Ayman Abdelfattah Bastawy Farag

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Chronology of Education:

09/1998 - 05/ 2003	**Bachelor's degree in pharmaceutical science, Ain Shams University, Egypt.** Grade: Excellent with honors.
06/ 2003 - 08/ 2003	**Master Registration Process**
09/2003 - 05/2008	**Master in Pharmaceutical Chemistry, Helwan University, Egypt.** **Thesis:** Synthesis of some new antimetabolites with expected chemotherapeutic effect.
06/2008 - 08/2009	**PhD Registration Process**
09/ 2009 - 04/2013	**PhD in Pharmaceutical Chemistry, Cairo University, Egypt.** **Thesis:** Design and synthesis of novel group of heterocyclic glycosides with expected biological activity
04/2011- 08/2011	**Internship research (Practical part of PhD) in Pharmaceutical Science Department, University of Alberta, Canada.**

Chronology of Employment:

04/2005 – 08/2005	**Shift Manager Pharmacist in Seif pharmacy.**
09/2005 - 08/2008	**Teaching Assistant in Pharmaceutical Chemistry Department, Faculty of Pharmacy, Ahram Canadian University**

09/ 2008 - 03/2013	**Lecturer Assistant in Pharmaceutical Chemistry Department, Faculty of Pharmacy, Ahram Canadian University**
04/2013 - 05/2019	**Assistant Professor in Pharmaceutical Chemistry Department, Faculty of Pharmacy, Ahram Canadian University**
1-31/08/2015 15/11/2015-15/12/2015 1/02/2017-30/03/2017	**Postdoc. Alexander von Humboldt Research assistant in Institut für Pharmazeutische und Medizinische Chemie Heinrich-Heine-Universität Düsseldorf, Germany**
06/2019- 08/2020	**Assistant Instructor, Research Faculty position in Internal Medicine Department, University of Texas Southwestern Medical Center, USA**
06/2019- 09/ 2024	**Associate Professor in Pharmaceutical Chemistry Department, Faculty of Pharmacy, Ahram Canadian University**
09/ 2022- 09/ 2024	**Acting Head of Pharmaceutical Chemistry Department, Faculty of Pharmacy, Ahram Canadian University**
09/ 2024- 01/2025	**Instructor, Research Faculty position in Internal Medicine Department, University of Texas Southwestern Medical Center, USA**
01/ 2025- Present	**Instructor, Research Faculty position in Sarvar Heart Center, University of Arizona, USA**

Honors and Awards:

2018	**Awarded as best research poster in Challenges in future Pharmaceutical Trends Conference, Ahram Canadian University.**
2021	**Awarded the best researcher in faculty of pharmacy by the dean, Ahram Canadian University.**

Service/Outreach:

Departmental Committees

2022-2024	Chair of the pharmaceutical chemistry Department.

College Committees

2015-2024	Member in the Quality Control unit
2022 -2024	Member in the college council
2022-2024	Member in student affair committee

Publications/Creative Activity:

https://orcid.org/0000-0001-6477-0491

A) Publications with peer review process

1. Elgemeie G.H., **A.B. Farag,** K.M. Amin,O.M. El-Badry, G.S. Hassan, Design, Synthesis and Cytotoxic Evaluation of Novel Heterocyclic Thioglycosides., Med chem, 2014, 4, 814-820.

2. Elgemeie GH, Fathy NM, **Farag A.B**, El-Badry OM, Hassan GS, Amin KM, Halaweish F, (2014) Design, Synthesis and *In vitro* Anti-tumor Evaluation of Novel Acrylohydrazide Thioglycosides. Med chem, 2014, 4, 400-406.

3. Elgemeie G.H., K.M. Amin,O.M. El-Badry, G.S. Hassan, **A.B. Farag,** C.A. Velazequez, A. O. El-Kadi.Synthesis and in vitro anti-tumor activity of new imidazole and thienoimidazole thioglycosides.*J Am Sci*, 2012;8(12):1071-1076.

