



Dr. Basma Talaat Abd-Elhalim

Agric. Microbiology Dept, Faculty of
Agriculture, Ain Shams University



PERSONAL INFORMATION

Name: Basma Talaat Abd-Elhalim.

Gender: Female.

Date of Birth: 24/12/1988.

Nationality: Egyptian.

Marital Status: Married with 2 children.

National ID: 28812240103028.

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CONTACT INFORMATION

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

Web of science: <https://www.webofscience.com/wos/author/record/IWU-5300-2023>

Research gate: <https://www.researchgate.net/profile/Basma-Abd-Elhalim>

Academia: <https://shams.academia.edu/BasmaTalaat>

Live DNA: <https://livedna.net/?dna=20.41904>

Authorea: <https://www.authorea.com/users/879022-basma-t-abd-elhalim>

ACADEMIC INFORMATION AND OCCUPATIONAL FIELD

Faculty of Agriculture, Ain Shams University

- Bachelor degree Faculty of Agriculture (2009), Agricultural Microbiology Department, Grade: Excellent with honor.
- M.Sc. in Agricultural Microbiology (2015), Agricultural Microbiology Department, Faculty of Agriculture, Ain shams University.
- Ph.D. in Agricultural Microbiology (2020), Agricultural Microbiology Department, Faculty of Agriculture, Ain shams University.

CARRER

- Demonstrator of Agricultural Microbiology (2010-2015), Department of Agricultural Microbiology, Ain shams University.
- Lecturer assistant of Agricultural Microbiology (2015-2020), Department of Agricultural Microbiology, Ain shams University.
- Lecturer of Agricultural Microbiology, Department of Agricultural Microbiology, Ain shams University (2020 Till now).

JOB RESPONSIBILITIES

- Teaching, supervision, and research activities.
- Participation in control work and organizing examinations.
- Coordinator of the Financial Resources Standard in the Department of Agricultural Microbiology in the Biotechnology Program
- Coordinator of the leadership and organization standard for the Department of Agricultural Microbiology in the Biotechnology Program.

ACTIVITIES DESCRIPTION

- Contributed at the 2nd Annual Ain Shams University innovation competition 2021, with project and poster entitled with "Biological synthesis of copper nanoparticles using *Pseudomonas silesiensis* Cell-free extract and its application as antimicrobial and antitumor agents".
- Contribution in Literacy project at Faculty of Agriculture Ain Shams University, 2023.
- Selected as a candidate of "Against plastic campaign" by the Ministry of Environment, 2022.
- A reviewer in International Journal of Microbiology and Biotechnology(IJMB), ISSN Print: 2578-9678; ISSN Online: 2578-9686, <https://www.sciencepg.com/ijmb>, from August 30, 2023 to August 30, 2026.
- A reviewer in 3 Biotech journal.
- A reviewer in BMC Microbiology.
- A reviewer in BMC Biotechnology.
- A reviewer in Egyptian Journal of Chemistry.

- A reviewer in Biological and Biomedical journal (BBJ).
- A reviewer in Food Science and Engineering.
- A reviewer in Scientific reports.
- A reviewer in the International Journal of Research and Scientific Innovation (IJRSI).
- A reviewer in the International Journal of Research and Innovation in Applied Science (IJRIAS).
- A reviewer in AIMS Microbiology.
- A reviewer in Nanotechnology, Science and Applications (Dove Medical Press).
- A reviewer in Bioresources and Bioprocessing.
- A reviewer in Nutrie.
- A reviewer in Archives of Microbiology.
- A reviewer in Discover Food.
- A reviewer in American journal of Microbiology.

