

Ahmed Mahmoud Mahmoud Elkerdawy

Kasr El-Aini – Cairo – Egypt

+201003989227

Ahmed.Elkerdawy@cu.edu.eg



Current position

Associate professor – Department of Pharmaceutical Chemistry
Faculty of Pharmacy – Cairo University.

Associate professor of pharmaceutical chemistry – Faculty of Pharmacy
NewGiza University

Education

PostDoc training (Computer-Aided Drug Design) 2013-2014
Erlangen-Nuremberg University, Erlangen, Germany.
Prof. Tim Clark research group

Doctorate of natural sciences 2013
Erlangen-Nuremberg University, Erlangen, Germany.
“magna cum laude” - Under the supervision of Prof. Tim Clark
“CADD Optimization by Using Quantum-Mechanical Approaches for a
More Accurate Description of Non-Covalent Intermolecular Interactions”

Master’s degree in pharmaceutical science (Medicinal Chemistry) 2007
Faculty of pharmacy, Cairo University, Cairo, Egypt
“Synthesis of Certain Substituted Chromone and Furochromone Derivatives
with Pharmacological Activities”

Premaster courses (Medicinal Chemistry) 2003
Faculty of pharmacy, Cairo University, Cairo, Egypt

Bachelor’s degree of pharmaceutical sciences 2001
Faculty of pharmacy, Cairo University, Cairo, Egypt
“Excellent with honor”

Academic career

**Associate professor in the pharmaceutical and medicinal chemistry
department, Faculty of pharmacy, Cairo University, Egypt.** 2020-

**Lecturer in the pharmaceutical and medicinal chemistry department,
Faculty of pharmacy, Cairo University, Egypt.** 2015-2020

Lecturer (Part Time)- Department of Pharmaceutical Chemistry 2015-2017
Faculty of Pharmacy – MSA university.

**Assistant lecturer in the pharmaceutical and medicinal chemistry
department, Faculty of pharmacy, Cairo University, Egypt.** 2008-2014

Instructor in the Pharmaceutical and Medicinal Chemistry department, Faculty of pharmacy, Cairo University, Egypt.

2001-2007

- Demonstration of various chemical quality control protocols.
- Demonstration of various analytical chemistry approaches.
- Demonstration of various molecular structure identification procedures.
- Demonstration of various synthetic chemistry procedures.

Teaching Experience

- Basic general, physical and organic chemistry.
- Introductory Drug Design courses (Principles of Drug Design).
- Advanced Drug Design courses (Postgraduate level).
- Drug discovery and development Diploma. (Computer-aided drug design module)
- Medicinal chemistry undergraduate courses. (Different Drug classes)

Publications

1. Abdalla R. Mohamed, **Ahmed M. El Kerdawy**, Riham F. George, Hanan H. Georgey, Nagwa M. Abdel Gawad. Design, synthesis and *in silico* insights of new 7,8-disubstituted-1,3-dimethyl-1*H*-purine-2,6(3*H*,7*H*)-dione derivatives with potent anticancer and multi-kinase inhibitory activities. *Bioorganic Chemistry*, **2021**, 107, 104569, DOI: 10.1016/j.bioorg.2020.104569
2. Wagdy M. Eldehna, Sara T. Al-Rashood, Tarfah Al-Warhi, Razan O. Eskandrani, Amal Alharbi, **Ahmed M. El Kerdawy**. Novel oxindole/benzofuran hybrids as potential dual CDK2/GSK-3 β inhibitors targeting breast cancer: design, synthesis, biological evaluation, and *in silico* studies. *J. Enz. Inh. Med. Chem.*, **2021**, 36:1, 270-285, DOI: 10.1080/14756366.2020.1862101
3. Seham S. El-Hawary, Fify I. Fathy, Mona E. EL Tantawy, **Ahmed M. El Kerdawy**, Mai K. Mansourb, Khaled M. Meselhy. Phytochemical Profile and Cytotoxic Activity of Selected Organs of *Sambucus nigra L.* via Enzyme Assay and Molecular Docking Study. *Egypt. J. Chem.* **2020**, 63 (12), 4941 - 4949
4. Tarfah Al-Warhi, **Ahmed M. El Kerdawy**, Nada Aljaeed, Omnia E. Ismael, Rezk R. Ayyad, Wagdy M. Eldehna, Hatem A. Abdel-Aziz and Ghada H. Al-Ansary. Synthesis, Biological Evaluation and In Silico Studies of Certain Oxindole–Indole Conjugates as Anticancer CDK Inhibitors. *Molecules*. **2020**, 25, 2031.
5. Mohammad M. Al-Sanea, Ahmed Elkamhawy, Sora Paik, Kyeong Lee, **Ahmed M. El Kerdawy**, Bukhari Syed Nasir Abbas, Eun Joo Roh, Wagdy M. Eldehna, Heba A.H. Elshemy, Rania B Bakr, Ibrahim Ali Farahat, Abdulaziz I. Alzarea, Sami I. Alzarea, Khalid S. Alharbi, Mohamed A. Abdelgawad. *Bioorg. Med. Chem.* **2020**, 10.1016/j.bmc.2020.115525
6. Heba T. Abdel-Mohsen, Mona A. Abdullaziz, **Ahmed M. El Kerdawy**, Fatma A. F. Ragab, Keith J. Flanagan, Abeer E. E. Mahmoud, Mamdouh M. Ali, Hoda I. El Diwani and Mathias O. Senge. Targeting Receptor Tyrosine Kinase VEGFR-2 in Hepatocellular Cancer: Rational Design, Synthesis and Biological Evaluation of 1,2-Disubstituted Benzimidazoles. *Molecules*. **2020**, 25, 770.
7. Riham F. Georgea, Manal Kandeel, Dina Y. El-Ansary, **Ahmed M. El Kerdawy**. Some 1,3,5-trisubstituted pyrazoline derivatives targeting breast cancer: Design, synthesis, cytotoxic activity, EGFR inhibition and molecular docking. *Bioorg. Chem.* **2020**, 99, 103780

