Xuequan Lu, PhD

Postdoctoral Fellow

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Start Year

2005

End Year

2009

Senior Research Scientist, 2010–present

Organix, Inc

Organix, Inc.
Woburn, MA

Senior Research Scientist, 2009–2010
Anichem, Inc.
North Brunswick, NJ

PhD, CUNY-Queens, 2005

MPhil, CUNY-Queens, 2002

MS, Peking University, 1999

BS, Peking University, 1996

Publications

Postdoctoral

1 Patent Application

Stable analogues of OSB-AMP: Potent inhibitors of MenE, the *o*-succinylbenzoate-CoA synthetase from bacterial menaquninone biosynthesis.
Lu, X.; Zhou, R.; Sharma, I.; Li, X.; Kumar, G.; Swaminathan, S.; Tonge, P. J.*; Tan, D. S.* *ChemBioChem* 2012, *13*, 129–136.
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Olsen, S. K.; Capili. A. D.; Lu, X.; Tan, D. S.*; Lima, C. D.* *Nature* 2010, *463*, 906–912.
[Abstract | PubMed | PMC]
(*Highlighted in Nature, Chem. Eng. News, Nat. Rev. Mol. Cell Biol., Nat. Chem. Biol., Structure, ACS Chem. Biol., and Faculty of 1000 Biology)*

Designed semisynthetic protein inhibitors of Ub/Ubl E1 activating enzymes.
Lu, X.; Olsen, S. K.; Capili, A. D.; Cisar, J. S.; Lima, C. D.*; Tan, D. S.* *J. Am. Chem. Soc.* 2010, *132*, 1748–1749.
[Abstract | PubMed | PMC]
(*Highlighted in Chem. Eng. News, Nat. Rev. Mol. Cell Biol., ACS Chem. Biol., and Faculty of 1000 Biology)*

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[Abstract | PubMed | PMC]

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Ferreras, J. A.; Stirrett, K. L.; Lu, X.; Ryu, J.-S.; Soll, C. E.; Tan, D. S.; Quadri, L. E. N.* *Chem. Biol.* 2008, *15*, 51–61.
[Abstract | PubMed | PMC]
(*Highlighted in Chem. Biol.*)

Graduate

FTY720 analogues as sphingosine kinase 1 inhibitors: enzyme inhibition kinetics, allosterism, proteasomal degradation, and actin rearrangement in MCF-7 breast cancer cells.
Lim, K. G.; Tonelli, F.; Li, Z.; Lu, X.; Bittman, R; Pyne, S.; Pyne, N. J.* *J. Biol. Chem.* 2011, *286*, 18633–18640.
[Abstract | PubMed]

(*S*)-FTY720-vinylphosphonate, an analogue of the immunosuppressive agent FTY720, is a pan-antagonist of sphingosine 1-phosphate GPCR signaling and inhibits autotaxin activity.

Valentine, W. J.; Kiss, G. N.; Liu, J.; E, S.; Gotoh, M.; Murakami-Murofushi, K.; Pham, T. C.; Baker, D. L.; Parrill, A. L.; Lu, X.; Sun, C.; Bittman, R.; Pyne, N. J.; Tigyi, G.* *Cell Signal.* 2010, *22*, 1543–1553.
[Abstract | PubMed]

Ceramide synthesis is modulated by the sphingosine analog FTY720 via a mixture of uncompetitive and noncompetitive inhibition in an Acyl-CoA chain length-dependent manner.
Lahiri, S.; Park, H.; Laviad, E. L.; Lu, X.; Bittman, R.; Futerman, A. H. *J. Biol. Chem.* 2009, *284*, 16090–16098.
[Abstract | PubMed]

Chiral vinylphosphonate and phosphonate analogues of the immunosuppressive agent FTY720.
Lu, X.; Sun, C; Valentine, W. J.; Shuyu, E.; Liu, J.; Tigyi, G.; Bittman, R.* *J. Org. Chem.* 2009, *74*, 3192–3195.
[Abstract | PubMed]

