Jianglong Zhu, Ph.D.

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CURRENT POSITION

8/2014 – present	Associate Professor, Department of Chemistry & Biochemistry and School of Green Chemistry and Engineering, The University of Toledo
8/2010 – 7/2014	Assistant Professor, Department of Chemistry and School of Green Chemistry and Engineering, The University of Toledo

EDUCATION AND PROFESSIONAL EXPERIENCE

6/2007 – 7/2010	Postdoctoral Scholar, Memorial Sloan-Kettering Cancer Center, New York, NY (with Professor Samuel J. Danishefsky)
9/2001 - 5/2007	Ph.D. in Organic Chemistry, Boston University, Boston, MA (with Professor John A. Porco, Jr.)
9/1998 - 4/2001	M.S., Organic Chemistry, Tianjin University, Tianjin, China
3/1996 - 7/1998	B.E., Engineering Economics, Tianjin University, Tianjin, China
9/1994 - 7/1998	B.S., Chemistry, Tianjin University, Tianjin, China

AWARDS AND HONORS

2015 – *present*	Ad Hoc Reviewer for NSF and NIH
2014	"Young Investigators in Glycoscience" Symposium, ACS meeting at Dallas
2005	Feldman Award, Chemistry Department, Boston University, Boston, MA
1997	Tianjin Wutian Corporation Award, Tianjin University, China
1996	"Wang Kechang" Education Fund Award, Tianjin University, China

PROFESSIONAL MEMBERSHIPS

2005-present	Member of American Chemical Society Divisions: Organic and Carbohydrate Chemistry
2009-2010	Sigma Xi Scientific Research Society
2010-present	Chinese-American Chemistry & Chemical Biology Professors Association (CAPA)

PUBLICATIONS

Publications from University of Toledo

34. Li, X.; **Zhu, J.*** "Glycosylation via Transition-Metal Catalysis: Challenges and Opportunities." *Eur. J. Org. Chem.* **2016**, 4724-4767, DOI: 10.1002/ejoc.201600484.
33. Li, X.;* Woodward, J.; Hourani, A.; Zhu, D.; Ayoub, S.; **Zhu, J.*** "Synthesis of the 2-Deoxy Trisaccharide Glycal of Antitumor Antibiotics Landomycins A and E." *Carbohydr. Res.* **2016**, *430*, 54-58.
32. Nguyen, H.; Zhu, D.; Li, X.;* **Zhu, J.*** "Stereoselective Construction of β-Mannopyranosides via Anomeric O-Alkylation: Synthesis of the Trisaccharide Core of N-linked Glycans." *Angew. Chem., Int. Ed.* **2016**, *55*, 4767-4771.
31. Baryal, K. N.; **Zhu, J.*** "Stereoselective Synthesis of S-linked Hexasaccharide of Landomycin A via Umpolung S-Glycosylation." *Org. Lett.* **2015**, *17*, 4530-4533.
30. Khatri, H. R.; Nguyen, H.; Dunaway, J. K.; **Zhu, J.*** "Fluoroalcohol-mediated reductive iodonio-Claisen rearrangement: Synthesis of complex *ortho*-substituted-allyl iodoarenes" *Front. Chem. Sci. Eng.* **2015**, *9*, 359-368.