8. Heba Abdelrasheed Allam, Enayat E. Aly, Ahmed K.B.A.W. Farouk, **Ahmed M. El Kerdawy**, Essam Rashwan, Safinaz E.S. Abbass. Design and Synthesis of some new 2,4,6-trisubstituted quinazoline EGFR inhibitors as targeted anticancer agents. *Bioorg. Chem.* **2020**, 98, 103726
9. Heba T. Abdel-Mohsen, Eman A. Abd El-Meguid, **Ahmed M. El Kerdawy**, Abeer E. E. Mahmoud, Mamdouh M. Ali. Design, synthesis, and molecular docking of novel 2-arylbenzothiazole multiangiokinase inhibitors targeting breast cancer. *Arch Pharm Chem Life Sci.* **2020**; 353: e1900340
10. Doaa A. Zaky, Walaa Wadie, Wagdy M. Eldehna, **Ahmed M. El Kerdawy**, Dalaal M. Abdallah, Hanan S. El Abhar. Modulation of endoplasmic reticulum stress response in gut origin encephalopathy: Impact of vascular endothelial growth factor receptor-2 manipulation. *Life Sciences.* **2020**, 10.1016/j.lfs.2020.117654
11. Nadia G. Zaki, Walaa H. Mahmoud, **Ahmed M. El Kerdawy**, Abanoub Mosaad Abdallah, Gehad G. Mohamed. Structural characterization, thermal, DFT, cytotoxicity, and antimetastatic properties of cocaine complexes with La(III), Er(III), and Yb(III). *Res. Chem. Intermed.* **2020**, 10.1007/s11164-020-04146-3
12. Heba T. Abdel-Mohsen, **Ahmed M. El Kerdawy**, Mohamed Omara, Emanuela Berrino, Ahmed S. Abdelsamie, Hoda I. El Diwani, Claudiu T. Supuran. New Thiopyrimidine-Benzenesulfonamide Conjugates as Selective Carbonic Anhydrase II Inhibitors: Synthesis, in vitro Biological Evaluation, and Molecular Docking Studies. *Bioorg. Med. Chem.* **2020**, 28 (5), 115329
13. Ehab M. Gedawy, Asmaa E. Kassab, **Ahmed M. El Kerdawy**. Design, synthesis and biological evaluation of novel pyrazole sulfonamide derivatives as dual COX-2/5-LOX inhibitors. *Eur. J. Med. Chem.* **2020**, 189, 112066
14. Nadia G Zaki; Walaa H Mahmoud; **Ahmed M El Kerdawy**; Abanoub Mosaad Abdallah; Gehad G Mohamed. Heteroleptic Complexes of Cocaine/TMEDA with Some f Block Metals: Synthesis, DFT Studies, Spectral, Thermal, Cytotoxicity and Antimetastatic Properties. *Spectrochimica Acta Part A.* **2020**, Volume 229, 15 March **2020**, 117938
15. Nadia G. Zaki, Walaa H. Mahmoud, **Ahmed M. El Kerdawy**, Abanoub Abdallah, Gehad G. Mohamed. Structural Characterization, Thermal Analyses, Antiproliferative and Antimicrobial Activity of Cocaine Complexes with Mn(II) and Cu(II). *Egypt. J. Ch.* **2020**. 10.21608/ejchem.2019.16748.2019
16. Abd El Kawy, M. A., Michel, C. G., Kirolos, F. N., **El Kerdawy, A. M.**, Sedeek, M. S. In vitro MAO-B Inhibitory Effect of Citrus trifoliata L. via Enzyme Assay and Molecular Docking Study. *Egypt. J. Ch.* **2020**. 10.21608/EJCHEM.2019.14735.1892
17. Iman A.Y. Ghannama, Eman A. Abd El-Meguid, Islam H. Ali, Donia H. Sheir, **Ahmed M. El Kerdawy**. Novel 2-arylbenzothiazole DNA gyrase inhibitors: Synthesis, antimicrobial evaluation, QSAR and molecular docking studies. *Bioorg. Chem.* **2019**, 93, 103373.
18. Abdel-Mohsen, H. T., Omar, M. A., **El Kerdawy, A. M.**, Mahmoud, A. E.E., Ali, M. M., El Diwani, H. I. Novel Potent Substituted 4-Amino-2-thiopyrimidines as Dual VEGFR-2 and BRAF Kinase Inhibitors. *Eur. J. Med Chem.* **2019**. 179, 707-722, 10.1016/j.ejmech.2019.06.063
19. **El Kerdawy A. M.**, Osman, A. A., Zaatar, M. A. Receptor-based Pharmacophore Modeling, Virtual Screening, and Molecular Docking Studies for the Discovery of Novel GSK-3 β Inhibitors. *J. Mol. Model.* **2019**, 25;25(6):171.
20. Somaia S. Abd El-Karim, Yasmin M. Syam, **Ahmed M. El Kerdawy**, Tamer M. Abdelghany. New thiazol-hydrazono-coumarin hybrids targeting human cervical cancer cells: Synthesis, CDK2 inhibition, QSAR and molecular docking studies. *Bioorg. Chem.* **2019**, 86, 80-96.
21. Eldehna, W.; **El Kerdawy A. M.**; Al-Ansary, G. H.; Al-Rashood, S. T.; Ali, M. M.;

