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## Ahmed Thabet Negmeldin

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| <b><u>Accomplishments</u></b> | <ul style="list-style-type: none"> <li>- 10 years research experience in medicinal chemistry, drug design, organic chemistry, synthesis, molecular docking, and biological screening of inhibitors.</li> <li>- Author on 8 peer reviewed articles.</li> <li>- Manuscripts of another 3 articles are in preparation or submitted.</li> <li>- Presented posters in 6 scientific conferences, meetings or symposia.</li> <li>- Recipient of 8 awards/fellowship for outstanding research and/or academic records, and Wayne State University Graduate school oral presentation skills micro-credential and visual design skills micro-credential.</li> <li>- 10 years of teaching experience at different universities.</li> <li>- Recipient of 3 awards at Wayne State University for excellence in teaching.</li> </ul>  |
| <b><u>Education:</u></b>      | <ul style="list-style-type: none"> <li>- <b>Ph.D. in Chemistry (Organic chemistry major and Biochemistry minor): Wayne State University, Detroit, MI, USA (06/2017).</b><br/> -GPA: 4.0<br/> -Advisor: Prof. Mary Kay H. Pflum<br/> <i>-Dissertation: Design, synthesis and screening of histone deacetylase (HDAC) inhibitors: SAHA (Vorinostat) analogs and biaryl indolyl benzamide inhibitors display isoform selectivity.</i></li> <li>- <b>M.Sc. in Pharmaceutical Sciences (Pharmaceutical Organic Chemistry): Faculty of Pharmacy, Cairo University, Cairo, Egypt (06/2011).</b><br/> -GPA: 91.33%<br/> -Advisor: Prof. Manal H. Kandeel<br/> <i>-Thesis: Synthesis of some fused pyrazolopyrimidine derivatives with antitumor activity.</i></li> <li>- <b>Bachelor Degree in Pharmacy and Pharmaceutical Sciences: Faculty of Pharmacy, Cairo University, Cairo, Egypt (05/2006)</b><br/> -Excellent cumulative grade with honors.</li> </ul> |

**Academic  
Appointment and  
Teaching  
Experience:**

- **Senior PhD candidate and research assistant, Department of Chemistry, Wayne State University:** (05/2017-07/2017)
- **Senior PhD candidate and Rumble Fellow, Department of Chemistry, Wayne State University:** (08/2016-05/2017)
- **PhD student and graduate research and teaching assistant, Department of Chemistry, Wayne State University:** (08/2012-08/2016)
- Design, plan and manipulate several synthetic routes to synthesize multiple libraries of different classes of Histone Deacetylase (HDAC) inhibitors, and perform different experiments for evaluation of their biological activity and isoform selectivity.
- Design, manipulate, and perform different synthetic routes for enantioselective synthesis of pure enantiomers of some of the promising small molecules, and screening of the enantiopure enantiomers for their activity and selectivity.
- Modification of the FDA-approved drug SAHA (Vorinostat) for cancer treatment to explore the effect of the modifications on activity and/or selectivity.
- Molecular modeling aided (with LeadIt program) and synthesis of several HDAC1/2 isoform selective small molecule HDAC inhibitors.
- Rational design, synthesis and screening of several biaryl indolyl benzamide HDAC inhibitors displaying HDAC1 preference.
- *In vitro* screening of several HDAC inhibitors against individual HDAC isoforms to assess isoform selectivity by using different assay techniques (Hela cell lysates, the ELISA-based HDAC activity assay or recombinant HDAC isoforms).
- *In cellulo* target validation and evaluation of selectivity for the synthesized small molecule inhibitors (SDS PAGE and western blotting techniques).
- *In cellulo* testing of the small molecule inhibitors for their cytotoxicity (MTT assay).
- Computational and molecular docking studies on some of the selective HDAC inhibitors (using Autodock program) to rationalize their observed activity and/or selectivity.
- Development of the first assay for screening and biological evaluation of different HDAC inhibitors that relies on the use of mammalian cell expressed HDAC proteins, to be used in high throughput screening to identify isoform selective HDAC inhibitors (immunoprecipitation, plasmid purification, cell transfection, and assay procedure optimization).

