Jennifer M. Hinerman, Ph.D.

SENIOR SCIENTIST I

CONTACT INFORMATION

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PROFESSIONAL PROFILE

Dr. Jennifer Hinerman is a biochemist and product safety scientist in ToxStrategies' Food and Consumer Products practice. She has a combined 20 years of experience in industry and academic research, focusing most recently on preparing safety and exposure assessments for over-the-counter products and dietary supplements. In the industrial sector, she has worked as a safety scientist at the senior management level for a product testing laboratory, conducting ingredient exposure and safety assessments and performing product clearances. She routinely conducts literature searches for nonclinical and clinical toxicology safety studies, frequently including Klimisch and Jadad scoring. Her expertise includes identifying safety gaps and devising strategies to address them, as well as preparing Board of Health responses and developing/updating product dossiers. She has managed a team of 40 members, serving as the point of contact for various divisions (safety, regulatory, artwork editing, and data governance) and helping to set priorities and timelines based on workloads and corporate goals.

Dr. Hinerman has generated standard operating procedures and guidance documents, created databases to collect supporting data for ingredients in dietary supplements, and developed essential label statements for such supplements. She is also experienced in training junior staff in basic human safety toxicology—specifically, in the assessment of personal health care products.

Dr. Hinerman conducted her doctoral research in DNA replication and repair at the University of Toledo (Ohio) and her post-doctoral work on multichain immune recognition receptors at the University of Cincinnati (Ohio). She has multiple publications in the scientific literature and regularly presents at scientific conferences and symposia.

EDUCATION

2008 Ph.D. in Chemistry, with a concentration in Biological Chemistry
Department of Chemistry, University of Toledo, Toledo, Ohio

2003 B.A. in Biochemistry
Department of Chemistry, The College of Wooster, Wooster, Ohio

PROFESSIONAL ASSOCIATIONS

National Postdoctoral Association (NPA)

Organizational Member via University of Cincinnati

Member (2010–2012)

HONORS AND AWARDS

American Society for Biochemistry and Molecular Biology (ASBMB) Career Symposium grant for Science Career Symposium in March 2013; sponsored by ASBMB, the University of Cincinnati's Postdoctoral Fellow Association, and Cincinnati's Children's Hospital Postdoctoral Office of Affairs

Ruth L. Kirschstein National Research Service Award, Institutional Research Training Grants (T32) in Cardiovascular Sciences program (3-yr position); awarded an additional year of funding in 2011 (2008–2012)

Research Assistance stipend (The University of Toledo), 2006–2008

Teaching Assistance stipend (The University of Toledo), 2003–2008

SELECTED PROFESSIONAL EXPERIENCE

Safety Scientist

Assesses raw materials for potential toxicological concerns. Work includes literature searching for nonclinical and clinical toxicology safety studies and scoring using Klimisch and Jadad schemes.

Assessed over-the-counter drugs, vitamins, minerals, and botanicals for consumer safety.

Investigated the chemical interactions and metabolism of ingredients (including botanicals and active pharmaceutical ingredients).

Assisted in preparing responses to Board of Health inquiries and helped prepare papers for publication.

Created and/or updated existing product nonclinical dossiers.

Conducted rapid investigations on request, developing and proposing potential strategies and timelines to completion.

Research

Solved the structure of the extracellular domain of OSCAR (osteoclast associated receptor) using macromolecular x-ray crystallography.

Characterized the interaction of multichain immune recognition receptors (MIRRs) with collagen peptides and RNA aptamers, using biophysical, molecular biology, and protein chemistry techniques.

Developed and improved protein refolding/extraction procedures and optimized purification protocols.

Successfully crystallized and determined structure of a MIRR. Characterized a MIRR binding to an RNA aptamer and collagen-related peptides via analytical ultracentrifugation experiments.

Investigated MIRR binding to collagen-related peptides and RNA aptamer with potential therapeutic applications.

Characterized proteins using analytical ultracentrifugation and developed purification protocols for collaborators, resulting in publications and presentations.

