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Education and Training

1992-1997, Peking University, B.S., Chemistry

1997-1999, New York University, M.S., Chemistry

1999-2005, Stanford University, Ph.D., Organic Chemistry

2005-2007, Harvard University and Broad Institute of Harvard and MIT, Postdoc, Chemical Biology and Medicinal Chemistry

Professional Experience

2007-2013, Assistant Professor, School of Pharmacy, University of Wisconsin-Madison

2013-2017, Associate Professor, School of Pharmacy and Department of Chemistry, University of Wisconsin-Madison

2015-present, Co-Director of Medicinal Chemistry Center, School of Pharmacy, University of Wisconsin-Madison

2017-present, Professor, School of Pharmacy and Department of Chemistry, University of Wisconsin-Madison

Other appointments at the University of Wisconsin-Madison

2007-present Trainer, Chemistry-Biology Interface (CBI) Training Program

2008-present Faculty mentor, Undergraduate Research Scholars Program (URS)

2015-present Trainer, Pharmacology and Drug Discovery Training Program

2015-present Member, UW Carbone Cancer Center

2016-present Faculty leader, UW Carbone Cancer Center Drug Discovery Core

Awards and Honors

Boehringer Ingelheim Pharmaceuticals, Inc. Predoctoral Fellowship (2002)

Amgen Predoctoral Fellowship (2003)

Howard Hughes Medical Institute Postdoctoral Fellowship (2005-2007)

Thieme Synlett/Synthesis Journal Award (2010)

Amgen Young Investigator Award (2011)

Eli Lilly Outstanding Continuous Contribution to Compound Screening Award (2014)

Professional Society Memberships

American Chemical Society, Division of Organic Chemistry, Division of Medicinal Chemistry, and Division of Carbohydrate Chemistry

Publications

Independent work at the University of Wisconsin since 2007 (* Corresponding author):