SCIENTIFIC ACTIVITIES AND TEACHING COURSES

1. General bacteriology and immunology Code: MIC312 Theoretical course at Veterinary college, Ain Shams University.
2. Systematic bacteriology and Mycology Code: MIC322 Theoretical course at Veterinary college, Ain Shams University.
3. Microbial fermentation for undergraduate students (Practical and theoretical).
4. Bacteria physiology for undergraduate students (Practical and theoretical).
5. Algae and fungi physiology for undergraduate students (Practical and theoretical).
6. Agricultural microbiology for undergraduate students (Practical and theoretical).
7. Environmental microbiology for undergraduate students (Practical).
8. Soil microbiology for undergraduate students (Practical and theoretical).
9. General microbiological test for undergraduate of new programs students (theoretical).
10. Agricultural microbiology for undergraduate of new programs students (Practical and theoretical).
11. Applied microbiology for undergraduate students (Practical and theoretical).
12. Applied microbiology for undergraduate students of new programs students (Practical and theoretical).
13. Introduction in biotechnology for undergraduate students (Practical and theoretical).
14. Taxonomy of bacteria for undergraduate students (Practical).
15. General microbiology for undergraduate students (Practical and theoretical).
16. Applications in the biotechnology for undergraduate students (Practical and theoretical).
17. Microbial food spoilage and toxicity for undergraduate students (Practical and theoretical).
18. Medical microbiology for undergraduate students (Practical).
19. Bacteria physiology (a) for post graduate students (Practical and theoretical).
20. Bacteria physiology (b) for post graduate students (Practical and theoretical).

21. Microbial growth and nutrition for post graduate students (Practical and theoretical).
22. Agriculture Microbiology for Blended Learning (Practical and theoretical).

PUBLICATIONS

1. Abd-Elhalem, B. T., El-Sawy, M., Gamal, R. F., & Abou-Taleb, K. A. (2015). Production of amylases from *Bacillus amyloliquefaciens* under submerged fermentation using some agro-industrial by-products. *Annals of Agricultural Sciences*, 60(2), 193-202. <https://doi.org/10.1016/j.aos.2015.06.001>
2. F.G. Rawia, Khadiga Abou-Taleb, Basma T. Abd-Elhalim (2017). Isolation, Identification and Production of Amylases from Thermophilic Spore Forming Bacilli Using Starch Raw Materials Under Submerged Culture. *The American Association for Science and Technology (AASCIT)*, 3, 52-63.
3. Abd-Elhalim B.T., Gamal R.F., Abou-Taleb Kh.A., Haroun A.A. (2019). Biosynthesis of Copper nanoparticles using bacterial supernatant optimized with certain agro-industrial byproducts. *Novel Research in Microbiology Journal*, 3(6), 558-578. doi: 10.21608/nrmj.2019.66748
4. Gehan F. Galal, Basma T. Abd-Elhalim, Khadiga A. Abou-Taleb, Ahmed A. Haroun, Rawia F. Gamal (2021). Toxicity assessment of green synthesized Cu nanoparticles by cell-free extract of *Pseudomonas silesiensis* as antitumor cancer and antimicrobial. *Annals of Agricultural Sciences*, 66(1), 8-15. <https://doi.org/10.1016/j.aos.2021.01.006>
5. Basma T. Abd-Elhalim (2022). Moringa oleifera leaf as a natural water purifier and causes decontamination of fecal-coliform bacteria. *Novel Research in Microbiology Journal*, 6(6), 1783-1800. doi: 10.21608/nrmj.2022.273230
6. Mohamed Ali, F., Abdelhafez, A., Hassan, E., & Abd-Elhalim, B. (2023). Isolation and Characterization of Probiotics from Various Food Products as Potential Human Food Additives. *Arab Universities Journal of Agricultural Sciences*, 31(1), 63-80. doi: 10.21608/ajs.2023.173367.1503
7. Basma T. Abd-Elhalim, Bahaa A. Hemdan, Salwa M., Mahgoub A. Ahmed, Sodaf A. Maan, and Samah H. (2023). Enhancing durability and sustainable preservation of Egyptian stone monuments using metabolites produced by *Streptomyces exfoliatus*. *Sci Rep* 13, 9458. <https://doi.org/10.1038/s41598-023-36542-1>
8. Maryam Amr, Samah H. Abu-Hussien, Radwa Ismail, Asmaa Aboubakr, Rahma Wael, Mariam Yasser, Bahaa Hemdan, Salwa M. El-Sayed, Ashraf Bakry, Naglaa M. Ebeed, Hesham Elhariry, Ahmed Galal & Basma T. Abd-Elhalim (2023). Utilization of biosynthesized silver nanoparticles from *Agaricus bisporus* extract for food safety application: synthesis, characterization, antimicrobial efficacy, and toxicological assessment. *Sci Rep* 13, 15048. <https://doi.org/10.1038/s41598-023-42103-3>
9. Alshaymaa I. Ahmed, Khadiga A. A. Abou-Taleb & Basma T. Abd-Elhalim (2023). Characterization and application of tannase and gallic acid produced by co-fungi of