- Characterization of the synthesized compounds using  $^1\text{H}$ NMR,  $^{13}\text{C}$ NMR, LRMS, HRMS, FTIR or polarimeter as well as purity determination and purification by HPLC or Chiral HPLC.
- Teaching of several undergraduate discussion classes and laboratories (Chemistry skills and reasoning CHM1040, Organic Chemistry I CHM1240, Organic Chemistry II CHM2220, and advanced chemical synthesis laboratory for senior students CHM5510).
- Faculty Individual Reports and Student Evaluation of Teaching (SET) reports, generated from the course evaluation office at the university for all classes taught at Wayne State University (08/2012 to 08/2016) based on evaluation forms filled by students registered in my classes showed the following averages of means (out of 5, responses categories were strongly agree 5, agree 4, neutral 3, disagree 2, or strongly disagree 1):
- How would you rate the instructor's teaching in this course: 4.6

**Organization/Clarity:**

- The instructor made clear and understandable presentations: 4.7
- The instructor's use of examples and/or illustrations helped me: 4.6
- Class sessions helped me understand the course content: 4.7

**Instructor Enthusiasm:**

- The instructor was enthusiastic about the subject matter: 4.6
- The instructor encouraged and/or motivated me to do my best work: 4.6

**Breadth of Coverage:**

- The instructor demonstrated good knowledge of the course content: 4.8
- The instructor discussed differing views about the material appropriate to the content: 4.6

**Group Interaction:**

- The instructor encouraged student questions: 4.7
- I felt encouraged to be an active participants: 4.6

**Individual Rapport:**

- The instructor was available to me electronically or in person: 4.7
- The instructor treated all students in the class with respect: 4.7

**-Assistant lecturer in Pharmaceutical Organic Chemistry department, School of pharmacy, Cairo university:** 8/2011-present (on a study leave 08/2012-present).

**-Research and Teaching assistant, Pharmaceutical Organic chemistry department, School of pharmacy, Cairo university:** (06/2008-08/2011)

- Molecular modeling and docking studies using Molecular Operating Environment (MOE) program for study of drug receptor interactions, predicting the relative activity and binding of several candidates, then chemical synthesis of the best inhibitors.
- Synthesis of several pyrazolo[3,4-d]pyrimidine derivatives and evaluation of their cytotoxic activity with different human cancer cell lines (NCI-60) at the National Cancer Institute (NCI) Developmental Therapeutics Program (DTP, Rockville, MD), and with breast and colon cancer cell lines at the national cancer institute (Cairo University, Cairo, Egypt).
- Analysis and interpretation of spectral data (IR,  $^1\text{H-NMR}$ ,  $^{13}\text{C-NMR}$  and Mass spectra) of the newly synthesized compounds, as well as intermediates.
- Practical teaching of the principles and methods for identification of organic compounds and their classification (Organic chemistry I laboratory).
- Practical teaching of different techniques used for the synthesis of several important intermediate compounds and drugs with important medicinal activity. (Organic chemistry II and III laboratories).
- Assistant Coordinator at Pharmacy Alumni Office, School of Pharmacy, Cairo University (10/2010-08/2012).
- Member in experts committee of the School of Pharmacy, Cairo University (Organic Chemistry department teaching assistants representative) (11/2011-08/2012).

**-Teaching assistant, Pharmaceutics department, School of Pharmaceutical sciences and Pharmaceutical industries, Future University in Egypt:** (9/2007-6/2008)

- Spectrometric Identification of Organic Compounds (Discussion class).
- Practical teaching of the principles and methods for identification of organic compounds and their classification (Pharmaceutical Organic Chemistry I).
- Practical teaching of different techniques used for the synthesis of several important intermediate compounds and drugs with important medicinal activity (Pharmaceutical Organic Chemistry II).

