



Curriculum Vitae

- **Name:** Omaima SalahEldin Ali
- **Title:** Lecturer
- **Department:** Biochemistry
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A) Academic Qualifications:

- Bachelor's Degree in Pharmaceutical sciences University: Ain Shams University Year: 2002
- Masters Degree in Biochemistry University: Cairo University Year: 2013
- Ph.D. in Biochemistry University: Cairo University Year: 2019

• Other Qualifications:

- ✓ **2021-2022:** Unit manager of Cell based analysis unit, Reference Laboratory, Egyptian Drug Authority (EDA), Giza, Egypt.
- ✓ **2020-2021:** Researcher and technical manager at Molecular Drug Evaluation Department, National Organization for Drug Control and Research (NODCAR), Egyptian Drug Authority (EDA), Giza, Egypt.
- ✓ **2019-2020:** Postdoctoral Research Associate, Medicinal Chemistry and Molecular Pharmacology (MCMP), school of Pharmacy, Purdue University, USA.
- ✓ **2015-2017:** Visiting scholar, Medicinal Chemistry and Molecular Pharmacology department (MCMP), school of Pharmacy, Purdue University, USA.

- ✓ Successfully completed all the requirements for the course of liquid Nitrogen safety, Purdue University, USA, 2019.
- ✓ Successfully completed all the requirements for the course of hand and power tool safety, Purdue University, USA, 2019.
- ✓ Successfully completed all the requirements for the course of fume hood safety, Purdue University, USA, 2019.
- ✓ Successfully completed the foundation of college teaching program in Center for Instructional Excellence (CIE), Purdue University, USA, 2019, including workshop participation and reflection on the following topics:
 - 1-Making learning accessible.
 - 2-Assessing student learning.
 - 3-Creating a learner-centered environment.
 - 4-Applying the science of teaching and learning.
- ✓ Attending training course on working with rats/mouse in research settings, held in school of Veterinary medicine, Purdue University, USA, 2017.
- ✓ Attending training course on animal biosafety, held in school of Veterinary medicine, Purdue University, USA, 2017.
- ✓ Attending the workshop on bioinformatics, held in molecular biology lab, research park, faculty of Agriculture, Cairo University, Egypt, 2014.
- ✓ Attending the workshop on gene expression analysis on large scale using microarray and real-time PCR techniques, held in molecular biology lab, research park, faculty of Agriculture, Cairo University, Egypt, 2014.
- ✓ Attending the workshop on proteomics: drug targets and biomarkers discovery, held in biotechnology center for services and researches and Arab Society of Stem Cells and Molecular biology (ASSCMB), Cairo University, Egypt, 2014.
- ✓ Attending the workshop on real time PCR, held in oncology diagnostic unit, faculty of Medicine, Ain Shams University, Egypt, 2014.
- ✓ Attending the workshop on uses of advanced immunological techniques workshop. Held in Agricultural Research Center, 2013.
- ✓ Attending training course on awareness, QMS ISO 9001:2008, Engineering and Quality Experts Co, held in NODCAR, Egypt, 2012.

- ✓ Attending training course on Documentation and implementation, QMS ISO 9001:2008, Engineering and Quality Experts Co, held in NODCAR, Egypt, 2012.
- ✓ Attending training course on internal audit, QMS ISO 9001: 2008, Engineering and Quality Experts Co, held in NODCAR, Egypt, 2012.

3: Conferences and Seminars:

- ✓ The second international conference of pharmaceutical sciences, 'Future prospective on drug research and sustainable development', College of pharmaceutical sciences and drug manufacturing, MUST University, 6th of October, Egypt, 11-12 July 2023.
- ✓ Scientific conference of Africa Health ExCon, Egyptian international exhibition center-EIEC, Cairo, Egypt, 6-9 June 2023.
- ✓ IU/PU Joint Symposium on Spinal Cord & Brain Injury Research, Goodman Hall, Indianapolis University, USA, 2019.
- ✓ Jenkins/Knevel and Kienly Award Symposium held in Purdue Memorial Union South Ballroom, Purdue University, USA, 2016.
- ✓ Annual Scientific Conference of the Egyptian Society of Biochemistry and Molecular Biology in collaboration with Egyptian Society of Tumor Markers Oncology. Molecular biology and Malignancy update, Ain Shams University Guest House, Cairo, Egypt, 2014.
- ✓ 11th National Conference of Biochemistry and Molecular Biology (Disease Diagnosis & Health Care). National Committee for Biochemistry and Molecular Biology, Academy of Scientific Research & Technology. Ain Shams University Guest House, Cairo, Egypt, 2014.
- ✓ Attendance and active participated in the module entitled "Managing Conflicts using Constructive Negotiation Techniques" of the further domain "Soft Skills" within the DAAD Kairo Akademie, 2011.
- ✓ The Symposium organized by the National Committee for Biochemistry and Molecular Biology under the title "New Approaches in Biochemistry and Molecular Biology in Health and Disease", 2011.
- ✓ Attendance and active participated in the conference events Biochemistry and Molecular Biology "present and future", 2010.