- Mahmoud, A. E., Type IIA-Type IIB Protein Tyrosine Kinase Inhibitors Hybridization as an Efficient Approach for Potent Multikinase Inhibitor Development: Design, Synthesis, Anti-proliferative Activity, Multikinase Inhibitory Activity and Molecular Modeling of Novel Indolinone-based Ureides and Amides. *Eur. J. Med Chem.* **2019**, 163, 37-53, 10.1016/j.ejmech.2018.11.061.
22. Fouad, M. A., Tolba, E. H., El-Shal, M. A. and **El Kerdawy, A. M.** QSRR modeling for the chromatographic retention behavior of some β -lactam antibiotics using forward and firefly variable selection algorithms coupled with multiple linear regression. *J. Chromatogr. A.* **2018**, doi: 10.1016/j.chroma.2018.03.042.
 23. Roaiah, H. M.; Ghannam, I. A. Y.; Ali, I. H.; **El Kerdawy A. M.**; Ali, M. M.; Abbas, S. E-S.; El-Nakkady, S. S. Design, synthesis, and molecular docking of novel indole scaffold-based VEGFR-2 inhibitors as targeted anticancer agents. *Arch Pharm Chem Life Sci.* **2018**;1–17.
 24. Halawa, A. H., Elaasser, M. M., **El Kerdawy, A. M.**, Abd El-Hady, A. M. A. I., Emam, H. A., El-Agrody, A. M. Anticancer activities, molecular docking and structure–activity relationship of novel synthesized 4H-chromene, and 5H-chromeno[2,3-d]pyrimidine candidates. *Med. Chem. Res.* **2017**, DOI 10.1007/s00044-017-1961-3
 25. Abdullaziz, M. A., Abdel-Mohsen, H. T., **El Kerdawy, A. M.**, Ragab F. A., Ali, M. M., Abu-bakr, S. M., Girgis, A. S., El Diwani, H. I. Design, synthesis, molecular docking and cytotoxic evaluation of novel 2-furybenzimidazoles as VEGFR-2 inhibitors. *Eur. J. Med Chem.* **2017**, 136, 315-329.
 26. Hassanein, H. H.; Georgey H. H.; Fouad M. A.; **El Kerdawy A. M.**; Said M. F. Synthesis and molecular docking of new imidazoquinazolinones as analgesic agents and selective COX-2 inhibitors. *Future Med. Chem.* **2017**, 9, 553-578, DOI: 10.4155/fmc-2016-0240.
 27. Sommer, T; Hübner, H.; **El Kerdawy, A.**; Gmeiner P.; Pischetsrieder, M.; Clark T. Identification of the Beer Component Hordenine as Food-Derived Dopamine D2 Receptor Agonist by Virtual Screening a 3D Compound Database. *Sci. Rep.* **2017**, 7, 44201; doi: 10.1038/srep44201
 28. Eldehna, W.; Abou-Seri, S.; **El Kerdawy, A. M.**; Ayyad, R. R.; Hamdy, A. M.; Ghabbour, H. A.; Ali, M. M.; Abou El Ella D. A. Increasing the Binding Affinity of VEGFR-2 Inhibitors by Extending their Hydrophobic Interaction with the Active Site: Design, Synthesis and Biological Evaluation of 1-Substituted-4-(4-methoxybenzyl)phthalazine Derivatives *Eur. J. Med. Chem.* **2016**, 113, 50-62.
 29. **El Kerdawy, A.**; Güssregen, S.; Matter, H.; Hennemann, M.; Clark, T. Quantum-mechanics-based molecular interaction fields for 3D-QSAR. *J. Cheminf.* **2014**, 6(Suppl 1):O10
 30. **El Kerdawy, A.**; Tautermann, C. S.; Clark, T.; and Fox, T. Economical and Accurate Protocol for Calculating Hydrogen-Bond-Acceptor Strengths. *J. Chem. Inf. Model.* **2013**, 53, 3262–3272
 31. **El Kerdawy, A.**; Güssregen, S.; Matter, H.; Hennemann, M.; Clark, T. Quantum Mechanics-based Properties for 3D-QSAR. *J. Chem. Inf. Model.* **2013**, 53, 1486–1502
 32. **El Kerdawy, A.**; Murray, J. S.; Politzer, P.; Bleiziffer, P.; Heßelmann, A.; Görling, A.; Clark, T. Directional Non-covalent Interactions: Repulsion and Dispersion. *J. Chem. Theory. Comput.* **2013**, 9, 2264-2275.
 33. **El Kerdawy, A.**; Wick, C. R.; Hennemann, M.; Clark, T. Predicting the Sites and Energies of Non-covalent Intermolecular Interactions Using Local Properties. *J. Chem. Inf. Model.* **2012**, 52(4), 1061-1071.
 34. Muehlbacher, M.; **El Kerdawy, A.**; Kramer, C.; Hudson, B.; Clark, T. Conformation-Dependent QSPR Models: logP(OW). *J. Chem. Info. Model.* **2011**, 51, (9), 2408-2416.
 35. Ragab, F.A.; El-Sayed, N. A.; Eissa, A. A.; **El Kerdawy A. M.** Synthesis and anticonvulsant activity of certain substituted furochromones, benzofuran and flavone