**-Quality Assurance Pharmacist, The Egyptian Group For Pharmaceutical Industries factory:** (6/2007 to 9/2007).

**-Community Pharmacist, El-Nemr Pharmacy:** (7/2006 to 6/2008).

## **Publications:**

- **Ahmed T. Negmeldin**, and Mary Kay H. Pflum, "The structural requirements of histone deacetylase inhibitors: C4-modified SAHA analogs display dual HDAC6/HDAC8 selectivity" (*European Journal of Medicinal Chemistry*, Submitted).
- **Ahmed T. Negmeldin**, and Mary Kay H. Pflum, "The structural requirements of histone deacetylase inhibitors: SAHA analogs modified at the C5 position display dual HDAC6/8 selectivity" (*Bioorganic and Medicinal Chemistry Letters*, 2017, 27 (15), 3254-3258).
- **Ahmed T. Negmeldin**, Geetha Padige, Anton V. Bieliauskas, and Mary Kay H. Pflum, "Structural requirements of HDAC inhibitors: SAHA analogues modified at the C2 position display HDAC6/8 selectivity", *ACS Medicinal Chemistry Letters*, 2017, 8 (3), 281-286.
- Jehad Almaliti, Ayad A. Al-Hamashi, **Ahmed T. Negmeldin**, Christin L. Hanigan, Lalith Perera, Mary Kay H Pflum, Robert A. Casero, Jr., and L. M. Viranga Tillekeratne, "Largazole Analogues Embodying Radical Changes in the Depsipeptide Ring: Development of a More Selective and Highly Potent Analogue", *Journal of Medicinal Chemistry*, 2016, 59 (23), 10642-10660.
- Anton V. Bieliauskas, Sujith V.W. Weerasinghe, **Ahmed T. Negmeldin**, and Mary Kay H. Pflum, "The structural requirements of histone deacetylase inhibitors: SAHA analogs modified on the hydroxamic acid", *Archiv der Pharmazie*, 2016, 349 (5), 373-382.
- Geetha Padige, **Ahmed T. Negmeldin**, and Mary Kay H. Pflum, "Development of an ELISA-Based HDAC Activity Assay for Characterization of Isoform-Selective Inhibitors", *Journal of Biomolecular Screening*, 2015, 20 (10), 1277-1285.
- Magdalene K. Wambua, Dhanusha A. Nalawansa, **Ahmed T. Negmeldin**, and Mary Kay H. Pflum, "Mutagenesis Studies of the 14 Å Internal Cavity of Histone Deacetylase 1: Insights toward the Acetate-Escape Hypothesis and Selective Inhibitor Design", *Journal of Medicinal Chemistry*, 2014, 57 (3), 642-650.
- Manal M. Kandeel, Lamia W. Mohamed, Mohamed K. Abd El-hamid, **Ahmed T. Negmeldin**, "Design, Synthesis, and Antitumor Evaluation of Novel Pyrazolo[3,4-d]pyrimidine Derivatives", *Scientia Pharmaceutica*, 2012, 80 (3), 531-545.
- Manal M. Kandeel, Lamia W. Mohamed, Mohamed K. Abd El-hamid, **Ahmed T. Negmeldin**, "Synthesis of novel arylsubstituted pyrazolo[3,4-d]pyrimidines and their evaluation as cytotoxic agents", *International Journal of Chemical Sciences and Technology*, 2011, 1 (4), 126-140.