4: Teaching Scopes:

My major goal in teaching is to create an atmosphere where every student engages in long-term learning with interest and curiosity. To achieve this goal:

Keep it simple: focusing on the core ideas of the course, keeping them lean, and anchoring them to what students already know.

Pique student curiosity: Starting the lecture with gaps, not facts to create interest and curiosity among students to learn about the facts.

Create Engaging Environment: I use hands-on tasks to let students gain a deep understanding of the core concepts, apply their new knowledge, and acquire true ownership of what they have learned.

Build teacher-student relationships: I understand how emotions impact students learning and well-being. Thus, I'll set environment with students to build strong, supportive relationships.

Stories: Using the power of story to help students absorb scientific facts and concepts in a lasting way.

Exposure to research literature is an integral part of my course plans, in part because comprehension of course material is enhanced by an understanding of the methods used to discover that information.

5: Scientific supervision number:

- 1) Mai El Tawil: Master student, Faculty of Pharmacy, Cairo University.
- 2) Donia Khaled: Master student, Faculty of Pharmacy, Sinai University.
- 3) Dina Abdelrazek: Master student, Faculty of Pharmacy, Cairo University

6: Peer reviewing of scientific research/ Projects:

- Reviewer of the 2019 Indiana Clinical and Translational Sciences Institute (CTSI) Postdoc Challenge, a collaboration between Indiana University, Indiana University School of Medicine, IUPUI, Purdue University, and the University of Notre Dame, USA.
- Volunteering to serve as a poster judge at the 2019 Office of Interdisciplinary Graduate Program (OIGP) Spring Reception, Purdue University, USA.
- Reviewer in European Journal of Gastroenterology and Hepatology (EJGH).
- Reviewer in American University in Indiana (AUI) research journal.
- Help as a reviewer in Journal of Parkinson's Disease.

7: Scientific Mission:

- Early Career: My early career as a quality control analyst and assistant researcher, I was responsible for quality control analysis of some medicines in their raw form or in its final dosage form for new products under registration or for reevaluation their compliance with the specifications and standard required to ensure their safety and effectiveness.
- My master degree: My research was focused on determination of the toxic effect of non-steroidal anti-inflammatory drugs on the liver as well as the kidney. The objective of this study was to investigate the harmful hepatotoxicity and nephrotoxicity effects induced by short and long term administration of Paracetamol, Nimesulide, and Lornoxicam drugs in rats. Results revealed that liver and kidney lysosomal enzymes activities (ACP, β -NAG and β -GAL) were significantly increased by paracetamol followed by Nimesulide in acute study as compared with chronic study, while no changes were observed in lysosomal enzymes of Lornoxicam group in both studies. Serum liver enzymes activities (AST, ALT and γ -GT) and (urea and creatinine) levels were significantly increased by Paracetamol followed by Nimesulide and Lornoxicam in chronic study as compared with acute study. Liver and kidney GSH levels and antioxidant enzymes activities were significantly decreased by Paracetamol followed by Nimesulide in acute study as compared with chronic study, while no changes were observed by Lornoxicam in both organs either in acute or chronic studies. Liver and kidney MDA levels were significantly increased by Paracetamol followed by Nimesulide in acute study as compared to chronic study. These results demonstrated that liver and kidney functions were affected by oxidative stress greatly by Paracetamol than Nimesulide or Lornoxicam in both studies.
- My PhD degree: During my PhD studies, I was a visiting scholar at the Department of Medicinal Chemistry and Molecular Pharmacology (MCMP), school of Pharmacy, Purdue University, my research contributions there were focused on the effect of miR-26a in the development of alcoholic and non-alcoholic fatty liver diseases using *in-vitro* models. Showing its regulation effects on the gene expression involved in lipid metabolism, trying to find which pathway involved. Results from my research were highly relevant as they provided new details into the possible pathways that could be involved and allowed for further extrapolations into the development of certain diseases and their progression.

