Shizue Mito, Ph.D.

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Education & Training

B.S. in Pharmaceutical Sciences, Osaka University, Japan
M.S. in Pharmaceutical Sciences, Osaka University, Japan
Ph.D. in Pharmaceutical Sciences, Hokkaido University, Japan
Postdoctoral fellow, Kyoto University, Japan (2004-2005)
Postdoctoral fellow, Harvard University, Cambridge, MA, USA (2005-2008)

Research Focus

Dr. Mito's research is in organic and medicinal chemistry to find better drug candidates and synthesize these compounds more efficiently. Her research has three parts: 1) methodology development to prepare new bioactive compounds. 2) drug modification to find more efficient structures. 3) total synthesis of bioactive natural products and their analogs. Currently, our targets are treatments for various cancers, diabetes, and immune thrombocytopenia. Dr. Mito has established collaborative research with faculty from other colleges/departments to evaluate the bioactivities of her synthesized compounds.
Dr. Mito, with her strong background in organic synthesis, not only pursues her own research but also prepares the requested molecules for other faculty's medical research needs. This collaborative approach has significantly expanded her network and area of study.

Publications

1) Shizue Mito*, Benxu Cheng, Benjamin A. Garcia, Xin Yee Ooi, Daniela Gonzalez, Tess C. Ruiz, Francisco X. Elisarraras, Andrew Tsin. “SAR study of niclosamide derivatives for neuroprotective function in SH-SY5Y neuroblastoma.” *Bioorg. Med. Chem Lett*. **2023**, *96*, 129498. DOI: 10.1016/j.bmcl.2023.129498.

2) Juan Carlos Lopez-Alvarenga, Cordelia Rasa, Jameela Banu, Shizue Mito, Alberto O Chavez, Sara M Reyna. “Commentary on Metabolic Health Disparities Affecting the Rio Grande Valley Mexican American Population: Seeking Answers Using Animal Models” *Ethnicity and Disease*. **2023** January 01; 33(1):55-60. DOI: 10.18865/1669

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4) Sudhakar Kalaraga, Gabriel Orozco, Shizue Mito*; “The efficient synthesis of D-xylulose and formal synthesis of Syringolide 1” *Tetrahedron Lett.* **2020**, *61*, 152321. DOI:10.1016/j.tetlet.2020.152321

5) Cheng, B., Morales, L. D., Zhang, Y., Mito, S., Tsin, A. “Niclosamide induces protein ubiquitination and inhibits multiple pro-survival signaling pathways in the human glioblastoma U-87 MG cell line.” *PLoS ONE,* **2017,** *12*(9), e0184324. http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0184324 10.1371/journal.pone.0184324

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7) Quang H. Luu, Shizue Mito*; “Preparation of indolequinones and their applications in organic synthesis” *Tetrahedron*, **2015**, *71*, 895-916. DOI:10.1016/j.tet.2014.11.008

8) Diego A. Pedroza, Fernando De Leon, Armando Varela-Ramirez, Carolina Lema, Renato J. Aguilera and Shizue Mito*; “The Cytotoxic Effect of 2-Acylated-1,4-Naphthohydroquinones on Leukemia/Lymphoma Cells” *Bioorg. Med. Chem.* **2014***, 22,* 842. DOI:10.1016/j.bmc.2013.12.007

9) Fernando De Leon, Sudhakar Kalagara, Ashley A. Navarro, Shizue Mito*; “Synthesis of 6-Acyl-5,8-quinolinediols by Photo-Friedel-Crafts Acylation Using Sunlight.” *Tetrahedron Lett.* **2013**, *54*, 3147. DOI:10.1016/j.tetlet.2013.04.021

10) “Scope and Mechanism of Enantioselective Michael Additions of 1,3-Dicarbonyl Compounds to Nitroalkenes Catalyzed by Nickel(II) Chiral Diamine Complexes.” David A. Evans, Shizue Mito and Daniel Seidel; *J. Am. Chem. Soc.* **2007**, *129*, 11583.

11) “Reactions of Zirconocene–Alkyne Complexes with $Mo(CO)_6$.” Shizue Mito, Lishan Zhou, Chanjuan Xi and Tamotsu Takahashi; *Chem. Lett*. **2006**, *35,* 122.

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15) "Radical Cycloaddition by Ni(II) Complex-Catalyzed Electroreduction. A Method for Preparation of Pyrrolopyridine and Pyrrolopyrrole Derivatives." Shigeko Ozaki, Shizue Mitoh and Hidenobu Ohmori; *Chem. Pharm. Bull.* **1996**, *44*, 2020.

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17) "Hypervalent Iodine-Introduced Nucleophilic Substitution of *para*-Substituted Phenol Ethers. Generation of Cation Radicals as Reactive Intermediates." Yasuyuki Kita, Hirofumi Tohma, Kenji Hatanaka, Takeshi Takada, Shigekazu Fujita, Shizue Mitoh, Hiromu Sakurai and Shigenori Oka; *J. Am. Chem. Soc.* **1994**, *116*, 3684.

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RELATED ESSAY

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