derivatives. *Chem. Pharm. Bull.* **2010**, *58(9)*, 1148-1156.

Funded Research Projects

- 1- **Project code:** IT II 020702, “*Design, Synthesis and Biological Evaluation of Novel Chalcone-based Fibrates as Novel PPAR- α Agonists*”, Bilateral project between National Research Centre (NRC) and Istituto di Chimica del Riconoscimento Molecolare (CNR), 18-03-18 to 17-03-20
- 2- **Project code:** STDF 15063, “*Development of Novel VEGF Tyrosine Kinase Receptor Antagonists Utilizing Molecular Modeling Techniques*”, 24-03-17 to 24-11-18

Industrial training

Boehringer Ingelheim pharmaceutical company, 8/2012-9/2012
Biberach, Germany
Lead identification and lead optimization support department
Project Economical and Accurate Protocol for Calculation of Hydrogen-Bond Strength for Drug Molecules.

Awards

- Excellence awards throughout the college years 1997, 98 (5th), 99 (11th), 2000 (5th) and 2001(2nd).
- Best instructor award in the department of pharmaceutical chemistry, Cairo University for the year 2006.
- Poster prize in the 49th Theoretical chemistry symposium (Erlangen-Nuernberg Uni.) 2013.
- Nomination for the award of scientific excellence of the ACS 2013 (Division of chemical information).

Scholarships

DAAD scholarship for studying in Germany 10/2009-04/2013.