4. G.H. Elgemeie, **,** N.M. Fathy, W.A. Zaghary, **A.B. Farag** S-Glycosides in Medicinal Chemistry: Novel Synthesis of Cyanoethylene Thioglycosides and Their Pyrazole Derivatives, Nucleoside & Nucleotide and Nucleic acid, 2017, 36, 198-212

5. G.H. Elgemeie, N.M. Fathy **A.B. Farag**, and S. A. Kursani. Novel synthesis of dihydropyridine thioglycosides and their cyctotoxic activity, Nucleoside & Nucleotide and Nucleic acid., 2017, 36,328-342.

6. G.H. Elgemeie, **A.B. Farag**, Design, synthesis, and in vitro anti-hepatocellular carcinoma of novel thymine thioglycoside analogs as new antimetabolic agents, Nucleoside & Nucleotide and Nucleic acid., 2017, 36, 355-377.

7. **A.B. Farag**, A. Magdi, Spectrophotometric study of the interaction between a novel benzothiazole thioglycoside as antimicrobial agent with bovine serum albumin, Chemistry Research Journal, 2017, 2, 66-72.

8. M. H. Sanad**, A.B .Farag,** D. H. Salama, Radioiodination, Molecular Modelling and Biological Evaluation of Aniracetam as a Tracer for Brain Imaging, Egyptian journal of Radiation Sciences and Application, 2017, 2, 131-141.

9. G.H. Elgemeie, **A.B. Farag**, N.M. Fathy and S. A. Kursani. Design, synthesis, molecular docking and anti-hepatocellular carcinoma evaluation of novel acyclic pyridine thioglycosides, Nucleoside & Nucleotide and Nucleic acid, 2018, 37,186-198.

10. **A.B. Farag**, HA Ewida, MS Ahmed, Design, synthesis, and biological evaluation of novel amide and hydrazide based thioether analogs targeting Histone deacteylase (HDAC) enzymes, European journal of medicinal chemistry, 2018, 148, 73-85.

11. M. H. Sanad**, A.B .Farag,** D. H. Salama, Radioiodination and bioevaluation of rolipram as a tracer for brain imaging: In silico study, molecular modeling and gamma scintigraphy, Journal of Labelled Compounds and Radiopharmaceuticals, 2018, 61, 501-508.

12. M. H. Sanad**, A.B .Farag,** M. A. Motaleb**,** Radioiodination and biological evaluation of landiolol as a tracer for myocardial perfusion imaging: preclinical evaluation and diagnostic nuclear imaging**,** Radiochimica Acta, 2018, 106 (12), 1001-1008**.**

13. M. H. Sanad**, A.B .Farag,** G, M, Saleh, Radiosynthesis and Biological Evaluation of ^{188}Re-5,10,15,20-Tetra(4-pyridyl)-21*H*,23*H*-porphyrin Complex as a Tumor-Targeting Agent, Radiochemistry, 2019, 61, 347-351.

14. M. H. Sanad, F. Marzook, G.M. Saleh, **A.B. Farag**, H. M. Talaat, Radiolabeling, Preparation, and Bioevaluation of 99m Tc-Azathioprine as a Potential Targeting Agent for Solid Tumor Imaging, Radiochemistry, 2019, 61, 478-482.

15. G.H. Elgemeie, N.M. Fathy **A.B. Farag**, and I.B Yahab. Design and synthesis of new class indeno[1,2-b]pyridine thioglycosides, , Nucleoside & Nucleotide and Nucleic acid, 2020, 39,1-16.

16. M. H. Sanad**,** S. F. A. Rizvi**, A.B .Farag*,** Synthesis, characterization and bioevaluationof 99m Tc nitride-oxiracetam as brain imaging model**,** Radiochimica Acta, 2021, 109 (6), 477-483.