## Conferences and meetings:

- **Ahmed T. Negmeldin** and Mary Kay H. Pflum, "The structural requirements of histone deacetylase inhibitors: Suberoylanilide hydroxamic acid analogs modified at the C4 position display dual HDAC6/HDAC8 selectivity". Poster presented at: Graduate and postdoctoral research symposium , Wayne State University, Detroit, MI, USA (March 2017).
- **Ahmed T. Negmeldin** and Mary Kay H. Pflum, "The structural requirements of histone deacetylase inhibitors: Suberoylanilide hydroxamic acid (SAHA) analogs modified at the C4 position display dual HDAC6/HDAC8 selectivity". Poster presented at: 18<sup>th</sup> Annual Chemistry Graduate Research Symposium, Department of Chemistry, Wayne State University, Detroit, MI, USA (October 2016).
- **Ahmed T. Negmeldin** and Mary Kay H. Pflum, "The structural requirements of histone deacetylase inhibitors: Suberoylanilide hydroxamic acid (SAHA) analogs modified at the C4 position display dual HDAC6/HDAC8 selectivity". Poster presented at: 2016 Chemistry Biology Interface (CBI) research symposium, Department of Chemistry, Wayne State University, Detroit, MI, USA (September 2016).
- **Ahmed T. Negmeldin** and Mary Kay H. Pflum, "The structural requirements of histone deacetylase inhibitors: Suberoylanilide hydroxamic acid (SAHA) analogs modified at the C4 position display dual HDAC6/HDAC8 selectivity". Poster presented at: 252<sup>nd</sup> American Chemical Society (ACS) conference, Philadelphia, PA, USA (August 2016).
- Geetha Padige, **Ahmed T. Negmeldin** and Mary Kay H. Pflum, "Development of an ELISA-Based HDAC Activity Assay for Characterization of Isoform-Selective Inhibitors". Poster presented at: 17<sup>th</sup> Annual Chemistry Graduate Research Symposium, Department of Chemistry, Wayne State University, Detroit, MI, USA (October 2015).
- Anton V. Bieliauskas, Sujith V.W. Weerasinghe, **Ahmed T. Negmeldin**, and Mary Kay H. Pflum, "The structural requirements of histone deacetylase inhibitors: SAHA analogs modified on the hydroxamic acid". Poster presented at: 16<sup>th</sup> Annual Chemistry Graduate Research Symposium, Department of Chemistry, Wayne State University, Detroit, MI, USA (October 2014).
- Manal M. Kandeel, Lamia W. Mohamed, Mohamed K. Abd El-hamid, **Ahmed T. Negmeldin**, "Synthesis of some fused pyrazolopyrimidine derivatives with antitumor activity". Poster presented at: 32<sup>nd</sup> international conference of pharmaceutical society, Cairo University, Cairo, Egypt (December 2011).

**Fellowships,  
Scholarships and  
Awards:**

- Willard R. Lenz, Jr. Endowed Memorial Scholarship. This award is given annually to senior organic chemistry graduate student(s) with outstanding research and teaching records. Department of Chemistry, Wayne State University, Detroit MI, USA (Honors Convocation, April 2017).
- Graduate school award for 2nd place in the best poster presentation competition. Graduate and Postdoctoral Research Symposium, Wayne State University, Detroit MI (March 2017).
- Recipient of two micro-credentials from Wayne State University graduate school for oral presentation skills for demonstration best practices in oral presentation, and poster design for best practices in academic poster design.
- Thomas C. Rumble University Graduate Fellowship for 2016-2017. This award is given annually to the top graduate students for their outstanding research, publication and academic records.
- Dr. Cal Stevens memorial scholarship. This award is given annually to the chemistry graduate students that have demonstrated an outstanding record in research in the form of a travel award. Department of Chemistry, Wayne State University, Detroit MI, USA (Honors Convocation, April 2016).
- Clifford G. Drouillard Annual Chemistry Award. This award is given annually to a chemistry student that has demonstrated an outstanding record in departmental service and/or research. Awarded for both research and superior performance as a Graduate Teaching Assistant. Department of Chemistry, Wayne State University, Detroit MI, USA (Honors Convocation, April 2016).
- James C. French Graduate award for 2016. This award is given annually to the organic graduate student who, in the judgment of the faculty, has achieved the most outstanding record in combined academic work and research. Department of Chemistry, Wayne State University, Detroit MI, USA (Honors Convocation, April 2016).
- Graduate Student Professional Travel Award (GSPTA), awarded from the Department of Chemistry, in cooperation with the College of Liberal Arts and Sciences (March 2016).
- Graduate School honor citation for excellence in teaching award for 2014-2015 academic year. Awarded for being one of the top graduate teaching assistants in the department. Department of Chemistry, Wayne State University, Detroit, MI, USA (Honors Convocation, April 2015).
- Norman A. LeBel Endowed Graduate Award in Organic Chemistry for 2014. This award is given annually to the 2nd year organic graduate student who, in the

