Adam S. Duerfeldt, Ph.D.

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Education:
2006: B.A., Chemistry, Central College, IA
2011: Ph.D. in Medicinal Chemistry, The University of Kansas, KS

2014: Post-doc, The Scripps Research Institute, CA

Academic Appointments:
2005-2006: Undergraduate Research Assistant, Central College, IA
2006-2011: Madison and Lila Self Graduate Fellow, The University of Kansas, KS
2012-2014: American Cancer Society Postdoctoral Fellow, The Scripps Research Institute, CA
2014-present: Assistant Professor, Department of Chemistry and Biochemistry, University of Oklahoma, OK

2018: Co-Founder, Excitant Therapeutics
2016-present: Distinguished Faculty Fellow of Biosciences in the Center for Applied Research & Development, University of Oklahoma, OK

Awards and Honors:
2005: ESPN the Magazine First Team Academic All-American
2006: ESPN the Magazine First Team Academic All-American
2006: Alpha Zeta Mu
2006: Woody Hayes Division-III National Scholar Athlete of the Year
2006: IIAC Duane Schroeder Scholar of the Year
2006: ESPN the Magazine Academic All-American Player of the Year
2009: The University of Kansas Cancer Symposium Excellence in Research Award
2011: The University of Kansas Irsay–Dahle Award (Awarded to recognize outstanding contributions in academics, research activities and citizenship by a senior graduate student in the Medicinal Chemistry Department)

2011: Medicinal Chemistry Ph.D. with Honors
2013: Elsevier Top 10 Reviewer for Bioorganic & Medicinal Chemistry Letters
2015: University of Oklahoma Junior Faculty Fellowship Award
2015: American Cancer Society Special Friend: Researcher Award
2015-2016: University of Oklahoma Inaugural Faculty Leadership Academy Fellow
2017: Jack L. Beal Award, Journal of Natural Products
2017: University of Oklahoma CBR Outstanding Professor of the Year

2017: ACS Jack L. Beal Award

Other Experience and Professional Memberships:

2006-present: Member, American Chemical Society

2009-present: Faculty of 1000 Biology Contributor

2011-present: Member, American Association for the Advancement of Science

2014-2015: Local Organizing Committee, American Society of Pharmacognosy National Conference

2015-present: Member, American Society of Pharmacognosy

2015-present: MEDI Symposium Co-Chair, 2016 American Chemical Scoiety National Conference

2015-present: GRFP Review Panelist, National Science Foundation

2017-present: Skype a Scientist Participant

2019-present: Member, American Society of Microbiology

Research Support:

Current:

- 09/01/2018-08/31/2023: NIAID, NIH, R01AI136795, Title: "Predictive Models for Small-Molecule Accumulation in Gram-Negative Bacteria", Role: Co-I.
- 09/01/2017-08/31/2019: NEI, NIH, R21EY028279, Title: "Hit to Lead Optimization of a Systemically Available Treatment for Diabetic Retinopathy", Role: PI
- 09/06/2017-05/31/2022: NIGMS, NIH, P20GM103640, Title: "Structure, Function, and Therapeutic Potential of Clostridium difficile Caseinolytic Protease P", Role PL

Past:

- 08/01/2015-07/31/2018: OCAST, HR12-161, Title: "Exploration of Bacterial ClpP as a Treatment Strategy for Hospital-Acquired Infections", Role: PI
- 12/12/2016-06/30/2017: NIH, CoBRE Mentoring Diabetes Research in Oklahoma- Pilot Project, P20GM104934, Title: "Hit to Lead Optimization of a Novel PPARa Agonist towards a Systemically Available Treatment for Diabetic Retinopathy."
- 08/01/2015-07/31/2016: NIH, CoBRE, OCRID, P20GM103648, Title: "Exploration of ClpP Activation to Treat Respiratory Infections in Cystic Fibrosis."

Selected Publications:

1. Di, X.J; Wang, Y.J.; Han, D.Y.; Duerfeldt, A.S.; Blagg, B.S.J.; Mu, T.W. Grp94 Delivers γ-aminobutyric Acid Type A (GABAA) Receptors to Hrd1-Mediated Endoplasmic Reticulum-Associated Degradation. J. Biol. Chem. 2016, 291, 9526–9539.
2. Crowley, V.M.; Khandelwal, A.; Mishra, S.; Stothert, A.R.; Huard, D.J.E.; Zhao, J., Muth, A.; Duerfeldt, A.S.; Kizziah, J.L.; Lieberman, R.L.; Dickey, C.A.; Blagg, B.S.J. Development of Glucose Regulated Protein 94-Selective Inhibitors Based on the BnIm and Radamide Scaffold. J. Med. Chem. 2016, 59, 3471–3488.
3. Lavey, N.P.; Coker, J.A.; Ruben, E.A.; Duerfeldt, A.S. Sclerotiamide: The First Non-Peptide Based Natural Product Activator of Bacterial Caseinolytic Protease P. J. Nat. Prod., 2016, 79, 1193–1197.
4. Anderson, E.A.; Duerfeldt, A.S.; Zhu, K.; Glinkerman, C.M.; Boger, D.L. Cycloadditions of Noncomplementary Substituted 1,2,3-Triazines. Org. Lett. 2014, 16, 5084–5087.
5. Duerfeldt, A.S.; Boger, D.L. Stereoselective Syntheses of (–)-Pyrimidoblamic Acid and P-3A. J. Am. Chem. Soc. 2014, 136, 2119−2125.
6. Wolfe, A.L., Duncan, K.K., Lajiness, J.P., Zhu, K., Duerfeldt, A.S., Boger, D.L. A Fundamental Relationship Between Hydrophobic Properties and Biological Activity for the Duocarmycin Class of DNA Alkylating Antitumor Drugs: Hydrophobic Binding-Driven-Bonding. J. Med. Chem. 2013, 56, 6845–6857.
7. Suntharalingam, A.; Abisambra, J.F.; O'Leary, J.C.; Koren III, J.; Zhang. B.; Kuk Joe, M.; Blair, L.J.; Hill, S.E.; Jinwal, U.K.; Cockman, M.; Duerfeldt, A.S.; Tomarev, S.; Blagg, B.S.J.; Lieberman, R.L.; Dickey, C.A. Glucose-regulated Protein 94 Triage of Mutant Myocilin through Endoplasmic Reticulum-associated Degradation Subverts a More Efficient Autophagic Clearance Mechanism. J. Biol. Chem. 2012, 287, 40661–40669.
8. Duerfeldt, A.S.; Peterson, L.B.; Maynard, J.C.; Ng, C.L.; Eletto, D.; Ostrovsky, O.; Shinogle, H.E.; Moore, D.S.; Argon, Y.; Nicchitta, C.V.; Blagg, B.S.J. Development of a Grp94 Inhibitor. J. Am. Chem. Soc. 2012, 134, 9796–9804.

9. Kusuma, B.R.; Duerfeldt, A.S.; Blagg, B.S.J. Synthesis and Biological Evaluation of Arylated Novobiocin Analogs as Hsp90 Inhibitors. Bioorg. & Med. Chem. Lett. 2011, 21, 7170–7174.
10. Duerfeldt, A.S.; Blagg, B.S.J. Hsp90 Inhibition: Elimination of Shock and Stress. Bioorg. & Med. Chem. Lett. 2010, 20, 4983–4987.
11. Jadhav, V.; Duerfeldt, A.S. Blagg, B.S.J.; Design, Synthesis and Biological Activity of Bicyclic Radester Analogues as Hsp90 Inhibitors. Bioorg. & Med. Chem. Lett. 2009, 19, 6845–6850.
12. Duerfeldt, A.S.; Brandt, G.E.L. Blagg, B.S.J.; Design, Synthesis and Biological Evaluation of Conformationally Constrained cis-Amide Inhibitors. Org. Lett. 2009, 11, 2353–2356.
13. Duerfeldt, A.S.; Blagg, B.S.J. Hydrating for Resistance. ACS Chem. Biol. 2009, 4, 245–247.
14. Li, Y.; Gardner, J.J.; Fortney, K.R.; Leus, I.V.; Bonifay, V.; Zgurskaya, H.I.; Pletnev, A.A.; Zhang, S.; Zhang, Z.Y.; Gribble, G.W.; Spinola, S.M.; Duerfeldt, A.S. First-Generation Structure-Activity Relationship Studies of 2,3,4,9-tetrahydro-1*H*-carbazol-1-amines as CPXA Phosphatase Inhibitors. *Bioorg. Med. Chem. Lett.*, 2019, *29*, 1836.
15. Lavey, N.P.; Duerfeldt, A.S., *Clostridium difficile* ClpP Homologs are Capable of Uncoupled Activity and Exhibit Different Levels of Susceptibility to Acyldepsipeptide Modulation, *ACS Infect. Dis.*, 2019, *5*, 79.
16. Dou, X.; Nath, D.; Shin, Y.; Ma, J.; Duerfeldt, A.S. Structure-Guided Evolution of a 2-Phenyl-4-carboxyquinoline Chemotype into PPARα Selective Agonists: New Leads for Oculovascular Conditions. *Bioorg. Med. Chem. Lett.*, 2018, *28*, 2717.
17. Li, Y.; Lavey, N.P.; Coker, J.A.; Knobbe, J.E.; Truong, D.C.; Yu, H.; Lin, Y.S.; Nimmo, S.L.; Duerfeldt, A.S. Consequences of Depsipeptide Substitution on the ClpP Activation Activity of Antibacterial Acyldepsipeptides. *ACS Med. Chem. Lett.*, 2017, *8*, 1171.
18. Avila, Q.P.; Zgurskaya, H.I.; Duerfeldt, A.S. Recent Advances towards Rational Antibacterial Discovery: Addressing Permeation and Efflux. *ACS Med. Chem. Rev. 2017*, *52*, 319.
19. Lavey, N.P.; Coker, J.A.; Ruben, E.A.; Duerfeldt, A.S. Sclerotiamide: The First Non-Peptide Based Natural Product Activator of Bacterial Caseinolytic Protease P. *J. Nat. Prod.*, 2016, *79*, 1193.