17. M. H. Sanad**, A.B .Farag*,** S. F. A. Rizvi***,** In silico and In vivo study of radioiodinated nefiracetam as radiotracer for brain imaging in mice**,** Radiochimica Acta, 2021, 109 (7), 575-582.

18. M H Sanad, HM Eyssa, FA Marzook, SFA Rizvi, ASM Fouzy, Sabry A Bassem, Alhussein A Ibrahim Synthesis, radiolabeling, and biological evaluation of 99mTc-Tricarbonyl mesalamine as a potential ulcerative colitis imaging agent**,** Radiochemistry, 2021, 63 (6), 835-842.

19. M H Sanad, H M Eyssa, FA Marzook, **A B Farag**, SFA Rizvi, SK Mandal, SS Patnaik, ASM Fouzy, Optimized chromatographic separation and bioevalution of radioiodinated ilaprazole as a new labeled compound for peptic ulcer localization in mice**,** Radiochemistry, 2021, 63 (6), 811-819.

20. M H Sanad, FA Marzook, SFA Rizvi, **A B Farag**, ASM Fouzy, Radioiodinated azilsartan as a new highly selective radiotracer for myocardial perfusion imaging**,** Radiochemistry, 2021, 63 (4), 520-525.

21. M H Sanad, H M Eyssa, FA Marzook, **A B Farag**, SFA Rizvi, Sudip Kumar Mandal, Soumya Stuti Patnaik, ASM Fouzy, Sabry A Bassem, Francis Verpoort, Comparative bioevaluation of 99mTc tricarbonyl and 99mTc-Sn (II) lansoprazole as a model for peptic ulcer localization**,** Radiochemistry, 2021, 63 (5), 642-650.

22. M H Sanad, H M Eyssa, F A Marzook, **A B Farag**, SFA Rizvi, Sudip Kumar Mandal, Soumya Stuti Patnaik, ASM Fouzy, Sabry A Bassem, Francis Verpoor, Radiosynthesis and biological evaluation of 99mTc nitrido-levetiracetam as a brain imaging agent**,** Radiochemistry, 2021, 63 (5), 635-641.

23. M H Sanad, S F A Rizvi, **A B Farag**, Radiosynthesis and *in silico* bioevaluation of ^{131}I-Sulfasalazine as a highly selective radiotracer for imaging of ulcerative colitis**,** Chemical Biology & Drug Design, 2021, 98 (5), 751-761.

24. MH Sanad, **A B Farag**, Sabry A Bassem, FA Marzook, Preparation, characterization, and bioevaluation of 99mTc-famotidine as a selective radiotracer for peptic ulcer disorder detection in mice, Radiochimica Acta, 2022, 110 (1), 67-74.

25. M H Sanad, **A B Farag**, Sabry A Bassem, FA Marzook, Radioiodination of zearalenone and determination of Lactobacillus plantarum effect of on zearalenone organ distribution: In silico study and preclinical evaluatione,Toxicology Reports, 2022, 9, 470-479.

26. M H Sanad, H M Eyssa, FA Marzook, **A B Farag**, Preparation and Bioevaluation of [99mTc] Tricarbonyl Omeprazole for Gastric Ulcer Localization in Mice, Radiochemistry, 2022, 64 (1), 54-61.

27. M H Sanad, S F A Rizvi, **A B Farag**, Design of novel radiotracer 99mTcN-tetrathiocarbamate as SPECT imaging agent: a preclinical study for GFR renal function, Chemical Papers, 2022, 76 (2), 1253-1263.

28. MH Sanad, Fawzy A Marzook, **A B Farag**, Sudip Kumar Mandal, Syed FA Rizvi, Jeetendra Kumar Gupta, Preparation, biological evaluation and radiolabeling of [99mTc]-technetium tricarbonyl procainamide as a tracer for heart imaging in mice Radiochimica Acta, 2022, 110 (4), 267-277.