1. "Base-Catalyzed Intramolecular Hydroamination of Conjugated Enynes."
Zhang, W.; Werness, J. B.; Tang, W.* *Org. Lett.* **2008**, *10*, 2023-2026.
2. "Synthesis of Cyclobutenes by Highly Selective Transition-Metal-Catalyzed Ring Expansion of Cyclopropanes."
Xu, H.-D.; Zhang, W.; Shu, D.; Werness, J. B.; Tang, W.* *Angew. Chem. Int. Ed.* **2008**, *47*, 8933-8936. (**Highlighted in Synfacts**)
3. "N,N'-(11S,12S)-(9,10-dihydro-9,10-ethanoanthracene-11,12-diyl)-bis-[2-(diphenylphosphino)-Benzamide]."
Tang, W.* in *The Encyclopedia of Reagents for Organic Synthesis* [EROS], Fuchs, P. L., Ed. John Wiley and Sons, **2008**.
4. "Intramolecular Hydroamination of Conjugated Enynes."
Zhang, W.; Werness, J. B.; Tang, W.* *Tetrahedron*, **2009**, *65*, 3090-3095. (*Invited contribution for Justin Du Bois's Tetrahedron Young Investigator Award.*)
5. "DABCO-Catalyzed 1,4-Bromolactonization of Conjugated Enynes: Highly Stereoselective Formation of a Stereogenic Center and an Axially Chiral Allene."
Zhang, W.; Xu, H.-D.; Xu, H.; Tang, W.* *J. Am. Chem. Soc.* **2009**, *131*, 3832-3833. (**Highlighted in Synfacts**)
6. "Thermodynamic Control of the Electrocyclic Ring Opening of Cyclobutenes: C=X Substituents at C-3 Mask the Kinetic Torquoselectivity."
Um, J. M.; Xu, H.-D.; Houk, K. N.*; Tang, W.* *J. Am. Chem. Soc.* **2009**, *131*, 6664-6665.
7. "Enantioselective Bromolactonization of Conjugated (Z)-Enynes."
Zhang, W.; Zheng, S.; Liu, N.; Werness, J. B.; Guzei, I. A.; Tang, W.* *J. Am. Chem. Soc.* **2010**, *132*, 3664-3665. (**Highlighted in Angew. Chem. Int. Ed.** **2010**, *49*, 8306-8309.)
8. "Synthesis of Bromoallenyl Pyrrolidines via 1,4-Addition to 1,3-Enynes."
Werness, J. B.; Tang, W.* *Sci. China Chem.* **2011**, *54*, 56-60. (*Invited contribution for the 6th Sino-US Chemistry Professor Conference at Hangzhou, China.*)
9. "Synthesis of Highly Functionalized Cyclohexenone Rings: Rhodium-Catalyzed 1,3-Acyloxy Migration and Subsequent [5+1] Cycloaddition."
Shu, D.; Li, X.; Zhang, M.; Robichaux, P. J.; Tang, W.* *Angew. Chem. Int. Ed.* **2011**, *50*, 1346-1349.
10. "Intramolecular 1,4-Addition of Nitrogen Nucleophiles and Halogen Electrophiles to Conjugated Enynes."
Liu, N.; Werness, J. B.; Guzei, I. A.; Tang, W.* *Tetrahedron* **2011**, *67*, 4385-4390. (*Invited contribution for F. Dean Toste's Tetrahedron Young Investigator Award.*)
11. "Interception of a Rautenstrauch Intermediate by Alkynes for [5+2] Cycloaddition: Rhodium-Catalyzed Cycloisomerization of 3-Acyloxy-4-ene-1,9-diynes to Bicyclo[5.3.0]decaatrienes."
Shu, X.-Z.; Huang, S.; Shu, D.; Guzei, I. A.; Tang, W.* *Angew. Chem. Int. Ed.* **2011**, *50*, 8153-8156. (**Selected as "hot paper" by the Editor**)
12. "Stereoselective Total Synthesis of (-)-Kumausallene."
Werness, J. B.; Tang, W.* *Org. Lett.* **2011**, *13*, 3664-3666. (**Highlighted in Synfacts**)
13. "Rhodium-catalyzed Ring Expansion of Cyclopropanes to Seven-membered Rings by 1,5 C-C Bond Migration."
Li, X.; Zhang, M.; Shu, D.; Robichaux, P. J.; Huang, S.; Tang, W.* *Angew. Chem. Int. Ed.* **2011**, *50*, 10421-10424.