- **Postdoctoral Career:** As a postdoctoral fellow, my research has provided a compelling link between mutations of alpha synuclein (aSyn) protein and its aggregation behavior. Previous studies have shown that aSyn variants have different aggregation propensities, but till now there are no clues about how this aggregates transfer from cell to cell in a prion-like mechanism. My research is focused on what are the post-translational modifications (PTMs) which may promote the aSyn aggregation and in which way it can spread to other cells. Recently published data suggest that the aggregation of membrane-bound aSyn plays a central role in the protein's neurotoxicity in Parkinson's disease (PD) via a mechanism involving vesicle disruption. We hypothesize that certain PTMs promote the protein's aggregation at the surface of phospholipid membranes, resulting in enhanced aSyn neurotoxicity. This hypothesis is supported by evidence that some PTMs alter the conformation of membrane-bound aSyn and/or interfere with aSyn-membrane interactions, thereby potentially favoring interactions between neighboring membrane-bound conformers. To address our hypothesis, we propose the following aims: (i) Identify aSyn modifications that promote aSyn self-assembly at membrane surfaces; and (ii) Determine the effects of PTMs on aSyn self-assembly on neuronal membranes and aSyn neurotoxicity in cell culture. I originally developed a novel protocol for:
- 1) The purification and isolation of synaptic vesicles and synaptosomes.
 - 2) Non-seeded aggregation kinetics of aSyn under quiescent conditions in acidic medium.

8: Consultancy Experience:

- Cell culture unit, Reference laboratory, Egyptian Drug Authority (EDA).

10: Other Activities:

- ✓ **Speaker** in "Formulation and testing of cosmetics products as per European guidelines" workshop held in EDA, presenting the part concerning the biological testing for cosmetic safety assessment, Egyptian Drug Authority (EDA), 2021.
- ✓ **Achievements:**
 - Cofounder of cell based analysis unit, Reference laboratory, Egyptian Drug Authority.
 - Participate in the localization of the medical devices industry in Egypt by providing the required tests according to ISO-10993.

- Participate in preparing the cell based analysis unit to get ISO- 17025 certificate from the Egyptian Accreditation Council (EGAC) in the biological evaluation of medical devices testing.

F) Scientific Publications:

Last 10 year of published Scientific Papers

-International journals:

- 1- Abdelhady R, Younis NS, Ali O, Shehata S, Sayed RH, Nadeem RI (2023). Cognitive enhancing effects of pazopanib in D-galactose/ovariectomized Alzheimer's rat model: insights into the role of RIPK1/RIPK3/MLKL necroptosis signaling pathway. *Inflammopharmacology*. PMID: 37458952.
- 2- Abdelnaby, Rana M., Heba S. Rateb, Omaima Ali, Ahmed S. Saad, Rania I. Nadeem, Sahar M. Abou-Seri, Kamilia M. Amin, Nancy S. Younis, and Rasha Abdelhady (2022). "Dual PI3K/Akt Inhibitors Bearing Coumarin-Thiazolidine Pharmacophores as Potential Apoptosis Inducers in MCF-7 Cells" *Pharmaceuticals* 15, no. 4: 428. <https://doi.org/10.3390/ph150404280>
- 3- Nehad M. El-Dydamony, Rana M. Abdelnaby, Rasha Abdelhady, Omaima Ali, Mohamed I. Fahmy, Rasha R. Fakhr Eldeen & Amira A. Helwa (2022). Pyrimidine-5-carbonitrile based potential anticancer agents as apoptosis inducers through PI3K/AKT axis inhibition in leukaemia K562, *Journal of Enzyme Inhibition and Medicinal Chemistry*, 37:1, 895-911, DOI: 10.1080/14756366.2022.2051022
- 4- Omaima A., Hebatallah A. D., Kamal M. E., and Samy A.A. (2018). miR-26a potentially contributes to the regulation of fatty acid and sterol metabolism *in vitro* human HepG2 cell model of nonalcoholic fatty liver disease. *Oxid. Med. Cell Longev*, vol. 2018, Article ID 8515343. <https://doi.org/10.1155/2018/8515343>.
- 5- Omaima Salah-Eldin, Samy A. Abd El-Azim, Kamal M. Eldeib, Maged M. Barakat (2012). Is lysosomal enzymes changes important in the pathogenesis of liver and kidney injury induced by short and long term administration of some NSAID' drugs in rats? *Life Science Journal*; 9(4): 1102-1113.
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G) Quality Assurance in Higher Education:

- Quality Auditor and quality manager in Egyptian drug authority (EDA).
- ISO courses: in Training Courses/workshops section