29. MH Sanad, **A B Farag**, FA Marzook, SK Mandal, Radiocomplexation, Chromatographic Separation and Bioevaluation of [99mTc] Dithiocarbamate of Procainamide as Selective Labeled Compound for Myocardial Perfusion Imaging, Pharmaceutical Chemistry Journal, 2022, 56 (6), 777-784.

30. M H Sanad, SFA Rizvi, F A Marzook, **A B Farag**, In-Silico Study, Preparation and Biological Evaluation of 99MTC-Mesalamine Complex as Radiotracer for Diagnostics and Monitoring of Ulcerative Colitis in Mice, Pharmaceutical Chemistry Journal, 2022, 56 (6), 754-761.

31. Sanad, Mahmoud H., Fawzy Abdel Megeed Marzook, Safaa Bekheet Challan, Heba Mahmoud Essam, and **Ayman B. Farag.** "Radioiodination, and Biological Assessment of Olsalazine, as a Highly Selective

Radiotracer for Ulcerative Colitis Imaging in Mice." *Arab Journal of Nuclear Sciences and Applications* 2023, 56, 3, 105-120.

32. Mahmoud S Ahmed, **Ayman B. Farag**, etal., " FDA approved drugs with antiviral activity against SARS-COV-2: From structure- Based repurposing to host- specific mechanisms", Biomedicine & Pharmacotherapy, 2023, 162, 114614.

33. M H Sanad, H. M. Eyssa, SFA Rizvi, F A Marzook, **A B Farag**, Radioiodinated procainamide as radiotracer for myocardial perfusion imaging in mice, Pharmaceutical Chemistry Journal, 2023, 57, 543-549.

34. MH Sanad, H M Eysaa, **A B Farag**, FA Marzook, A Elrefaei, A S M Fouzy, S B Challan, Radiocomplexation, Biological evaluation and Characterization of [99mTc] – 5- [(3- carboxy-4-hydroxyphenyl)diazenyl]-2-hydroxybenzoic acid as novel agent for imaging of ulcerative colitis in mice, Radiochemistry, 2023, 65, 378-386.

35. MH Sanad, **A B Farag** et al., Facile one-pot strategy for radio prepration of radioiodinated phenylpiracetam as a new highly selective radiotracer for brain imaging, Egyptian Journal of Chemistry, 2024,189-198.

36. MH Sanad, Safaa B Challan, HM Essam, Fatma Y Abdou, **AB Farag,** Design of a novel complex 99mTc-Nilutamide as a tracer for prostate cancer disorder detection in mice, Radiochimica acta, 2024.

37. MH Sanad, SM Abd-Elhaliem, Fatma Y Abdou, Aiten M Soliman, **AB Farag**, Radiolabeled Nefiracetam for Brain Imaging: Chromatographic Separation, Bio-Evaluation and Preclinical Assessment Studies, Pharmaceutical Chemistry Journal, 2024,1-9.

38. MH Sanad, HM Eyssa, Safaa B Challan, **AB Farag**, Fatma Y Abdou, Aiten M Soliman, SM Abd-Elhaliem, Nermeen M El Bakary, Facile one-

pot strategy for brain imaging using radiolabeled [99mTc]-tricarbonyl histamine complex in Mice. Egyptian Journal of Chemistry, 2024.

39. MH Sanad, HM Eyssa, SM Abd-Elhaliem, **AB Farag**, Sabry A Bassem, Radiocomplexation, Quality Control and Bioevaluation of [99mTc] tricarbonyl Rolipram for Brain Imaging in Mice, Pharmaceutical Chemistry Journal, 2024, 58 (4), 652-660.

40. Nermin Younis, Mai Zafer, **Ayman Farag**, Ahmed Elosaily, Phytochemical characterization, antioxidant potential and antibacterial activity of Araucaria columnaris against methicillin-resistant Staphylococcus aureus (MRSA) and Streptococcus pyogenes, Journal of Advanced Pharmacy Research, 2024, 8 (3),121-134.