- Aspergillus niger* and *Trichoderma viride* utilizing agro-residues substrates. Sci Rep 13, 16755. <https://doi.org/10.1038/s41598-023-43955-5>
10. Lopna H. Ezz, Sawsan F. Shehata, Basma T. Abd-Elhalim (2023). Sustainable Wastewater Purification and Microbial Decontamination for Aquaculture and Agriculture Using Eggshell Waste. Egyptian Journal of Aquatic Biology and Fisheries, 27(5), 615-632. doi: 10.21608/ejabf.2023.321101
 11. Tokaa Mansour, Wafaa H. Radwan, Menna Mansour, Mohamed Gomaa, Farouk Farouk, Mohamed Shepl, Ahmed G. Soliman, Basma T. Abd-Elhalim, Mohamed M. K. El-Senousy, Ashraf Bakry, Naglaa M. Ebeed, Neima K. Alsenosy, Hesham Elhariry, Ahmed Galal, Salwa M. El-Sayed, Eslam Adly & Samah H. Abu-Hussien (2023). Larvicidal potential, toxicological assessment, and molecular docking studies of four Egyptian bacterial strains against *Culex pipiens* L. (Diptera: Culicidae). Sci Rep 13, 17230. <https://doi.org/10.1038/s41598-023-44279-0>
 12. Salma M. Farouk, Samah H. Abu-Hussien, Basma T. Abd-Elhalim, Reham M. Mohamed, Naira M. Arabe, Ahmed A. T. Hussain, Mostafa E. Mostafa, Bahaa Hemdan, Salwa M. El-Sayed, Ashraf Bakry, Naglaa M. Ebeed, Mahmoud Salah, Hesham Elhariry & Ahmed Galal (2023). Biosynthesis and characterization of silver nanoparticles from *Punica granatum* (pomegranate) peel waste and its application to inhibit foodborne pathogens. Sci Rep 13, 19469. <https://doi.org/10.1038/s41598-023-46355-x>
 13. Basma T. Abd-Elhalim, Rawia F. Gamal, Salwa M. El-Sayed & Samah H. Abu-Hussien (2023). Optimizing alpha-amylase from *Bacillus amyloliquefaciens* on bread waste for effective industrial wastewater treatment and textile desizing through response surface methodology. Scientific Reports, 13. <https://doi.org/10.1038/s41598-023-46384-6>
 14. H., Samah, Bahaa Hemdan, Basma T., Mohamed M. Aboul Fotouh, Ahmed G. Soliman, Youssef K. Ghallab, Eslam Adly, and Salwa M. Larvicidal Potential, Antimicrobial Properties and Molecular Docking Analysis of Egyptian Mint (*Mentha Rotundifolia*) against *Culex Pipiens* L. (Diptera: Culicidae) and Midgut-borne Staphylococcus Aureus. Scientific Reports 14, no. 1 (2024): 1-16. Accessed February 25, 2024. <https://doi.org/10.1038/s41598-024-51634-2>
 15. Ashour, Mona A., and Basma T. Abd-Elhalim. Biosynthesis and Biocompatibility Evaluation of Zinc Oxide Nanoparticles Prepared Using *Priestia Megaterium* Bacteria. Scientific Reports 14, no. 1 (2024): 1-10. Accessed February 25, 2024. <https://doi.org/10.1038/s41598-024-54460-8>.
 16. Gomaa, H. H., Amin, D. Y., Ahmed, A. R., Ismail, N. A., El Dougdoug and Basma T. Abd-Elhalim. (2024). Antimicrobial, antibiofilm, and antiviral investigations using egyptian phoenix dactylifera L. Pits extract. AMB Express, 14(1), 1-11. <https://doi.org/10.1186/s13568-024-01695-3>
 17. Abdelhai, Mostafa F., Romisaa H. Shabaan, Noha M. Kamal, Esraa A. Elemery, Basma T., and Enas A. Hassan. Copper Nanoparticles Biosynthesis by *Stevia Rebaudiana* Extract:

