



**Heba Nasr Mohamed Mostafa**

*Lecturer · Pharmacology & Toxicology*

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## EDUCATION

**2013**  
**B.Sc.**

**Bachelor of Pharmaceutical Sciences**  
Faculty of Pharmacy, Cairo University

**2018**  
**M.Sc.**

**Master of Pharmaceutical Sciences — Pharmacology & Toxicology**  
Faculty of Pharmacy, Cairo University  
**Thesis:** *Neuroprotective evaluation of certain antiepileptic drugs on 3-nitropropionic acid-induced neurotoxicity in rats*

**2022**  
**Ph.D.**

**Doctor of Philosophy in Pharmaceutical Sciences — Pharmacology & Toxicology**  
Faculty of Pharmacy, Cairo University  
**Thesis:** *Study of the Possible Role of Adenosine A2A Receptor in Modulating Experimentally Induced Mania in Rats*

## PROFESSIONAL EXPERIENCE

**2022–**  
**Present**

**Instructor (Lecturer) of Pharmacology and Toxicology**  
Faculty of Pharmacy, Cairo University

**2018–2022**  
**Asst. Lect.**

**Assistant Lecturer of Pharmacology and Toxicology**  
Faculty of Pharmacy, Cairo University

## TEACHING ACTIVITIES

**Faculty of Pharmacy, Cairo University (FOPCU)**

**Undergraduate General Courses**

- Basic and Clinical Toxicology (PO 904)
- Biological Standardization (PO E06)

- ▶ Pharmacology-1 (PO 501)
- ▶ Drug Interactions (PO005)
- ▶ Medical Courses

### Undergraduate Clinical Courses

- ▶ Clinical Pharmacology (PO906)
- ▶ Pharmacology-2 (PO602)
- ▶ Pharmacology-1 (POC401)
- ▶ Basic and Clinical Toxicology (POC906)

### Postgraduate Courses

Pharmacovigilance Diploma: Research Project (1327), Medical Biostatistics (1321), Pharmacotherapy-2, Drug Interactions

Premaster Courses: Experimental Pharmacology (2305), Physiology & Pathophysiology of Diseases (2304), Clinical Pharmacology (2306)

### Faculty of Pharmacy, Egyptian Chinese University (ECU)

- ▶ Part-time Lecturer, Pharmacology-2 (2024–2025)
- ▶ Part-time Lecturer, Pharmacology-2 (2025–2026)
- ▶ Part-time Lecturer, Pharmacology-3 (2025–2026)

### Faculty of Pharmacy, Misr International University (MIU)

- ▶ Part-time Lecturer, Pharmacology-1 (2025–2026)
- ▶ Part-time Lecturer, Pharmacology-3 (2025–2026)

## RESEARCH ACTIVITIES

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### Peer-Reviewed Publications

**1. Shalaby HN, El-Tanbouly DM, Zaki HF.** Topiramate mitigates 3-nitropropionic acid-induced striatal neurotoxicity via modulation of AMPA receptors. *Food Chem Toxicol.* 2018;118:227-234. doi: 10.1016/j.fct.2018.05.022.

**2. Shalaby HN, Zaki HF, Ain-Shoka AAA, Mohammed RA.** Adenosine A2A Receptor Blockade Ameliorates Mania Like Symptoms in Rats: Signaling to PKC- $\alpha$  and Akt/GSK-3 $\beta$ / $\beta$ -Catenin. *Mol Neurobiol.* 2022;59(10):6397-6410. doi: 10.1007/s12035-022-02977-2.

**3. Al-Karmalawy AA, Mohamed AF, Shalaby HN, et al.** Donepezil-Based Rational Design of N-Substituted Quinazolinthioacetamide Candidates as Potential Acetylcholine Esterase Inhibitors for the Treatment of Alzheimer's Disease: In vitro and In vivo Studies. *RSC Med Chem.* 2025. doi: 10.1039/D4MD00778F.

**4. Abdelhady R, Arab HH, Fakhr Eldeen RR, Shalaby HN, et al.** Unveiling the Therapeutic Potential of Dulaglutide in Mitigating Tacrolimus-Induced Nephrotoxicity Through Targeting the miR-22/HMGB-1/TLR4/MyD88/NF- $\kappa$ B Trajectory. *Arch Pharm.* 2025. doi: 10.1002/ardp.202500023.

**5. Shalaby HN, Nawwar DA, Kamel AS, El-Said YA.** Blocking hippocampal voltage-gated potassium channel Kv1.3 by dalfampridine abrogates cognitive impairment in experimental autoimmune

encephalomyelitis mouse model. Eur J Pharmacol. 2025;998:177647. doi: 10.1016/j.ejphar.2025.177647.