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|   | <p>judgment of the faculty, has achieved the most outstanding record in combined academic work and research. Department of Chemistry, Wayne State University, Detroit, MI, USA (Honors Convocation, April 2014).</p> <ul style="list-style-type: none"> <li>- Departmental honor citation for excellence in teaching award for 2013-2014 academic year. Awarded for being one of the top graduate teaching assistants in the department. Department of Chemistry, Wayne State University, Detroit, MI, USA (Honors Convocation, April 2014).</li> <li>- Graduate Teaching Assistant Award and scholarship, Wayne State University, Detroit, Michigan, USA, (2012, 2013, 2014, and 2015).</li> <li>- Honors, Faculty of Pharmacy, Cairo University, Cairo, Egypt (2006).</li> <li>- Professor M. Farid Elmeligy (Dean, School of Pharmacy, Misr University for Sciences and Technology) award (Graduation ceremony, 2006).</li> <li>- The European Egyptian pharmaceuticals company award (Graduation ceremony, 2006).</li> <li>- PHARCO pharmaceuticals award (Graduation ceremony, 2006).</li> </ul> |
| <p><b><u>Professional Memberships and Affiliations:</u></b></p> | <ul style="list-style-type: none"> <li>- Member of the American Chemical Society (ACS) (2016-present)</li> <li>- Member of ACS medicinal chemistry division (2016-present)</li> <li>- Member of the union of graduate student workers at Wayne State University (GEOC) (2012-2016)</li> <li>- Member of American Federation of Teachers (AFT) (2012-2016)</li> <li>- Registered Pharmacist in Egypt (2006-present)</li> <li>- Member of general syndicate of pharmacists, Cairo, Egypt (2006-present)</li> </ul>  |
| <p><b><u>Internships:</u></b></p>                               | <ul style="list-style-type: none"> <li>- <b><u>Sanofi-Aventis Pharma:</u></b> Summer 2005</li> <li>- <b><u>The Nile company for pharmaceutical industry:</u></b> Summer 2005</li> <li>- <b><u>El-Gamaa community pharmacy:</u></b> Summer 2002, 2004, and 2005</li> </ul>   |
| <p><b><u>Professional Training and Workshops:</u></b></p>       | <p><b><u>Training attended at Faculty and Leadership Development Center (Cairo University):</u></b></p> <ul style="list-style-type: none"> <li>- Strategic planning (28-29/8/2017).</li> <li>- Research teams management (23-24/8/2017).</li> <li>- University management (7-8/8/2017).</li> </ul>  |



- Effective presentation skills (26-28/8/2012).
- E-learning (11-13/2/2012).
- Use of technology in teaching (02-05/5/2011).
- Exams and standard evaluation systems (12-14/2/2011).
- International publishing of scientific research (20-22/9/2010).
- Managing time and meetings (22-24/2/2010).
- Quality standards in the education process (27-29/7/2009).
- Research ethics (18-20/8/2008).

**Training and Workshops attended at Faculty of Pharmacy, Cairo University:**

- Molecular modeling and drug design using Molecular Operating Environment (MOE) software workshop (1-2/5/2010).
- Risk management and emergency plan (14/5/2010).