- Biocompatibility and Antimicrobial Application. *AMB Express* 14, no. 1 (2024): 1-15. Accessed May 19, 2024. <https://doi.org/10.1186/s13568-024-01707-2>
18. Mohamed, Salma H., Badawi A. Othman, Basma T. Abd-Elhalim, and Mohammed N. Seada. Copper Nanoparticles Biosynthesis by *Priestia Megaterium* and Its Application as Antibacterial and Antitumor Agents. *Scientific Reports* 14, no. 1 (2024): 1-14. Accessed October 17, 2024. <https://doi.org/10.1038/s41598-024-72598-3>
19. Ali E., Abu-Hussien S. H., Hesham E., Ahmed S., Mostafa H., Gamal A., M. El-Sayed S., Hemdan B., Bakry A., Ebeed N. M., Elhariry H., Galal A. & Abd-Elhalim B. T. Compatibility and antimicrobial activity of silver nanoparticles synthesized using *Lycopersicon esculentum* peels. *AMB Expr* 14, 120 (2024). <https://doi.org/10.1186/s13568-024-01774-5>
20. El-Bana, G. G., Abd-Elhalim, B. T., ElSayed, A. F., & Abdel-Ghani, G. E. (2025). New acetophenone scaffolds: Synthesis, antifungal activities, biocompatibility, molecular docking, ADMET analysis and dynamic simulations. *Journal of Molecular Structure*, 1322, 140452. <https://doi.org/10.1016/j.molstruc.2024.140452>
21. Mwaheb, M. A., El-Aziz, B. M. A., Abd-Elhalim, B. T., El-Kassim, N. A., & Radwan, T. E. E. (2025). Study of Different Cultivated Plants Rhizosphere Soil Fungi-Mediated Pectinase: Insights into Production, Optimization, Purification, Biocompatibility, and Application. *Microbial ecology*, 87(1), 165. <https://doi.org/10.1007/s00248-024-02474-0>
22. Abd-Elhalim, B.T., Gideon, M., Anton, K. et al. Impact of dumpsite compost on heavy metal accumulation in some cultivated plants. *BMC Res Notes* 18, 20 (2025). <https://doi.org/10.1186/s13104-025-07083-9>
23. Abd-Elhalim, B., El-Bana, G., El-Sayed, A. et al. (2025). Antifungal activity and biocompatibility assessment with molecular docking and dynamic simulations of new pyrazole derivatives. *BMC Biotechnol* 25, 15. <https://doi.org/10.1186/s12896-025-00948-8>

SUPERVISION OF ACADEMIC THESIS

- **Supervisor of 2 philosophy degree Thesis (Ph.D.) and 3 Master of science Thesis (MSc.):**
 - 1- "EVALUATION OF SOME BACTERIA AND YEAST FOR PRODUCTION OF PROBIOTIC" Ph.D. thesis.
 - 2- "Microbial Synthesis of Nanoparticles for Biofertilizing and Suppressing Foliar Pathogens of Maize and Sorghum Plants" Ph.D. thesis.
 - 3- "Biological Treatment of Some Industrial Wastes" Ph.D. thesis.
 - 4- "Biological Synthesis of Copper Nanoparticles Using Bacteria and its Application As Antimicrobial and Antitumor agents" MSc. thesis.
 - 5- "Reducing of Biofilm Formation by Food Spoilage Bacteria during Handling of some Processed Meat" MSc. thesis.
 - 6- "Ecological and Biological Studies on Protozoan Diseases in Egyptian Apiaries" .Ph.D. thesis.

SUPERVISOR OF FACULTY GRADUATION PROJECTS

- **Supervisor of 4 graduation project teams during (2022-2023):**
 - 1- Utilization of biosynthesized silver nanoparticles from *Agaricus bisporus* extract for food safety application: synthesis, characterization, antimicrobial efficacy, and toxicological assessment.
 - 2- Biosynthesis and characterization of silver nanoparticles from Punica granatum (pomegranate) peel waste and its application to inhibit foodborne pathogens. Wins fund from STDF for graduation projects support.
 - 3- Biosynthesis and characterization of silver nanoparticles from Tomato peels waste and its application to inhibit foodborne pathogens.
 - 4- Application of Eggshell waste in bioremediation and Decontamination of The Nile raw water in Egypt.
- **Supervisor of 4 graduation project teams during (2023-2024):**
 - 1- Microbial Production and optimization of natural-ecofriendly pigments utilizing various agro-industrial wastes as sustainable substrates and their characterization, biocompatibility, and application.
 - 2- The Decomposition of plastics using Marine fungi and its toxicity assessment for possible environmental reuse.
 - 3- The Potential of Waxworms (*Galleria mellonella*) gut microbiota in the degradation of Plastics with biodegradation mechanism study and optimization.
 - 4- Green-ecofriendly synthesis of Selenium nanoparticles using Lemon (*Citrus Aurantiifolia*) Peels and their cytotoxicity, antioxidant, antibiofilm, and cells antiproliferative activities assessment and application on Poultry healthy and nutritional enhancement.