6. Aladoly, A.F., Amin, M.M., **Shalaby, H.N.**, Mohamed, A.F., Zakaria, M.Y. PEGylated Flavonoid Aspasomes as a Brain-Targeted Nano-Vesicular Platform for Enhanced Neuroprotection in Stress-Induced Cognitive Dysfunction. AAPS PharmSciTech 27, 200 (2026). <https://doi.org/10.1208/s12249-026-03385-8>.

7. Abdelrheem, N. M., Ahmed, M. A. E., Mohamed, A. F., El Sayed, N. S., & **Shalaby, H. N.** (2026). Anti-inflammatory and antinociceptive effects of fasudil in a reserpine-induced fibromyalgia model: Role of ROCK-regulated leptin–STAT3 signaling. Life Sciences, 395, 124372. <https://doi.org/10.1016/j.lfs.2026.124372>.

8. Abdelrheem, N.M., Ahmed, M.A.E., Mohamed, A.F., **Shalaby, H.N.**, El Sayed, N.S. (2026). Leptin-driven microglial activation in fibromyalgia: mechanistic insights and therapeutic implications. International Immunopharmacology, 180, 116657. <https://doi.org/10.1016/j.intimp.2026.116657>.

9. Kamel AS, **Shalaby HN**, El-Said YAM, Nawwar DA. Kv1.3 Channel Blockade by Dalfampridine Attenuates NLRP3 Inflammasome-Driven Demyelination via the NEK7/Ripk1/FADD Pathway, Matching the Efficacy of Broad P2X7 Antagonism by Suramin in EAE. Drug Dev Res. 2026 May;87(3):e70318. doi: 10.1002/ddr.70318.

10. El-Dessouki AM, **Shalaby HN**, Khalaf SS, Abd-Elmawla MA, Ghaiad HR, Abdel Mageed SS, El-Shiekh RA, Ahmed S, Khalifa HO. Signaling pathways driving multiple sclerosis: From mechanisms to natural-product interventions. Biomed Pharmacother. 2026 May 25;200:119543. doi: 10.1016/j.biopha.2026.119543.

### Under publication

1- Ahmed S. Kamel, Israa Sameh, Mohamed A Khattab, Mahmoud A. El Hassab, Hala F. Zaki, Osama A Badary, **Heba Nasr Shalaby**. Remyelinogenic and Anti-Neuroinflammatory Properties of Thymoquinone via PDE-4D Inhibition and ERK1/2 Suppression in Cuprizone-induced demyelination.

2- Sally A. Fahim; Ahmed M. El-Dessouki; Nourhan Abdellatif; Menna Hesham; Rehab A. Ismail; Rania I. Nadeem; Noha Abdel-Rahman Eldesoky; Mariam K. Ahmed; Mohamed I. Fahmy; Mohamed M. Hafez; Asmaa Ramadan; **Heba Nasr Shalaby**; Ahmed H. Elosaily; Riham A. El-Shiekh; Sherif S. Abdel Mageed. Molecular Diagnostics and Therapeutic Targeting of Bone Disorders: Mechanistic and Translational Insights into Natural Bioactive Compounds.

3- Amal Fathy Aladoly; Maha M. Amin; **Heba Nasr Shalaby**; Ahmed F. Mohamed. Hyaluronic Acid-Coated Spanlastics for Intranasal Delivery of Luteolin to Mitigate Estrogen Deficiency-Associated Cognitive Impairment.

4- Hesham, Menna; Ismail, Rehab A.; Hafez, Mohamed M.; Fahim, Sally A.; Zaki, Mohamed Bakr; El-Dessouki, Ahmed M. ; **Shalaby, Heba**; Ibrahim, Mohamed; El-Shiekh, Riham; Elshaer, Shereen Saeid; Khalifa, Hazim. Pharmacological Mechanistic Insights into Bioactive Compounds for the Management of Metabolic Dysfunction-Associated Steatotic Liver Disease: A Comprehensive Review.