14. "Effect of Halogenation Reagents on Halocyclization and Overman Rearrangement of Allylic Trichloroacetimidates."
Liu, N.; Schienebeck, C. M.; Collier, M. D.; Tang, W.* *Tetrahedron Lett.* **2011**, *52*, 6217-6219.
15. "Rhodium-catalyzed 1,3-Acyloxy Migration and Subsequent Intramolecular [4+2] Cycloaddition of Vinylallene and Unactivated Alkyne."
Huang, S.; Li, X.; Lin, C. L.; Guzei, I. A.; Tang, W.* *Chem. Commun.* **2012**, *48*, 2204-2206.
16. "Rhodium-Catalyzed Carbonylation of 3-Acyloxy-1,4-enynes for the Synthesis of Cyclopentenones."
Li, X.; Huang, S.; Schienebeck, C. M.; Shu, D.; Tang, W.* *Org. Lett.* **2012**, *14*, 1584-1587.
17. "Rhodium-catalyzed Intra- and Intermolecular [5+2] Cycloaddition of 3-Acyloxy-1,4-enyne and Alkyne with Concomitant 1,2-Acyloxy Migration."
Shu, X.-Z.; Li, X.; Shu, D.; Huang, S.; Schienebeck, C. M.; Zhou, X.; Robichaux, P. J.; Tang, W.* *J. Am. Chem. Soc.* **2012**, *134*, 5211-5221.
18. "Catalytic Enantioselective Halolactonization of Enynes and Alkenes."
Zhang, W.; Liu, N.; Schienebeck, C. M.; Decloux, K.; Zheng, S. Werness, J. B.; Tang, W.* *Chem. Eur. J.* **2012**, *18*, 7296-7305. (**Highlighted in Synfacts**)
19. "Stereoselective Preparation of Cyclobutanes with Four Different Substituents: Total Synthesis and Structural Revision of Pipericyclobutanamide A and Piperchabamide G."
Liu, R.; Zhang, M.; Wyche, T. P.; Winston-McPherson, G. N.; Bugni, T. S.; Tang, W.* *Angew. Chem. Ed. Int.* **2012**, *51*, 7503-7506. (**Highlighted in Nat. Chem. Biol.** **2012**, *8*, 678.)
20. "Synthesis of Functionalized Cyclohexenone Core of Welwitindolinones via Rhodium-Catalyzed [5+1] Cycloaddition."
Zhang, M.; Tang, W.* *Org. Lett.* **2012**, *14*, 3756-3759.
21. "Rhodium-Catalyzed Carbonylation of Cyclopropyl Substituted Propargyl Esters: A Tandem 1,3-Acyloxy Migration [5+1] Cycloaddition."
Shu, D.; Li, X.; Zhang, M.; Robichaux, P. J.; Guzei, I. A.; Tang, W.* *J. Org. Chem.* **2012**, *77*, 6463-6472.
22. "Rhodium-Catalyzed Acyloxy Migration of Propargylic Esters in Cycloadditions, Inspiration from Recent "Gold Rush"."
Shu, X.-Z.; Shu, D.; Schienebeck, C. M.; Tang, W.* *Chem. Soc. Rev.* **2012**, *41*, 7698-7711.
23. "Rhodium-Catalyzed Chemo- and Regioselective Cross-Dimerization of Two Terminal Alkynes."
Xu, H.-D.*; Zhang, R.-W.; Li, X., Huang, S., Tang, W.; Hu, W.-H. *Org. Lett.* **2013**, *14*, 840-843.
24. "Rhodium- and Platinum-catalyzed [4+3] Cycloaddition with Concomitant Indole Annulation: Synthesis of Cyclohepta[b]indoles."
Shu, D.; Song, W.; Li, X.; Tang, W.* *Angew. Chem. Int. Ed.* **2013**, *52*, 3237-3240.
25. "Effect of Ester on Rhodium-Catalyzed Intermolecular [5 + 2] Cycloaddition of 3-Acyloxy-1,4-enynes and Alkynes."
Schienebeck, C. M.; Robichaux, P. J.; Li, X.; Chen, L.*; Tang, W.* *Chem. Commun.* **2013**, *49*, 2616-2618.
26. "Ring Expansion of Alkynyl Cyclopropanes to Highly Substituted Cyclobutenes via a *N*-Sulfonyl-1,2,3-Triazole Intermediate."
Liu, R.; Zhang, M.; Winston-McPherson, G. N.; Tang, W.* *Chem. Commun.* **2013**, *49*, 4376-4378. (*Invited contribution for ChemComm "Emerging Investigators 2013" themed issue.*)

