolates. *Frontiers in cellular and infection microbiology*, 9, 161.
- Attia, H., Szubin, R., Yassin, A. S., Monk, J. M., & Aziz, R. K. (2019). Draft genome sequences of four metallo-beta-lactamase-producing multidrug-resistant *Klebsiella pneumoniae* clinical isolates, including two colistin-resistant strains, from Cairo, Egypt. *Microbiology resource announcements*, 8(7), e01418-18.

**Skills:**

- **Microbiological techniques:** Antibiotic susceptibility phenotyping, MIC determination and biofilm assays.
- **Molecular techniques:** DNA extraction and purification, Gel electrophoresis, PCR and Primer design.
- **Animal models**
- **Metagenomics:** Next generation sequencing (iSeq), Biomonitoring of microbial communities.
- **Bioinformatics:** Microbiome data analysis (MOTHUR & QIIME2 pipelines), CLC Workbench Software (Alignments and Tree Design).
- **Biostatistics:** GraphPad Prism and R software.

**Awards:**

- **2024:** Best PhD thesis for the year 2023
- **2023:** Best oral presentation in the 4<sup>th</sup> Egyptian International Conference on Microbiota & Microbiome in Health and Disease (EICMMHD).

**Research interest:**

- **Antimicrobial resistance:**
  - Screening for natural antimicrobial commercial and hydrodistilled oils, to combat the emerging antimicrobial resistance problem.
  - Screening for new and effective antimicrobial agents- like antibiotic hybrid-with much smarter and defeating mechanisms.
- **Microbiome research:**
  - Exploring the reciprocal interaction between the gut microbiota and Food-derived pro- and anti-carcinogens.
  - Host microbiome
  - Investigating the gut microbiota role in the prognosis of nonalcoholic steatohepatitis
  - Investigating the gut brain axis role in the prognosis of Tauopathy