FTY720 inhibits ceramide synthases and up-regulates dihydrosphingosine 1-phosphate formation in human lung endothelial cells.
Berdyshev, E. V.; Gorshkova, I.; Skobeleva, A.; Bittman, R.; Lu, X.; Dudek, S. M.; Mirzapoiazova, T.; Garcia, J. G.; Natarajan, V. *J. Biol. Chem.* 2009, *284*, 5437–5477.
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Lu, X.; Song, L.; Metelitsa, L. S.; Bittman, R.* *ChemBioChem* 2006, *7*, 1750–1756.
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Byun, H.-S.; Lu, X., Bittman, R.* *Synthesis* 2006, 2447–2474.
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Lu, X.; Bittman, R.* *Tetrahedron Lett.* 2006, *47*, 825–827.
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Lu, X.; Bittman, R.* *J. Org. Chem.* 2005, *70*, 4746–4750.
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An efficient synthesis of D-*ribo*- and L-*lyxo*-phytosphingosine from D-tartaric acid.
Lu, X.; Bittman, R.* *Tetrahedron Lett.* 2005, *46*, 3165–3168.
[Abstract]

Synthesis of a novel ceramide analogue via Tebbe methylenation and evaluation of its antiproliferative activity.
Lu, X.; Arthur, G.; Bittman, R.* *Org. Lett.* 2005, *7*, 1645–1648.
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Efficient and versatile synthesis of (2*S*,3*R*)-sphingosine and its 2-azido-3-*O*-benzylsphingosine analogue.
Lu, X.; Bittman, R.* *Tetrahedron Lett.* 2005, *46*, 1873–1875.
[Abstract]

Synthesis of L-*lyxo*-phytosphingosine and its 1-phosphonate analogue using a threitol acetal synthon.
Lu, X.; Byun, H.-S.; Bittman, R.* *J. Org. Chem.* 2004, *69*, 5433–5438.
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Liu, J.; Zeng, G.; Lu, X.* *Fushe Fanghu* 2001, *21*, 34–39.

Radiation preparation and thermo-response swelling of interpenetrating polymer network hydrogel composed of PNIPAAm and PMMA.
Lu, X.; Zhai, M.; Li, J.; Ha, H.* *Radiation Phys. Chem.* 2000, *57*, 477–480.
[Abstract]

News Articles

06/01/2010
Collaborative Team Advances the Understanding of an Important Activity Inside Cells
MSKCC Center News
A collaborative team of researchers from Memorial Sloan Kettering has determined the mechanism for a biological process that plays a key role in regulating cellular behavior. The process — and the enzymes that control it — has been studied for 30 years, but until now it was a mystery to researchers in the field how this complex reaction takes place. [Full text]

02/22/2010
Activation of Protein Tags: Enzymology: To prepare biological labels for attachment, E1 enzymes dramatically remodel themselves
Chemical & Engineering News
In a tour de force chemical, structural, and mechanistic study that took five years, researchers have solved a long-standing mystery in a Nobel Prize-winning field of research-they have shown how E1 enzymes activate ubiquitin and related proteins to tag other proteins. [Full text]

02/18/2010
Structural Biology: Transformative Encounters
Nature
Researchers have met the challenge of capturing transient states of the SUMO E1 activating enzyme. Their pictures show radically different crystal structures for two of the steps in this enzyme's activity. [Full text]

2009

12/27/2007
New Drug Targets May Fight Tuberculosis and Other Bacterial Infections in Novel Way
Weill Cornell News
Research into "virulence factors" expands war against infectious disease beyond antibiotics, Weill Cornell researchers say. [Full text]

Core facilities & resources

Education & Training

Overview

Postdoctoral training

Gerstner Sloan Kettering Graduate School

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Programs for college & high school students

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