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EDUCATION

PhD, Chemistry, Brown University, 2009

BS, Chemistry, University of Science and Technology of China (USTC), 2004

EXPERIENCE

Assistant Professor 08/2013 – present

Drug Discovery Division, School of Pharmacy, University of Wisconsin-Madison, Studying the molecular mechanisms and biological functions of protein post-translational modifications in gene regulation through a multidisciplinary approach of chemical biology, enzymology, mass spectrometry, crystallography, and high-throughput screening.

Postdoctoral Research, Advisor: Dr. Suzanne Walker 11/2008 – 07/2013

Department of Microbiology and Immunobiology, Harvard Medical School, Biochemical characterization of the glycosyltransferase & the unique proteolytic activities of O-GlcNAc transferase (OGT), and discovery of small molecule inhibitors of protein glycosyltransferases.

- Investigated the molecular mechanism of the glycosyltransfer reaction catalyzed by OGT to guide crystallization and inhibitor design.
- Discovered a class of OGT inhibitors with a novel mechanism of inhibition and demonstrated the dicarbamate scaffold functions as a neutral diphosphate mimic.
- Uncovered the mechanism of the unique proteolytic activity of OGT in the maturation process of HCF-1, an important regulator of the cell cycle.
- Identified a new family of small-molecule inhibitors of human polypeptide *N*-acetylgalactosaminyltransferases (ppGalNAcTs) that selectively inhibit O-glycan biosynthesis in cells, and utilized inhibitors to study the biological functions of O-glycans in cell-cell interactions.

Doctoral Research, Advisor: Dr. David E. Cane 01/2005 – 09/2008

Department of Chemistry, Brown University, Geosmin biosynthesis and discovery of the neopentalenolactone biosynthetic pathway.

- Identified and characterized the biosynthetic genes of the earthy odorant geosmin, through reconstitution of geosmin biosynthetic enzymes and new assay development. These studies facilitated early detection of sources of geosmin contamination in water supplies.
- Characterized the properties and functions of a new monooxygenase PtlE in the hypothetical biosynthetic pathway of antibiotic pentalenolactone in *Streptomyces avermitilis*, and discovered a previously unknown metabolite, neopentalenolactone D, a new branch of the pentalenolactone family tree.

Undergraduate Research, Advisor: Dr. Zhiyong Wang 10/2002 – 05/2004

Department of Chemistry, USTC, Theoretical studies on the mechanisms of organic reactions.

HONORS AND AWARDS

- First Prize Poster Award & Travel Award, 244th ACS National Meeting, Philadelphia, PA 2012
- Ash Stevens Outstanding Poster Award, Gordon Research Conference 2011
- Potter Prize for Most Outstanding PhD Thesis, Brown University 2009
- Sigma Xi Award for Excellence in Graduate Research, Brown University 2008
- Best Poster Awards, Brown University 2006, 2007
- Travel Award, 232nd American Chemical Society, San Francisco, CA 2006
- China Goodwill and Peace Development Foundation Scholarship, USTC 2003
- Outstanding Student Scholarship, Anhui Province, China 2003
- Bao Gang Education Scholarship, USTC 2002
- Outstanding Student Leader, USTC 2002
- Outstanding Student Scholarships, USTC 2000, 2001

TEACHING

- Phmsci532: Medicinal Chemistry II Spring 2014
- Phmsci780: Principles of Pharmaceutical Sciences Fall 2013

JOURNAL REVIEWER

Analytical Methods, ASSAY and Drug Development Technologies, Biochemical Journal, Current Drug Targets, Frontiers in Chemical Biology (Editor), Food Chemistry, Food & Function, Journal of the American Chemical Society, Journal of Natural Products, Metabolomics, Molecular BioSystems, Rapid Communications in Mass Spectrometry

INVITED TALKS

- Invited seminar, University of Washington, Seattle, WA 03/2013
- Invited seminar, University of Arizona, Tucson, AZ 02/2013
- Invited seminar, University of Pittsburgh, Pittsburgh, PA 02/2013
- Invited seminar, University of Michigan, Ann Arbor, MI 02/2013
- Invited seminar, Baylor College of Medicine, Houston, TX 01/2013
- Invited seminar, Boston College, Boston, MA 01/2013
- Invited seminar, University of Illinois at Urbana-Champaign, Urbana, IL 01/2013
- Invited seminar, Yale University, New Haven, CT 01/2013
- Invited seminar, University of Wisconsin-Madison, Madison, WI 01/2013
- Invited seminar, Duke University, Durham, NC 12/2012
- Invited seminar, Stony Brook University, Stony Brook, NY 12/2012
- Invited seminar, Central Michigan University, Mount Pleasant, MI 11/2012
- Organic Chemistry Seminar, Brown University, Providence, RI 09/2012
- Monday Talk, Department of Microbiology and Molecular Genetics, Harvard Medical School, Boston, MA 11/2010
- Chemistry and Chemical Biology Seminar Talk, Harvard University, Cambridge, MA 10/2010