41. Ahmed, M.S., Nguyen, N.U.N., Nakada, Y. **A B Farag *et al.*** Identification of FDA-approved drugs that induce heart regeneration in mammals. *Nat Cardiovasc Res* 3, 372–388 (2024).

42. Marwa Abdel-Motaal, Dalal Ali Aldakhili, **Ayman B Farag**, Ayman Abo Elmaaty, Marwa Sharaky, Nadia A Mohamed, Saad Shaaban, Abdullah Yahya Abdullah Alzahrani, Ahmed A Al-Karmalawy, Design and synthesis of novel multi-target tetrabromophthalimides as CBS and Topo-II inhibitors and DNA intercalators, *RSC Medicinal Chemistry,* 2024. 15 (11), 3800-3816.

43. **Ayman B Farag**, Aya H Othman, Mohamed K El-Ashrey, Safinaz ES Abbas, Tamer A Elwai, New 6-nitro-4-substituted quinazoline derivatives targeting epidermal growth factor receptor: design, synthesis and *in vitro* anticancer studies, *Future Medicinal Chemistry,* 2024, 16 (19), 2025-2041.

44. Mohamed A Zeidan, Heba F Ashour, Asmaa Yassen, Ayman Abo Elmaaty, **Ayman B Farag**, Marwa Sharaky, Abdullah Yahya Abdullah Alzahrani, Mohammed H AL Mughram, Ahmed A Al-Karmalawy, Dual EGFR and telomerase inhibitory potential of new triazole tethered Schiff bases endowed with apoptosis: design, synthesis, and biological assessments, RSC Medicinal Chemistry, 2025.

B) Publications without peer review process

1. **A.B. Farag,** P. Wang, I. Boys, J. W. Schoggins, H. Sadek, Identification of Atovaquone, Ouabain and Mebendazole as FDA Approved drugs targeting SARS-COV-2, ChemRxiv, 2020.
2. Hesham Sadek, Ping Wang, Mahmoud Ahmed, Ngoc Uyen Nhi Nguyen, Ivan Menendez-Montes, **Ayman Farag**, Suwannee Thet, Ching-Cheng Hsu, Waleed Elhelaly, Nicholas Lam, Janaka Wansapura, NIGN MA, Shane Zhou, Tiejun Zhang, Rohit Singh, Sakthivel Sadayappan, Joseph Wu, Structural and Phenotypic Correction of K210del Genetic Cardiomyopathy by an FDA Approved Drug, Research Square, 2023.

Conferences / Scholarly Presentations:

2016 **A.B. Farag,** Elgemeie G.H., K.M. Amin,O.M. El-Badry, G.S. Hassan, Synthesis and Cytotoxic Evaluation of Novel Pyrazolomethylene Thioglycosides., Poster Presentation, New Trends in Pharmaceutical And Medical Ressearch, NTPMR, Giza, Egypt.

2018 Aliah S. Abd Elaziz**, A.B. Farag,** Sahar M. Abou-seri, K.M. Amin,O.M. El-Badry, Design, Synthesis and anticancer Evaluation of Novel Imidazopyridine derivatives as Cyclin-Dependant kinase-2 Inhibtor., Poster Presentation, Challenges in future Pharmaceutical Trends, Giza, Egypt.

2019 G.H. Elgemeie, N.M. Fathy **A.B. Farag**, and I.B Yahab. Design, synthesis and cytotoxic evaluation of indeno[1,2-b]pyridine thioglycosides, 6th Euro-Mediterranean conferences of Life Sciences, Pharma and Biomedicine (BioNats).

2022 Ngoc U Nguyen, Mahmoud S Ahmed, Yuji Nakada, Ching-Cheng Hsu, **Ayman Farag**, Ping Wang, Ivan Menendez-Montes, Suwannee Thet, Nicholas T Lam, Diana R Tomchick, Gregory Walcott, Nick V Grishin, Jianyi J Zhang, Hesham A Sadek, Identification of FDA-Approved Drugs That Induce Heart Regeneration in Mammals, CIRCULATION RESEARCH.