27. "Enantioselective Intermolecular Bromoesterification of Allylic Sulfonamides."
Zhang, W.; Liu, N.; Schienebeck, C. M.; Zhou, X.; Izhar, I. I.; Guzei, I. A.; Tang, W.* *Chem. Sci.* **2013**, *4*, 2652-2656.
28. "Stereoselective Addition of Halogen to Conjugated Enynes and Its Application in the Total Synthesis of (-)-Kumausallene."
Werness, J. B.; Zhang, W.; Tang, W.* In *Strategies and Tactics in Organic Synthesis*, Harmata, M., Ed. Elsevier Science, Pergamon Press: Oxford, UK, **2013**, Vol. 9. Chapter 10, 275-291.
29. "Generation of Rhodium(I) Carbenes from Ynamides and Their Reactions with Alkynes and Alkenes."
Liu, R.; Winston-McPherson, G. N.; Yang, Z.-Y.; Zhou, X.; Song, W.; Guzei, I. A.; Xu, X.*; Tang, W.* *J. Am. Chem. Soc.* **2013**, *135*, 8201-8204.
30. "Rh-Catalyzed (5+2) Cycloadditions of 3-Acyloxy-1,4-enynes and Alkynes: Computational Study of Mechanism, Reactivity, and Regioselectivity."
Xu, X.*; Liu, P.; Shu, X.-Z.; Tang, W.*; Houk, K. N.* *J. Am. Chem. Soc.* **2013**, *135*, 9271-9274.
31. "Platinum-Catalyzed Tandem Indole Annulation/Arylation for the Synthesis of Diindolylmethanes and Indolo[3,2-*b*]carbazoles"
Shu, D.; Winston-McPherson, G. N.; Song, W.; Tang, W.* *Org. Lett.* **2013**, *15*, 4162-4165.
32. "Stereoselective Total Synthesis of Hainanolidol and Harringtonolide via Oxidopyrylium-Based [5+2] Cycloaddition."
Zhang, M.; Liu, N.; Tang, W.* *J. Am. Chem. Soc.*, **2013**, *135*, 12434-12438. (**Highlighted in Synfacts**)
33. "Stereoselective Halocyclization of Alkenes with *N*-Acyl Hemiaminal Nucleophiles."
Liu, N.; Wang, H.-Y.; Zhang, W.; Jia, Z.-H.; Guzei, I. A.; Xu, H.-D.*; Tang, W.* *Chirality* **2013**, *25*, 805-809. (*Invited contribution*.)
34. "Transfer of Chirality in the Rhodium-Catalyzed Intramolecular [5+2] Cycloaddition of 3-Acyloxy-1,4-Enynes (ACEs) and Alkynes: Synthesis of Enantioenriched Bicyclo[5.3.0]decaenes"
Shu, X.-Z.; Schienebeck, C. M.; Song, W.; Guzei, I. A.; Tang, W.* *Angew. Chem. Int. Ed.* **2013**, *52*, 13601-13605. (**Highlighted in Synfacts**)
35. "Rhodium-Catalyzed Tandem Annulation and (5+1) Cycloaddition: 3-Hydroxy-1,4-Enyne as the 5-Carbon Component"
Li, X.; Song, W.; Tang, W.* *J. Am. Chem. Soc.* **2013**, *135*, 16797-16800.
36. "Tethered Spectroscopic Probes Estimate Dynamic Distances with Subnanometer Resolution in Voltage-Dependent Potassium Channels"
Jarecki, B. W.; Zheng, S.; Zhang, L.; Li, X.; Zhou, X.; Cui, Q.; Tang, W.; Chanda, B.* *Biophysical J.* **2013**, *105*, 2724-2732. (**Highlighted in Nat. Chem. Biol.** **2014**, *10*, 169.)
37. "Design, Synthesis and Preliminary Bioactivity Studies of 1,2-Dihydrobenzo[*d*]isothiazol-3-one-1,1-dioxide Hydroxamic Acid Derivatives as Novel Histone Deacetylase Inhibitors"
Han, L.; Wang, L.; Hou, X.; Fu, H.; Song, W.; Tang, W.; Fang, H.* *Bioorg. Med. Chem.* **2014**, *22*, 1529-2538.
38. "3-Acyloxy-1,4-enyne: a New Five-Carbon Synthons for Rhodium-Catalyzed [5 + 2] Cycloadditions"
Schienebeck, C. M.; Li, X.; Shu, X.-Z.; Tang, W.* *Pure Appl. Chem.* **2014**, *86*, 409-417. (*Invited review*)
39. "Intermolecular bromoesterification of conjugated enynes: an efficient synthesis of bromoallenes."
Wang, H.-Y.; Zhang, W.; Schienebeck, C. M.; Bennett, S. R.; Tang, W.* *Org. Chem. Front.* **2014**, *1*, 386-390. (*Invited contribution*)
40. "Cinchona Alkaloids as Organocatalysts in Enantioselective Halofunctionalization of Alkenes and Alkynes."
Zheng, S.; Schienebeck, C. M.; Zhang, W.; Wang, H.-Y.; Tang, W.* *Asian J. Org. Chem.* **2014**, *3*, 366-376. (*Invited review*)