Supervised and trained graduate and undergraduate students in molecular cloning, protein expression, protein purification, and protein characterization techniques.

Characterized DNA replication and repair proteins-protein interactions using biophysical molecular biology and protein chemistry techniques.

Successfully characterized the gp59 helicase loading protein-gp32 single-stranded DNA binding protein complex and elucidated the 3D molecular envelope of the complex using small-angle x-ray scattering (SAXS) technique.

Performed fluorescence anisotropy experiments for colleagues.

Advised colleagues in effectively analyzing and interpreting SAXS data.

Supervised and trained graduate, undergraduate, and high school students in molecular cloning, protein expression, protein purification, and protein characterization techniques.

PROFESSIONAL DEVELOPMENT

University of Cincinnati's Postdoctoral Fellow Association: Professional Career Development Seminar Series. Topics ranged from grant/scientific writing, generating CVs, cover letters, introduction to instrumentation/lab techniques, and alternative careers (2010–2012)

Association of Women in Science (Cincinnati chapter): volunteered at National Lab Day events, attended networking seminars (2010–2011)

Annual Southwest Ohio District Science & Engineering Expo: evaluated and critiqued science fair projects (2011)

National Postdoctoral Association: National conference, Philadelphia, PA (2010)

NIH Analytical Ultracentrifugation Workshop, NIH campus, Bethesda, MD (2010)

Reviewer for beamline proposals for Oak Ridge National Laboratories (2009–2010)

American Crystallographic Association: Small Angle Scattering Workshop, Knoxville, TN (2008)

MANUSCRIPTS

Liu S, Refaei M, Liu S, Decker A, **Hinerman JM**, Herr AB, Howell M, Musier-Forsyth K, Tsang P. 2020. Hairpin RNA-induced conformational change of a eukaryotic-specific lysyl-tRNA synthetase extension and role of adjacent anticodon-binding domain. J Biol Chem 295(34):12071–12085.

Zhou L, **Hinerman JM** (co-first authors), Blaszczyk M, Miller JLC, Conrady D, Barrow A, Chirgadze D, Bihan D, Farndale RW, Herr AB. 2016. Structural basis for collagen recognition by the immune receptor OSCAR. Blood 127:529–537.

Karchapati L, Bednar KJ, Adams DE, Wu Y, Mitter RS, Jordan MB, **Hinerman JM**, Herr AB, Ridgway WM. 2013. Recombinant soluble CD137 prevents type one diabetes in nonobese diabetic mice. J Autoimmun 47:94–103.

Hinerman JM, Dignam JD, Mueser T. 2012. A model of the bacteriophage T4 59 helicase assembly protein:32 single stranded DNA binding protein binary complex and analysis of interaction with Pseudo-Y junction DNA. J Biol Chem 287(22):8608–8617.

Hart BR, Mishra PK, Lintner RE, **Hinerman JM**, Herr AB, Blumenthal RM. 2011. Recognition of DNA by the helix-turn-helix global regulatory protein Lrp is modulated by the amino terminus. J Bacteriol 193(15):3794–3803.

Mueser TC, **Hinerman JM**, Devos JM, Boyer RA, Williams KJ. 2010. Structural analysis of bacteriophage T4 DNA replication: Review in the Virology Journal series on bacteriophage T4 and its relatives. Virol J 7:359.

PRESENTATIONS

Hinerman J, Herr A. Determining the mechanism of activation of glycoprotein VI. Poster presented to the Ohio Valley Crystallographic Symposium Meeting, Cleveland, OH, November 2011.

Hinerman J. Crystallographic and small angle scattering studies of the bacteriophage T4 replication complex. Invited presentation to American Crystallographic Association Annual Meeting, Knoxville, TN, June 2008.

Hinerman J, Mueser T. Protein-protein interactions between bacteriophage T4 helicase assembly protein and single-stranded DNA binding protein. Poster presented to Ohio Crystallographic Symposium Meeting, University of Toledo, Toledo, OH, fall 2007.