29. Khatri, H. R.; Nguyen, H.; Dunaway, J. K.; **Zhu, J.*** "Total Synthesis of Antitumor Antibiotic Derhodinosylurdamycin A." *Chem. Eur. J.* **2015**, *21*, 13553-13557.
28. Li, X.;* Saleh, Z.; Egri, B.; Hourani, A.; Harding, L.; Baryal, K. N.; **Zhu, J.** "Selective deprotection of benzyl (Bn) ethers in the presence of para-methoxybenzyl (PMB) ethers." *Tetrahedron Lett*. **2015**, 56, 1420-1422.
27. Zhu, D.; Adhikari, S.; Baryal, K. N.; Abdullah, B. N.; **Zhu, J.*** "Synthesis of α-Digitoxosides and α-Boivinosides via Chelation-Controlled Anomeric O-Alkylation." *J. Carbohydr. Chem.* **2014**, *33*, 438-451(*special issue, invited submission*).
26. Zhu, D.; Baryal, K. N.; Adhikari, S.; **Zhu, J.*** "Direct Synthesis of 2-Deoxy-β-Glycosides via Anomeric O-Alkylation with Secondary Electrophiles." *J. Am. Chem. Soc.* **2014**, *136*, 3172-3175.
25. Baryal, K. N.; **Zhu, J.*** "Stereoselective Synthesis of *S*-Linked 2-Deoxy Sugars." *Synlett(Synpacts)* **2014**, *25*, 308-312.
24. Baryal, K. N.; Adhikari, S.; **Zhu, J.*** "Catalytic Stereoselective Synthesis of β-Digitoxosides: Direct Synthesis of Digitoxin and C1'-epi-Digitoxin." *J. Org. Chem.* **2013**, *78*, 12469-12476.
23. Adhikari, S.; Li, X.; **Zhu, J.*** "Studies of *S*-But-3-ynyl and *gem*-Dimethyl *S*-But-3-ynyl Thioglycoside Donors in Gold-Catalyzed Glycosylations." *J. Carbohydr. Chem.* **2013**, *32*, 336-359 (*special issue, invited submission*).
22. Nguyen, H.; Khatri, H. R.; **Zhu, J.*** "Reductive Iodonio-Claisen Rearrangement of Iodothiophene Diacetates with Allylsilanes: Formal Synthesis of Plavix®." *Tetrahedron Lett.* **2013**, *54*, 5464-5466. This work was highlighted in *Synfacts*, **2013**, *9*, 1265.
21. Baryal, K. N.; Zhu, D.; Li, X.; **Zhu, J.*** "Umpolung Reactivity in the Stereoselective Synthesis of *S*-Linked 2-Deoxyglycosides." *Angew. Chem., Int. Ed.* **2013**, *52*, 8012 –8016. This work was highlighted in *Synlett (SYNPACTS)* **2014**, *25*, 308-312.
20. Adhikari, S.; Baryal, K. N.; Zhu, D.; Li, X.; **Zhu, J.*** "Gold-Catalyzed Synthesis of 2-Deoxy Glycosides Using *S*-But-3-ynyl Thioglycoside Donors." *ACS Catal.* **2013**, *3*, 57-60.
19. Khatri, H. R.; **Zhu, J.*** "Synthesis of Complex *ortho*-Allyliodoarenes by Employing the Reductive Iodonio-Claisen Rearrangement." *Chem. Eur. J.* **2012**, *18*, 12232-12236.