Conferences and workshops

- Invited speaker in the “Recent advances in Pharmaceutical and biomedical applications” Workshop – National Research Center – Cairo -October 2018.
- Invited trainer and lecturer in the “Application of QSAR in Drug Discovery” workshop - faculty of pharmacy – 6th October University – September 2018
- Invited speaker in the 1st Mini Student’s Conference “Frontier Research in Medicinal Chemistry – Approaches in anticancer therapy” – Russian university in Egypt- Badr City - December 2017.
- Invited speaker in the 6th International conference of pharmaceutical and drug industries – research division – National research center – October 2017.
- Invited trainer and lecturer in the CADD I “LBDD” workshop - faculty of pharmacy – Cairo University – July 2017
- Invited speaker in the 8th conference for the faculty of pharmacy, Cairo University; “Worldwide Pharmaceutical Education – Germany as a case study” - 2017

- Attendance “Towards manufacturing of active and inactive pharmaceutical ingredients in Egypt” workshop – Scientific Research Academy – Cairo – Egypt - December 2016.
- Attendance “1st Drug Discovery” workshop – National Research Center – Cairo - December 2016.
- Invited trainer in the molecular modeling workshop - faculty of pharmacy – Asyut University - April 2016.
- C&EN’s Virtual symposium: Advances in drug discovery and development. Online event 16th September 2015.
- Invited trainer in the molecular modeling workshop - faculty of pharmacy – Ain-shams University - May 2015.
- Organizer and lecturer in the workshop “Drug Design strategies: Theories and applications” Faculty of pharmacy – Cairo University – March-May 2015.
- Invited speaker in the 6th conference of the faculty of pharmacy – Cairo University - April 2015.
- Invited speaker in the 1st scientific day, Drug Design and Development Day: From Bench to Market, Zewail City of Science and Technology, 2015.
- Poster presentation in the 28th workshop of molecular modelling (Computer-chemistry-center, Erlangen-Nuremberg Uni.) 2014.
- Talk presentation in the 9th conference of chemoinformatics 2013 Fulda-Germany.
- Poster presentation in the 49th Theoretical chemistry symposium (Erlangen-Nuremberg Uni.) 2013.
- Talk presentation in the 27th workshop of molecular modelling (Computer-chemistry-center, Erlangen-Nuremberg Uni.) 2013.
- Talk and poster presentation in the 6th Summer school “Medicinal chemistry” (University of Regensburg) 2012.
- Participation in the “sequence to structure” Course, Computer-chemistry-center, Erlangen-Nuremberg Uni.) 2012.
- Talk and poster presentation in the 26th workshop of molecular modelling (Computer-chemistry-center, Erlangen-Nuremberg Uni.) 2012.
- Participation in the “Literature search for efficient research” workshop, Erlangen-Nuremberg Uni.) 2012.
- Participation in the 25th workshop of molecular modelling (Computer-chemistry-center, Erlangen-Nuremberg Uni.) 2011.
- Participation in the “Symposium and 80th birthday of Paul von Ragué Schleyer” under the title of “Theory and Experiment: Synergy or Competition?”. 2010
- Poster presentation in the 1st conference for the faculty of pharmacy, Cairo University (March 2008).
- Computer-aided drug design using Molecular Operating Environment software 2008.

Activities

- Scientific coordinator for the 9th international conference for the faculty of pharmacy, Cairo University. As a member of the organizing committee. 2018
- Scientific coordinator for the 8th conference for the faculty of pharmacy, Cairo University. As a member of the organizing committee. 2017
- Scientific coordinator for the 7th conference for the faculty of pharmacy, Cairo University. As a member of the organizing committee. 2016

- Head of the Alumni Office - Faculty of Pharmacy – Cairo University 2015-2016
- Participation in accreditation project of the faculty of pharmacy 2007 as a member of the executive committee.
- Participation in the preparation for the 1st conference for the faculty of pharmacy, Cairo University. As a member of the organizing committee. 2008
- Supervision of many student tours in several drug factories in Egypt. 2001-2009

Soft skill courses

- Academic publishing “Nature research academie”
- Crisis management
- Change management
- Strategic planning and management of higher education institutions.
- I am not just a number “Researcher, journal and institutes Metrics”
- Online quiz design (using Socrative and google form).
- Effective communication skills.
- Grant Proposal writing
- Faculty profession ethics and morals.
- Presentation Skills in English.
- Quality assurance and accreditation.
- Scientific research methods.
- Using of technology in teaching.
- Art of efficient literature search and literature management (in German).
- Time management and teamwork.
- Basic management.
- Scientific publication.

Languages

- English: Excellent.
- German: Good.
- Arabic: Native.

Personal data

- ***Date of birth*** 01/10/1979.
- ***Place of birth*** Cairo - Egypt.
- ***Nationality*** Egyptian.
- ***Marital Status*** married with two children.