2022 A H Othman, **A B Farag**, M. K Ashrey, S E Abbas, T A Elwaie, Design, Synthesis and EGFR inhibitory activity of some novel 6-nitro-4-substituted quinazolines, 5th International Pharma Conference, Helwan University.

2024 Galal Elgemeie, **Ayman B. Farag,** Nahed Fathy, Suzan Khayyat, Nucleic acid component analogues: Design and direct route to novel 2-(β-L-arabino- and β-D-xylopyranosylthio)pyridine glycosides as potential antimicrobial agents, *Second International Science Conference,* Helwan University.

2024 **Ayman B. Farag**, Galal Elgemeie, Ahmed Samir, Nasra Abdel fattah, Samah loutfy , Development of 5-amino-1H-pyrazole-4-carboxamide derivatives as a possible therapeutic new class against human respiratory viruses and perspectives in the drug design for new emerging SARS-CoV-2 infection, *Second International Science Conference,* Helwan University.

2024 Mahmoud S Ahmed, **Ayman B. Farag**, Pan-EphB tyrosine kinase inhibitors in obesity and associated metabolic diseases. American Heart Association's annual Scientific Sessions ,Chicago, IL.

Research Experience / Training courses

Jul. 2024 **Sustainability Metrics in Analytical Chemistry: A Path to Greener Practices**
Faculty of Pharmacy, Ahram Canadian University, Egypt

Dec. 2023 **Targeted Protein Degradation: Mechanisms, Strategies, and Application**
Faculty of Pharmacy, Ahram Canadian University, Egypt

June 2023	**Drug and Protein Analysis by Capillary Electrophoresis and Laser-induced Fluorescence** Faculty of Pharmacy, Ahram Canadian University, Egypt
Feb. 2023	**Exam and Assessment Systems" by NAQAAE** Faculty of Pharmacy, Ahram Canadian University, Egypt
Jan. 2023	**Critical Thinking** FLDC - Cairo University, Egypt
Dec. 2022	**Exam systems and Students Assessment** FLDC - Cairo University, Egypt
Nov. 2022	**International Publishing of Scientific Research** FLDC - Cairo University, Egypt
Nov. 2022	**FTIR and Raman Spectroscopy in Pharmaceutical Industry** Faculty of Pharmacy, Ahram Canadian University, Egypt
Feb. 2022	**"Strategic Planning" by NAQAAE** Faculty of Pharmacy Ahram Canadian University
Jan. 2019	**Graphical representation of concentration as novel technique in spectrophotometric determination of drug substances in formulation** Faculty of Pharmacy, Ahram Canadian University, Egypt
Nov. 2018	**Mass Spectrometry** Faculty of Pharmacy, Ahram Canadian University, Egypt
Nov. 2018	**Participation and organization of the 2nd ACU international conference**
Jul. 2018	**Creative Thinking** Faculty of Pharmacy, Ahram Canadian University, Egypt
May. 2018	**Pharmaceutical Vigilance** Faculty of Pharmacy, Ahram Canadian University, Egypt
Jan. 2018	**Art and leadership skills** Cairo University, Egypt
Dec. 2017	**Assessment of ILOS** Faculty of Pharmacy, Ahram Canadian University, Egypt
Oct. 2017	**Program specification** Faculty of Pharmacy, Ahram Canadian University, Egypt