18. Li, X.; **Zhu, J.*** "Recent Advances in Transition Metal-Catalyzed *O*-Glycosylations." *J. Carbohydr. Chem.* **2012**, *31*, 284-324 (*special issue, invited submission*).

Graduate and Postdoc Publications

17. O'Cearbhaill, R. E.; Ragupathi, G.; **Zhu, J.**; Wan, Q.; Mironov, S.; Yan, G.; Spassova, M. K.; Iasonos, A; Kravetz, S.; Ouerfelli, O.; Spriggs, D. R.; Danishefsky, S. J.; Sabbatini, P. J. "A Phase I Study of Unimolecular Pentavalent (Globo-H-GM2-sTn-TF-Tn) Immunization of Patients with Epithelial Ovarian, Fallopian Tube, or Peritoneal Cancer in First Remission", *Cancers* **2016**, *8*, 46; doi:10.3390/cancers8040046 .
16. Germain, A. R.; Bruggemeyer, D. M.; **Zhu, J.**; Genet, C.; O'Brien, P.; Porco, J. A., Jr.* "Synthesis of the Azaphilones (+)-Sclerotiorin and (+)-8-*O*-Methylsclerotiorinamine Utilizing (+)-Sparteine Surrogates in Copper-Mediated Oxidative Dearomatization." *J. Org. Chem.* **2011**, *76*, 2577-2584.
15. Wang, P.; Li, X.; **Zhu, J.**; Chen, J.; Yuan, Y.; Wu, X.; Danishefsky, S. J.* "Encouraging Progress in the ω-Aspartylation of Complex Oligosaccharides as a General Route to β-N-Linked Glycopolypeptides." *J. Am. Chem. Soc.* **2011**, 133, 1597-1602.
14. Chen, J.; Wang, P.; **Zhu, J.**; Wan, Q.; Danishefsky, S. J.* "A Program for Ligation at Threonine Sites: Application to the Controlled Total Synthesis of Glycopeptides." *Tetrahedron* **2010**, *66*, 2277-2283.
13. **Zhu, J.**; Warren, J. D.; Danishefsky, S. J.* "Synthetic Carbohydrate-Based Anticancer Vaccines: The Memorial Sloan-Kettering Experience." *Expert Rev. Vaccines* **2009**, *8*, 1399-1413.
12. Wang, P.; **Zhu, J.**; Yuan, Y.; Danishefsky, S. J.* "Total Synthesis of the 2,6-Sialylated Immunoglobulin G Glycopeptide Fragment in Homogeneous Form." *J. Am. Chem. Soc.* **2009**, *131*, 16669-16671.
11. **Zhu, J.**; Wan, Q.; Lee, D.; Yang, G.; Spassova, M. K.; Ouerfelli, O; Ragupathi, G.; Damani, P.; Livingston, P. O.; Danishefsky, S. J.* "From Synthesis to Biologics: Preclinical Data on the Chemistry Derived Anticancer Vaccines." *J. Am. Chem. Soc.* **2009**, *131*, 9298-9303. This work was highlighted in advance in *Chinese Science Bulletin "Trend"* **2008**, *53*, 2126.
10. Yuan, Y.; **Zhu, J.**; Li, X.; Wu, X.; Danishefsky, S. J.* "Preparation and Reactions of *N*-Thioformyl Peptides from Amino Thioacids and Isonitriles." *Tetrahedron Lett.* **2009**, *50*, 2329-2333.
9. **Zhu, J.**; Wan, Q.; Yang, G.; Ouerfelli, O; Danishefsky, S. J.* "Synthesis of Human Cancer Associated Globo-H (MBr1 Antigen) Glycosylamino acid: Some Mechanistic and Conformational Reinvestigations." *Heterocycles* **2009**, *79*, 441-449.
8. **Zhu, J.**; Wan, Q.; Ragupathi, G.; George, C. M.; Livingston, P. O.; Danishefsky, S. J.* "Biologics through Chemistry: Total Synthesis of a Proposed Dual Acting Vaccine Targeting Ovarian Cancer by Orchestration of Oligosaccharide and Polypeptide Domains." *J. Am. Chem. Soc.* **2009**, *131*, 4151-4158. This work was highlighted in *ACS Chemical Biology "Spotlight"*, **2009**, *4*, 238.

7. **Zhu, J.**; Wan, Q.; Danishefsky, S. J.* "Synthesis of Biotinylated Tumor Associated Carbohydrate Antigens for Immunological Studies." *Tetrahedron Lett*. **2009**, *50*, 712-714.
6. **Zhu, J.**; Wu, X.; Danishefsky, S. J.* "On the Preparation of Enantiomerically Pure Isonitriles from Amino Acid Esters and Peptides." *Tetrahedron Lett.* **2009**, *50*, 577-579.
5. Chen, J.; Wan, Q.; Yuan, Y.; **Zhu, J.**; Danishefsky, S. J.* "Native Chemical Ligation at Valine: A Contribution to Peptide and Glycopeptide Synthesis." *Angew. Chem., Int. Ed.*, **2008**, *47*, 8521-8524.
4. Dong, S.; **Zhu, J.**; Porco, J. A., Jr.* "Enantioselective Synthesis of Bicyclo[2.2.2]octenones Using a Copper-Mediated Oxidative Dearomatization /[4+2] Dimerization Cascade." *J. Am. Chem. Soc.* **2008**, *130*, 2738-2739.
3. **Zhu, J.**; Porco, J. A., Jr.* "Asymmetric Syntheses of (-)-Mitorubrin and Related Azaphilone Natural Products." *Org. Lett.* **2006**, *8*, 5169-5171.
2. **Zhu, J.**; Grigoriadis, N. P.; Lee, J. P.; Porco, J. A., Jr.* "Synthesis of the Azaphilones Using Copper-Mediated Enantioselective Oxidative Dearomatization." *J. Am. Chem. Soc.* **2005**, *127*, 9342-9343.
1. **Zhu, J.**; Germain, A. R.; Porco, J. A., Jr.* "Synthesis of Azaphilones and Related Molecules by Employing Cycloisomerization of *o*-Alkynylbenzaldehydes." *Angew. Chem., Int. Ed.* **2004**, *43*, 1239-1243.

