

LISA KOTERWAS MUTO, M.S.

EDUCATION:

2002. M.S., Chemistry, University of Maryland, College Park, Maryland.

1999. B.S., Biochemistry, University of Maryland, College Park, Maryland.

PROFESSIONAL EXPERIENCE:

2005-Present. Staff Scientist, Cambridge Environmental Inc., Germantown, Maryland.

2003-2005. Staff Scientist, Dynamac Corporation, Germantown, Maryland.

2002-2003. Chemical Safety Officer, Antex Biologics Inc., Gaithersburg, Maryland.

2002-2003. Research Associate, Antex Biologics Inc., Gaithersburg, Maryland. In the role of the Research Associate in the small group of Medicinal Chemists, synthesized, purified, and characterized novel chemical entities, which were then screened for indications of antibiotic activity. Developed a Structure Activity Relationship and determined a pharmacophore. Performed discovery formulation work for multiple chosen lead compounds. Identified suitable excipients for each chosen lead compound. Researched current topical, ophthalmic, and vaginal antibiotic formulations, and applied or adapted current formulations to chosen lead compounds. In the role of the Chemical Safety Officer, organized, negotiated, and supervised chemical hazardous removal from the company research facility. Discussed current safety concerns and compliance of the facility and performed inspections of laboratories with the Chemical Safety Committee.

1999-2001. Graduate Research Assistant, University of Maryland, College Park, Maryland. Synthesized and purified novel organometallic, organic, and radiolabeled organic compounds via multi-step syntheses. Catalyzed polymerizations and attempted several stereospecific organic transformations with the novel organometallic compounds. Conducted air-, light- and water-sensitive reactions. Fully characterized the compounds by performing and interpreting ^1H NMR, ^{13}C NMR, DEPT, variable-temperature ^1H NMR, and GC-MS analyses, and interpreting X-ray crystallography and elemental analyses.

1999. Laboratory Assistant, University of Maryland, College Park, Maryland. Synthesized and purified novel organotitanium and organic compounds via multi-step syntheses. Conducted air-sensitive reactions. Fully characterized the compounds by performing and interpreting ^1H NMR, ^{13}C NMR, DEPT, and variable-temperature ^1H NMR analyses, and interpreting X-ray crystallography and elemental analyses.

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1997. Laboratory Assistant Summer Intern, Hope College, Michigan. Synthesized and purified organic compounds via a multi-step synthesis using light-sensitive reactions. Attempted the synthesis of a novel organozirconium catalyst. Characterized the compounds by performing and interpreting ^1H NMR analyses.

AWARDS:

REU Summer Internship at Hope College in Holland, Michigan (1997).

SUMMARY OF EXPERTISE:

Technical area of expertise is chemistry. More than 4 years experience in synthesizing, purifying and characterizing novel organic and organometallic compounds. More than one year experience in developing a Structure Activity Relationship from MIC data and topical and ophthalmic formulations for lead compounds. More than four years experience supporting USEPA/OPP assessing the environmental behavior, and ecological and human health risks of pesticides and conducting literature searches. More than one year experience supporting USEPA generating chemistry chapters of pesticides to summarize their toxicology, chemistry, environmental behavior, and ecological and human health risks. More than year experience handling all chemical hazardous waste and safety issues in professional chemical and biological laboratories, as well as performing safety inspections of laboratories. More than 5 years experience using computer software for drawing complex chemical structures and using internet and library-based resources to find or verify chemical information.

SELECTED CONSULTING PROJECT EXPERIENCE:

U.S. Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances (OPPTS), Environmental Fate and Effects Division (EFED)

Reviews and summarizes chemical and biological data pertaining to the fate and transport of pesticides in terrestrial and aquatic ecosystems, and on the impact of pesticide use on ground and surface water. Reviewed data include laboratory hydrolysis; laboratory photodegradation in water and soil; laboratory biological degradation under aerobic and anaerobic conditions; laboratory batch equilibrium and column leaching in soil; laboratory volatility; and field dissipation in agricultural ecosystems. Reviews and summarizes chemical and biological data from literature searches for pesticides. Generates chemical structure files which accompany all study reports, risk assessments and data input sheets. Also, conducts database searches and literature analyses on the fate, transport, and ecotoxicity of selected pesticides.

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Technical Support for Toxicology, Chemistry, Human Exposure, Environmental Fate, and Ecological Assessments of Pesticides for Registration and Reregistration Review, Environmental Fate and Effects Division (EFED)

Reviews and summarizes chemical and biological data pertaining to the fate of pesticides, including ready biodegradability, alga growth inhibition, carbon mineralization and nitrification. Generates chemistry chapters of pesticides which summarize their toxicology, chemistry, environmental behavior, and ecological and human health risks. Generates tables of guideline requirement satisfaction, bibliographies and chemical structures for final reports. Provides evidence from guidelines to support the deficiencies which were noted in reviewed data.

U.S. Army Corps of Engineers – Hazardous, Toxic, and Radioactive Waste (HTRW) Center of Expertise (CX), Formerly Utilized Defense Sites (FUDS) Information Improvement Plan (FIIP) Implementation for South Atlantic, North Atlantic and Lakes and Rivers Divisions

Temporary Litigation Support Specialist for the FIIP project reviewing and organizing Administrative and Permanent Records, data-entry and quality assurance/quality control (QA/QC) operations.

ORIGINAL REPORTS:

Keaton, R.J., Koterwas, L.A., Fettinger, J.C., and Sita, L.R. (2002). Regarding the stability of d0 Monocyclopentadienyl Zirconium Acetamidinate complexes bearing alkyl substituents with ?-Hydrogens. *J. Am. Chem. Soc.* 124:5932-5933.

Keaton, R.J., Jayaratne, K.C., Henningsen, D.A., Koterwas, L.A., and Sita, L.R. (2001). Dramatic enhancement of activities for living ziegler-natta polymerizations mediated by 'exposed' zirconium acetamidinate initiators: the isospecific living polymerization of vinylcyclohexane. *J. Am. Chem. Soc.* 123:6197-6198.

Koterwas, L.A., Fettinger, J.C., and Sita, L.R. (1999). Stereospecific syntheses, metal configurational stabilities and conformational analyses of *meso*-(*R,S*)- and (*R,R*)-(?5-C5R5)Ti(CH3)2-*N,N'*-bis(1-phenylethyl)acetamidinates. *Organometallics* 18:4183-4190.

Principal author/reviewer of over 130 reviews of studies on the environmental fate of pesticides that were submitted under Subdivision N Guidelines.

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PRESENTATIONS:

Koterwas, L.A. and Sita, L.R. (2001). Optically active monocyclopentadienyl zirconium acetamidates. Presented at the 221st National American Chemical Society Meeting in San Diego, CA, April.