41. "Synthesis and Biological Evaluation of 2,3'-Diindolylmethanes as Agonists of Aryl Hydrocarbon Receptor."
Winston-McPherson, G. N.; Shu, D.; Tang, W.* *Bioorg. Med. Chem. Lett.* **2014**, *24*, 4023-4025.
42. "Synthesis of naturally occurring tropones and tropolones."
Liu, N.; Song, W.; Schienebeck, C. M.; Zhang, M.*; Tang, W.* *Tetrahedron*. **2014**, *70*, 9281-9305. (*Invited review*)
43. "Copper-catalyzed tandem annulation/arylation for the synthesis of diindolylmethanes from propargylic alcohols."
Li, H.; Li, X.; Wang, H.-Y.; Winston-McPherson, G. N.; Geng, H.-M. J.; Guzei, I. A.; Tang, W.* *Chem. Commun.* **2014**, *50*, 12293-12296.
44. "Improved antiproliferative activity of 1,3,4-thiadiazole-containing histone deacetylase (HDAC) inhibitors by introduction of the heteroaromatic surface recognition motif."
Guan, P.; Wang, L.; Hou, X.; Wan, Y.; Xu, W.; Tang, W.; Fang, H.* *Bioorg. Med. Chem.* **2014**, *22*, 5766-5775.
45. "Design, synthesis, and preliminary bioactivity studies of substituted purine hydroxamic acid derivatives as novel histone deacetylase (HDAC) inhibitors."
Wang, J.; Sun, F.; Han, L.; Hou, X.; Pan, X.; Liu, R.; Tang, W.; Fang, H.* *MedChemComm.* **2014**, *5*, 1887-1891.
46. "Gold versus Rhodium: Divergent Reactivity Enabled by the Catalyst."
Winston-McPherson, G. N.; Tang, W.* *ChemCatChem* **2015**, *7*, 574-576.
47. "Tumor Suppressor Role of Notch3 in Medullary Thyroid Carcinoma Revealed by Genetic and Pharmacological Induction."
Jaskula-Sztul, R.; Eide, J.; Tesfazghi, S.; Dammalapati, A.; Harrison, A. D.; Yu, X.-M.; Scheinebeck, C.; Winston-McPherson, G.; Kupcho, K. R.; Robers, M. B.; Hundal, A. K.; Tang, W.*; Chen, H.* *Mol. Cancer Therap.* **2015**, *14*, 499-512.
48. "Rhodium-Catalyzed Intermolecular [5+1] and [5+2] Cycloadditions Using 1,4-Enynes with an Electron-Donating Ester on the 3-Position."
Schienebeck, C. M.; Song, W.; Smits, A. M.; Tang, W.* *Synthesis* **2015**, *47*, 1076-1084. (*invited feature article*).
49. "Synthesis of Substituted Tropones by Sequential Rh-Catalyzed [5+2] Cycloaddition and Elimination."
Song, W.; Xi, B.-m.; Yang, K.; Tang, W.* *Tetrahedron* **2015**, *71*, 5979-5984. (*Invited contribution for Prof. Barry Trost's Tetrahedron Award.*)
50. "Novel Analogs Targeting Histone Deacetylase Suppress Aggressive Thyroid Cancer Cell Growth and Induce Re-differentiation."
Jang, S.; Yu, X. M.; Odorico, S.; Clark, M.; Jaskula-Sztul, R.; Schienebeck, C. M.; Kupcho, K. R.; Harrison, A. D.; Winston-McPherson, G. N.; Tang, W.; Chen, H.* *Cancer Gene Therap.* **2015**, *22*, 410-416.
51. "Iridium-Catalysed Dynamic Kinetic Isomerization: Expedient Synthesis of Carbohydrates from Achmatowicz Rearrangement Products."
Wang, H.-y.; Yang, K.; Bennett, S. R.; Guo, S.-r.*; Tang, W.* *Angew. Chem. Int. Ed.* **2015**, *54*, 8756-8759.
52. "Design, synthesis and preliminary bioactivity evaluations of substituted quinoline hydroxamic acid derivatives as novel histone deacetylase (HDAC) inhibitors."
Wang, L.; Hou, X.; Fu, H.; Pan, X.; Xu, W.; Tang, W.; Fang, H.* *Bioorg. Med. Chem.* **2015**, *23*, 4364-4374.
53. "Divergent Reactivity of Rhodium(I) Carbenes Derived from Indole Annulations."
Li, X.; Li, H.; Song, W.; Tseng, P.-S.; Liu, L.-Y.*; Guzei, I. A.; Tang, W.* *Angew. Chem. Int. Ed.* **2015**, *54*, 12905-12908.
54. "Rhodium-Catalyzed Stereoselective Intramolecular [5 + 2] Cycloaddition of 3-Acyloxy 1,4-Enyne and Alkene."
Shu, X.-Z.; Schienebeck, C. M.; Li, X.; Zhou, X.; Song, W.; Chen, L.; Guzei, I. A.; Tang, W.* *Org. Lett.* **2015**, *17*, 5128-5131.

