Exponent®
Engineering & Scientific Consulting

Jennifer Mazzone, Ph.D.

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Professional Profile

Dr. Mazzone is an organic chemist with a diverse technical background ranging from natural product synthesis for medicinal applications to formulation development for consumer and industrial products. She routinely advises clients on how molecular structures and interactions within complex formulations drive performance outcomes. She applies her expertise across a range of industries, such as paints and coatings, personal care and cosmetics, pharmaceuticals, and building and construction. As a formulator, she is skilled in assessing the interplay between chemical functionality, material compatibility, and end-use requirements to achieve an optimized produced tailored to the specific application needs.

At Exponent, Dr. Mazzone specializes in formulation problem-solving, product development strategy, and materials performance evaluation with an emphasis on aligning chemical design with regulatory, commercial, or operational goals to meet certain requirements, such as compliance, performance optimization, or other quality controls . She provides technical consulting to manufacturers, legal teams, and other stakeholders across a range of industries. Her work includes support for trade secret disputes, product liability claims, and other litigation matters, where she evaluates formulation history, ingredient function, and product equivalency. She also advises on raw material selection and other aspects of supply chain management to support regulatory compliance and product stewardship programs.

Prior to joining Exponent, Dr. Mazzone held technical roles in both industry and academia. At GCP Applied Technologies, she led the development of a moisture-curing elastomeric coating for use in air and vapor barrier systems for building and construction applications and at Rust-Oleum Corporation she contributed to a range of aerosolized and other decorative coatings for consumer applications. During her time in academia, Dr. Mazzone completed a postdoctoral fellowship at Johns Hopkins University focused on the design, synthesis, and evaluation of novel artemisinin derivatives for antimalarial therapy with enhanced efficacy and oral bioavailability in malaria-infected mice. Her academic experience more broadly has centered on the target-driven synthesis of small molecules and natural products for a range of medicinal applications.

Academic Credentials & Professional Honors

Ph.D., Chemistry, University of New Hampshire, 2011

B.A., Chemistry, Assumption College, 2006

LaMattina Family Graduate Fellowship in Chemical Synthesis 2011, 2010, & 2009

Licenses and Certifications

NACE - Certified Coating Inspector Level 1 Certification

Academic Appointments

Post-Doctoral Fellowship, Chemistry, Johns Hopkins University, 2011-2015

Prior Experience

Lead Scientist, GCP Applied Technologies, 2020-2021

R&D Chemist, GCP Applied Technologies, 2018-2020

R&D Chemist, Rust-Oleum, 2015-2018

Intern, Cell Signaling Technology, 2005-2006

Patents

U.S. Patent Application US20150031677 A1: Trioxane Thioacetal Monomers and Dimers and Methods of Use Thereof, January 2015 (Poser, G.H., Jacobine, A.M., Slack, R.D., Mazzone, J.R.)

Publications

Henderson CS, Mazzone JR, Moore AM, Zercher CK. Tandem homologation-acylation chemistry: single and double homologation. Tetrahedron 2021; 91:132223.

Roy S, Kapoor A, Zhu F, Mukhopadhyay R, Ghosh AK, Lee H, Mazzone J, Posner GH, Arav-Boger R. Artemisinins target the intermediate filament protein vimentin for human cytomegalovirus inhibition. Journal of Biological Chemistry 2020; 295(44):15013-28.

Conyers RC, Mazzone JR, Siegler MA, Posner GH. Highly regiocontrolled and stereocontrolled syntheses of polysubstitued aminocyclohexanes: mild inverse-electron-demand Diels-Alder cycloadditions of electrophilic 2-pyridones. Tet. Lett. 2016; 57:3344-3348.

Fox JM, Moynihan JR, Mott BT, Mazzone JR, Anders NM, Brown PA, Rudek MA, Liu JO, Arav-Boger R, Posner GH, Civin CI, Chen X. Artemisinin-derived dimer ART-838 potently inhibited human acute leukemias, persisted in vivo, and synergized with antileukemic drugs. Oncotarget 2016; 7(6):7268.

Roy S, He R, Kapoor A, Forman M, Mazzone JR, Posner GH, Arav-Boger R. Inhibition of human cytomegalovirus replication by artemisinins: effects mediated through cell cycle modulation. Antimicrobial agents and chemotherapy 2015; 59(7):3870-3879.

Conyers RC, Mazzone JR, Tripathi AK, Sullivan DJ, Posner GH. Antimalarial chemotherapy: orally curative artemisinin-derived trioxane dimer esters. Bioorg. Med. Chem. Lett. 2015; 25:245-248.

Mazzone JR, Conyers RC, Tripathi AK, Sullivan DJ, Posner GH. Antimalarial chemotherapy: artemisinin-derived carbonates and thiocarbonates. Bioorg. Med. Chem. Lett. 2014; 24:2440-2443.

Conyers RC, Mazzone JR, Siegler MA, Tripathi AK, Sullivan DJ, Mott BT, Posner GH. The survival times of malaria-infected mice are prolonged more by several new two-carbon-linked artemisinin-derived dimmer carbamates than by the trioxane drug artemether. Bioorg. Med. Chem. Lett. 2014; 24:1285-1289.

Mazzone JR, Zercher CK. Syntheses of papyracillic acids: application of the tandem chain extension-acylation reaction. J. Org. Chem. 2012; 77:9171-9178.

Jacobine AM, Mazzone JR, Slack RD, Tripathi AK, Sullivan DJ, Posner GH. Malaria-infected mice live until at least day 30 after a new artemisinin-derived thioacetal thiocarbonate combined with mefloquine are administered together in a single, low, oral dose. J. Med. Chem. 2012; 55:7892-7899.

Presentations

Mazzone J, Parker S. The evolving landscape of PFAS in consumer products. AIChE Boston Meeting, Natick, MA, October 2024.

Mazzone J, Bjornlund K. Navigating the shifting tides: exploring per- and polyfluorinated substances (PFAS) in litigation. MassDLA Meeting, Boston, MA, March 2024.

Mazzone JR, Zercher CK. Synthesis of spirofused cyclic ketals. Poster presentation, 244th ACS National Meeting & Exposition, Philadelphia, PA, August 2012.

Mazzone JR, Zercher CK. Zinc-mediated chain extension reaction as an approach for the synthesis of papyracillic acid C. Oral Presentation, 240th ACS National Meeting & Exposition, Boston, MA, August 2010.

Mazzone JR, Zercher CK. Zinc-mediated chain extension reaction as an approach for the synthesis of papyracillic acid C. Oral Presentation, 240th ACS National Meeting & Exposition, Boston, MA, August 2010.

Additional Education & Training

Polymer Chemistry: Principles and Practice, ACS Short Course, Virginia Tech, 2019