MEMBERSHIP

- Member of the American Society of Microbiology.
- Member of the Egyptian Scientific Society of Moringa.
- Member in IFAD Scientific digital platform.

AWARDS AND REWARDS

- Abdul Hameed Shoman Reward For Youth Researchers, 2010.
- International publication reward for 29th cycle, July 2021, Ain Shams university.
- AIN SHAMS INCENTIVE AWARD, May 2024, Ain Shams university in the field of Advanced Technology Sciences in Agricultural Sciences.

TRAININGS AND COURSES

- International Computer Driving License (ICDL) certified from UCQ /2010.
- Effective Presentation Skills certified from FLDP, Ain Shams University / 2010.

- Phlebotomy and Medical Analysis Course, Cairo University, 2010.
- Communication skills certified from MBA Egypt / 2011.
- Organizing scientific conferences certified by FLDP Ain Shams University / 2011.
- Financial and legal aspects certified from FLDP Ain Shams University / 2015.
- Time and meetings Management certified from FLDP Ain Shams University / 2015.
- Practical preparation of Nanomaterials, Naqaa foundation, 2018.
- Online Information protection and security from FLDP Ain Shams University / 2020.
- Creating and developing online courses from FLDP Ain Shams University / 2020.
- Introduction to the Modern Knowledge Cycle, Researcher Academy On Campus, Elsevier /2020.
- Microsoft teams platforming and online signature from FLDP, Ain Shams University / 2020.
- Test of English as a Foreign Language (TOEFL), Ain Shams University, with score 600.
- Moodle platform construction, Ain Shams University /2021.
- Intended Learning outcomes (ILOs) for high learning courses from FLDP, Ain Shams University / 2021.
- POWERAPPS platforming, Ain Shams University /2021.
- Stream deck, Digital library, Ain Shams university /2022.
- Nanocarriers of Drug delivery, The National Committee of Biochemistry and Molecular Biology of the Academy of Scientific Research and Technology /2022.
- Digital library and scientific research pauses with citations and the 14th session of promotions, Beni-Suef University / 2022.
- Statistics and Publication Tips and Tricks: Few Steps Towards Achieving a Better Presentation of the Research Results, National Research Center (NRC), 2022.
- Training of Trainers TOT, Ain Shams University/ 2022.
- ChatGPT, Ain Shams University, Digital library/ 2023.
- World water organization (WWO) global water challenges/ 2023.
- Carbon footprint calculation and water regulation /2023.
- Introduction of modern technologies of artificial intelligence /2023.
- How to deal with household water purification filters scientifically/ 2023.
- Determination of Alum and chlorine Dosage in drinking water plants /2023.
- Start learning AI easily /2023.

- How NEOM is changing the way we think about water industry /2023.
- Building informational modeling (BIM) and artificial intelligent (AI), Sohag Engineering Syndicate / 2023.
- Quality control and Assurance Systems in water analysis laboratories / 2023.
- Introduction to solar energy systems components / 2023.
- Green Building Systems (LEED) / 2023.
- Usage of Atomic Absorption and Ion Chromatography Devices in Laboratories / 2023.
- Solar Energy Systems and Their Application in Water Pumping Systems /2023.
- Advanced Technologies of Giant Boiler Water Treatment With UF & RO Systems / 2023.
- Diagnostic Molecular Microbiology for Pathogen Detection in Aquaponic Systems to Meet the Rising Demand for Fresh water and Safe food, STDF project No. 45895 / 2023.
- Focus on Peer Review A Nature Masterclasses course / 2025.
- Research Integrity: Publication Ethics A Nature Masterclasses course / 2025.

CONFERENCES

- (17-18 March 2019) The 14th Annual Faculty of Agriculture Ain Shams University Conference.
- (18-20 November 2019) The 14th Annual Conference of The Egyptian Society of Applied Microbiology.
- (1-3 April 2019) The 8th Annual Ain Shams University International Conference.
- (6 -8 April 2021) The 9th Annual Ain Shams University International Conference.
- (3 -5 September 2022) the impact of climate changes on food production dry areas, Faculty of Medicine, Ain Shams University.
- (31 May 2023) The 2nd Annual Conference of the Scientific Society for Measurement and Evaluation, Association of Arab Universities.