### Thesis Supervision

## Master's Dissertations

- ▶ Pharmacological study of the effect of some antidiabetic drugs in an animal model of valproic acid-induced autism
- ▶ Modulatory effect of roflumilast on cisplatin-induced cognitive impairment in rats
- ▶ Possible therapeutic effect of fasudil in fibromyalgia-like model induced by Reserpine exposure in rats
- ▶ A study of the possible therapeutic benefits of luteolin in 3-nitropropionic acid model of Huntington's disease in rats
- ▶ The potential protective role of certain receptors in harmaline-induced essential tremors in rats

## Doctoral Dissertations

- ▶ Study of the possible role of certain agents in methionine-induced heart failure in rats
- ▶ Therapeutic Role of JAK Inhibitor in a Rat Model of Fibromyalgia

## Scientific Peer Review

Active reviewer for:

- BMC Pharmacology & Toxicology.
- Molecular Neurobiology.
- Cell Biochemistry and Biophysics.
- Scientific Reports.
- Biomedicine & Pharmacotherapy.
- International Immunopharmacology.
- Neurophysiology.
- Neurochemical Research.

## TEXTBOOK CONTRIBUTIONS

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Co-author of student textbooks at the Faculty of Pharmacy, Cairo University:

- ▶ Pharmacology I & II
- ▶ Toxicology and Forensic Chemistry
- ▶ Clinical Pharmacology
- ▶ Biological Standardization
- ▶ Drug Interactions

## CONFERENCES & AWARDS

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- ▶ 1st Place Award- Poster Presentation: "Impact of Prolonged Screen Time on Brain Development and Neuronal Plasticity in Children and Adolescents", 1st All-Russian Conference with International Participation, Sechenov University, Moscow, May 2025
- ▶ Abstract Publication: "Combating Counterfeit Medicines in Egypt: Insights from a National Survey of Community Pharmacists", Drug Safety Journal- 24th ISoP Annual Meeting Abstracts (2026)
- ▶ Abstract Publication: "Clinical Practices, Regulatory Actions, and Pharmacovigilance in Drug Allergy and Anaphylaxis Management: A Comparative Study between Egyptian Physicians and Pharmacists", "Drug safety journal"-24th ISoP Annual Meeting Abstracts (2026)

- ▶ 9th International Scientific Conference of the Faculty of Pharmacy, Cairo University- Poster Presentation (April 2018)
- ▶ Contraceptive Counselling for Pharmacists, Supreme Council of Universities (2024)

## PROFESSIONAL DEVELOPMENT

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### Faculty & Leadership Development Center (FLDC) - Teaching Assistant Period

- ▶ International Publications for Scientific Research (May 2015)
- ▶ Ethical Considerations for the Use of Animals in Scientific Research (December 2017)
- ▶ Ethics of Scientific Research (February 2018)
- ▶ Examination System and Student Assessment (July 2018)
- ▶ Research Team Management (September 2018)
- ▶ University Administration (January 2019)
- ▶ Statistical Analysis in Biological Experiments (July 2019)
- ▶ Use of Technology in Teaching (September 2019)
- ▶ Interactive E-Courses (February 2020)
- ▶ Professional Ethics and Conduct in University Work (August 2020)
- ▶ Credit Hour System (September 2020)
- ▶ Critical Thinking (January 2021)
- ▶ Fundamentals of Blended Learning (May 2021)
- ▶ Digital Transformation Courses (June 2022)

### Faculty & Leadership Development Center (FLDC)- Lecturer Period

- ▶ EKB and Research Sources (May 2023)
- ▶ Sustainable Development in Higher Education (December 2025)
- ▶ Applications of Artificial Intelligence in Education and Scientific Research (April 2026)
- ▶ Entrepreneurship (July 2026)

### Workshops & Training

- ▶ Awareness Workshop on NAQAAE Accreditation Visit Requirements (2026)
- ▶ Interactive Teaching Tools: Mentimeter and Padlet (2025)
- ▶ Drug Abuse and Addiction Workshop, British University in Egypt (2025)
- ▶ Workshop on AI Applications (2024)
- ▶ DKA Workshop- Learning Through Projects (2024)
- ▶ Workshop on Dementia Treatment Options, FOPCU (2024)
- ▶ Symposium on Shaping the Awareness for Dementia in Egypt (2024)
- ▶ Basics of Tissue Culture and Cell Lines Practical Training, Vacsera, Egypt (January–February 2023)
- ▶ Workshop on the Academic Advising System (2023)
- ▶ JoVE Webinar: Bringing Text to Life (2021)
- ▶ Workshop to Introduce Quality Work (2018)

## INSTITUTIONAL SERVICE

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- ▶ Academic Counsellor within the Pharm D Program, Cairo University (2022–present)

- ▶ Member, Department Equipment Committee (2022–2023)
- ▶ Member, Department Glassware Committee (2022–present)
- ▶ Control Member for Second-Year Students (2022–2024)
- ▶ Control Member for Third-Year Students (2025–present)
- ▶ Department Representative, Library Committee (2022–present)
- ▶ Department Representative, Green Office & Environmental Sustainability (2025–present)