* denotes the corresponding author.

PATENTS

2. Danishefsky, S. J.; Ragupathi, G.; Livingston, P. O.; **Zhu, J.**; Iyer, K.; Yang, G.; Sabbatini, P. "Multivalent Glycopeptide Constructs and Uses Thereof." **2011**, WO 2011156774.
1. Danishefsky, S.; **Zhu, J.**; Wan, Q.; Jeon, I.; Kim, W.; Nagorny, P.; Lee, D.; Livingston, P.; Ragupathi, G. "Synthesis of Glycopeptide Constructs for Eliciting Antibodies and for Treating Cancer." **2010**, WO 2010006343.

INVITED LECTURES

15. **Zhu, J.** "New Methods for Stereoselective Construction of Challenging Glycosidic Linkages." Presented at University of Alberta, Edmonton, AB, Canada, April 7, **2017**.
14. **Zhu, J.** "New Methods for Stereoselective Construction of Challenging Glycosidic Linkages." Presented at Vanderbilt University, Nashville, TN, United States, October 12, **2015**.
13. **Zhu, J.** "Chemical Synthesis of Bioactive Natural Molecules bearing 2-Deoxy Sugars." Presented in the 250th ACS National Meeting & Exposition, Boston, MA, United States, August 16-20, **2015**.
12. **Zhu, J.** "New Methods for Stereoselective Construction of Challenging Glycosidic Linkages." Presented at Brandeis University, Waltham, MA, United States, May 15, **2015**.
11. **Zhu, J.** "New Methods for Stereoselective Construction of Challenging Glycosidic Linkages." Presented at Northeastern University, Boston, MA, United States, May 14, **2015**.

10. **Zhu, J.** "New Methods for Stereoselective Construction of Challenging Glycosidic Linkages." Presented at University of Wisconsin – Madison, Madison, WI, United States, March 20, **2015**.
9. **Zhu, J.** "Stereoselective Synthesis of Biologically Significant *O*- and *S*-linked 2-Deoxy Sugars." Presented at the 10th Annual Midwest Carbohydrate and Glycobiology Symposium, University of Michigan, Ann Arbor, MI, October 17–18, **2014**.
8. **Zhu, J.** "Stereoselective Synthesis of S-Linked 2-Deoxy Sugars for Biological Studies." Invited to present at Symposium entitled "New Directions in Carbohydrate Synthesis" in the 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, **2014**.
7. **Zhu, J.** "Direct and Stereoselective Synthesis of Biologically Significant 2-Deoxy Sugars." Invited to present at Symposium entitled "Young Investigators in Glycoscience" in the 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, **2014**.
6. **Zhu, J.** "Direct and Stereoselective Synthesis of Biologically Significant *O*- and *S*-linked 2-Deoxy Sugars." Presented at Michigan State University, East Lansing, MI, United States, September 4, **2013**.
5. **Zhu, J.** "New Methods for Stereoselective Synthesis of Biologically Significant *O*- and *S*-linked 2-Deoxy Sugars." Presented at Cleveland State University, Cleveland, OH, United States, March 29, **2013**.
4. **Zhu, J.** "New Methods for Stereoselective Synthesis of Biologically Significant *O*- and *S*-linked 2-Deoxy Sugars." Presented at Oakland University, Rochester, MI, United States, March 6, **2013**.
3. **Zhu, J.** "New Methods for Stereoselective Synthesis of Biologically Significant *O*- and *S*-linked 2-Deoxy Sugars." Presented at Department of Medicinal and Biological Chemistry, College of Pharmacy and Pharmaceutical Sciences, University of Toledo, Toledo, OH, United States, February 28, **2013**.
2. **Zhu, J.**; Danishefsky, S. J. "Recent Advances in Synthetic Carbohydrate-Based Anticancer Vaccines." Presented at the 6th Annual Midwest Carbohydrate and Glycobiology Symposium, University of Toledo, Toledo, OH, United States, September 24–25, **2010**.
1. **Zhu, J.** "Synthesis of Azaphilone Natural Products and Carbohydrate-Based Anticancer Vaccines." Presented at the Department of Chemistry, University of Toledo, Toledo, OH, United States, February 17, **2010**.