Nov. 2016	**Forming and building the team up** Faculty of Pharmacy, Ahram Canadian University, Egypt
May 2016	**Participation and organization of the 1st ACU international conference**
May 2015	**Research design, assessment and write up** Institute of international education, USAID
Feb. 2015	**Molecular Modeling Training Course** Faculty of Pharmacy, Asuit University, Egypt
Sep. 2013	**Strategic planning for any higher educational institute course** Faculty of Pharmacy, Ahram Canadian University, Egypt.
Sep. 2008 - Mar. 2013	**Research Assistant in Pharmaceutical Chemistry**. Faculty of Pharmacy, Cairo University, Egypt.
April 2011- Aug. 2011	**Research Assistant in Medicinal Chemistry.** .Faculty of Pharmacy, University of Alberta, Canada
May 2010- July 2010	**Audit student clinical pharmacy courses** via video conference with Faculty of pharmacy, Tronto University, Canada in Ahram Canadian University, Egypt.
Sep. 2005 - Aug. 2008	**Research Assistant in Pharmaceutical Chemistry** Faculty of Pharmacy, Helwan University, Egypt.
July 2002 – Aug. 2002	**Drug Quality Control training** Elqahera pharmaceutical Company, Egypt.

Projects and Assignments

1- Design, synthesis, and biological evaluation of new imidazole and thienoimidazole thioglycosides for Breast cancer treatment.
2- Synthesis and cytotoxic evaluation of novel heterocyclic thioglycosides.
3- Study the docking scores of some heterocyclic thioglycosides targeting HSP-90.
4- Synthesis of a new class of cyanoethylene thioglycosides and their pyrazole derivatives.
5- Novel epigenetic small molecules to combat cancer.
6- Synthesis of new small molecules as HDAC inhibitors.
7- Radiolabelling of FDA approved drugs for imaging of different organs.

8- Repurposing of FDA approved drugs against SARS-COV-2.
9- Clinical trial on Atovaquone for treatment of COVID-19 sponsored by University of Texas Southwestern Medical Center, NCT04456153.
10- Repurposing of FDA approved drugs for cardiac regeneration.

Research Grants

Title of the Grant	Source	Role	Total Amount	Period
Novel epigenetic small molecules to combat cancer	Alexander von Humboldt	Post-Doc	50.000 Euro	June 2016-Dec 2018

Teaching Responsibilities

- Teaching Organic Chemistry I/II Labs for pharmacy students.
- Teaching Organic Chemistry III lectures /labs for pharmacy students.
  The course is designed so that the students gain understanding of basic concepts of spectroscopy especially Ultraviolet, Infrared, H1NMR, C13NMR and Mass spectroscopy. Furthermore, students understand the applications of these techniques to elucidate and predict the structure of any organic pharmaceutical compound.
- Teaching Medicinal Chemistry I lectures /labs for pharmacy students.
  The first part of this course focuses on the role of the physical and chemical properties of the pharmaceutical, pharmacokinetic, pharmacodynamics phases of drug action, drug biotransformation and elimination. The second part of the course covers the chemistry of different drug groups classified on the basis of their pharmacological activities e.g. antibiotics, hormones, anti-mycobacterial agents, anti-viral agents, analgesic drugs including narcotic, non-narcotic and non- steroidal anti-inflammatory agents and oral hypoglycemic. For each group of drugs, students study their chemical structure in relation to activity, methods of synthesis, molecular mode of action and principles of analyses.

- Teaching Medicinal Chemistry II lectures /labs for pharmacy students.

This course is a continuum to Medicinal Chemistry-I. Students learn the chemistry of the other drug groups such as drugs acting on autonomic nervous system, central nervous system, cardiovascular system, local anesthetics in addition to diuretics, gastrointestinal drugs, and anti-cancer agents. The course provides students with comprehensive demonstration of different and updated methods applied in drug discovery and development.

- Teaching Computer Aided Drug Design lectures /labs for pharmacy students.
  This course will cover CADD methods that increase the odds of identifying compounds with desirable characteristics, speed up the hit-to-lead process and improve the chances of getting new compounds past the hurdles of preclinical testing. CADD services apply computational software and chemistry simulation techniques to help identify novel hits or leads against selected therapeutic targets as well as to support medicinal chemistry lead optimization programs. Students learn also the know-how simulations of drug receptor interactions, and drug design strategies as well as steric features of drugs and their molecular modeling.

SUPERVISION RESPONSIBILITIES

- 3 Master students.
- 1 PhD student.