PUBLICATIONS

1. Lazarus, MB*; **Jiang, J***; Kapuria V, Bhuiyan T, Janetzko J, Zandberg WF, Vocadlo DJ, Herr W, Walker S. HCF-1 is cleaved in the active site of O-GlcNAc transferase. (*equal contribution) *Science* (2013), 342, 1235-9.
2. Lazarus, MB*; **Jiang, J***; Gloster, TM; Zandberg, WF; Whitworth, GE; Vocadlo, DJ; Walker, S. Structural snapshots of the reaction coordinate for O-GlcNAc transferase. (*equal contribution) *Nature Chemical Biology* (2012), 8, 966-8.
3. **Jiang, J***; Lazarus, MB*; Pasquina, L; Sliz, P; Walker, S. A neutral diphosphate mimic crosslinks the active site of human O-GlcNAc transferase. (*equal contribution) *Nature Chemical Biology* (2012), 8, 72-7.
4. Lazarus, MB; Nam, Y; **Jiang, J**; Sliz, P; Walker, S. Structure of human O-GlcNAc transferase and its complex with a peptide substrate. *Nature* (2011), 469, 564-7. (Highlighted by the News and Views in *Nature Chemical Biology* (2011), 7, 134-5 and this structure was named by the Protein Data Bank as Molecule of the Month.)
5. **Jiang, J**; Tetzlaff, CN; Takamatsu, S; Iwatsuki, M; Komatsu, M; Ikeda, H; Cane, DE. Genome mining in *Streptomyces avermitilis*. A biochemical Baeyer-Villiger reaction and discovery of a new branch of the pentalenolactone family tree. *Biochemistry* (2009), 48, 6431-40.
6. Giglio, S; **Jiang, J**; Saint, CP; Cane, DE; Monis, PT. Isolation and characterization of the gene associated with geosmin production in cyanobacteria. *Environmental Science & Technology* (2008), 42, 8027-32.
7. **Jiang, J**; Cane, DE. Geosmin biosynthesis. Mechanism of the fragmentation-rearrangement in the conversion of germacradienol to geosmin. *Journal of the American Chemical Society* (2008), 130, 428-9.
8. Nawrath, T; Dickschat, JS; Muller, R; **Jiang, J**; Cane, DE; Schulz, S. Identification of (8S,9S,10S)-8,10-dimethyl-1-octalin, a key intermediate in the biosynthesis of geosmin in bacteria. *Journal of the American Chemical Society* (2008), 130, 430-1.
9. Vedula, SL; **Jiang, J**; Zakharian, T; Cane, DE; Christianson, DW. Structural and mechanistic analysis of trichodiene synthase using site-directed mutagenesis: probing the catalytic function of tyrosine-295 and the asparagine-225/serine-229/glutamate-233-Mg^{2+}_{B} motif. *Archives of Biochemistry and Biophysics* (2008), 469, 184-94.
10. **Jiang, J**; He, X; Cane, DE. Biosynthesis of the earthy odorant geosmin by a bifunctional *Streptomyces coelicolor* enzyme. *Nature Chemical Biology* (2007), 3, 711-5. (Highlighted by the News and Views in *Nature Chemical Biology* (2007), 3, 690-1 and featured in *Chemical and Engineering News* (2007), 85, 19.)
11. **Jiang, J**; He, X; Cane, DE. Geosmin biosynthesis. *Streptomyces coelicolor* germacradienol/germacrene D synthase converts farnesyl diphosphate to geosmin. *Journal of the American Chemical Society* (2006), 128, 8128-9.
12. Zhou, C; **Jiang, J**; Zhou, Y; Xie, Z; Miao, Q; Wang, Z. Chemoselective carbonyl benzylation mediated by $Zn/CdCl_2/InCl_3$ in tap water. *Letters in Organic Chemistry* (2005), 2, 61-4.
13. Zha, Z; Qiao, S; **Jiang, J**; Wang, Y; Miao, Q; Wang, Z. Barbier-type reaction mediated with tin nano-particles in water. *Tetrahedron* (2005), 61, 2521-7.
14. Zhou, C; Zhou, Y; **Jiang, J**; Xie, Z; Wang, Z; Zhang, J; Wu, J; Yin, H. Organometallic reactions in aqueous media: the allylations of carbonyl compounds mediated in $Zn/CdSO_4$ and $Zn/SnCl_2$ bimetal systems. *Tetrahedron Letters* (2004), 45, 5537-40.

PATENTS

- Walker, S; **Jiang, J**; Lazarus, MB. Diphosphate mimetics and uses thereof. Pub. No. WO2013006758 A1.
- Cane, DE; Giglio, S; **Jiang, J**; Saint, CP; Monis, PT. Early detection of sources of microbial sesquiterpene contamination in water supplies and aquaculture. Pub. No. WO2010033670 A1.