55. "Divergent De Novo Synthesis of All Eight Stereoisomers of 2,3,6-Trideoxyhexopyranosides and Their Oligomers."
Song, W.; Zhao, Y.;* Lynch, J. C.; Kim, H.; Tang, W.* *Chem Commun.* **2015**, 51, 17475-17478.
56. "Chiral Catalyst-Directed Dynamic Kinetic Diastereoselective Acylation of Lactols for De Novo Synthesis of Carbohydrate."
Wang, H.-Y.; Yang, K.; Yin, D.; Liu, C.; Glazier, D. A.; Tang, W.* *Org. Lett.* **2015**, 17, 5272-5275.
57. "Mechanism and reactivity of rhodium-catalyzed intermolecular [5+1] cycloaddition of 3-acyloxy-1,4-enyne (ACE) and CO: A computational study."
Ke, X.-N.; Schienebeck, C. M.; Zhou, C.-C.; Xu, X.-F.;* Tang, W.* *Chin. Chem. Lett.* **2015**, 26, 730-734.
58. "Synthesis of Carbazoles and Carbazole-Containing Heterocycles via Rhodium-Catalyzed Tandem Carbonylative Benzannulations."
Song, W.; Li, X.; Yang, K.; Zhao, X.-l.; Glazier, D. A.; Xi, B.-m.;* Tang, W.* *J. Org. Chem.* **2016**, 81, 2930-2942.
59. "Design and Synthesis of a New Generation of Substituted Purine Hydroxamate Analogs as Histone Deacetylase Inhibitors."
Liu, R.; Wang, J.; Tang, W.; Fang, H.* *Bioorg. Med. Chem.* **2016**, 24, 1446-1454.
60. "Rhodium-Catalyzed [5+2] Cycloaddition of Inverted 3-Acyloxy-1,4-enyne and Alkyne: Experimental and Theoretical Studies."
Li, X.; Song, W.; Zhao, X.-l.; Ke, X.; Xu, X.;* Liu, P.; Houk, K. N.; Tang, W.* *Chem. Eur. J.* **2016**, 22, 7079-7083.
61. "Rhodium-catalyzed [5+2] Cycloaddition of 3-Acyloxy-1,4-enyne and Alkene or Allene."
Song, W.; Lynch, J. C.; Shu, X.-z.; Tang, W.* *Adv. Syn. Catal.* **2016**, 358, 2007-2011.
62. "Rhodium(I)-Catalyzed Benzannulation of Heteroaryl Propargylic Esters: Synthesis of Indoles and Related Heterocycles."
Li, X.; Xie, H.; Fu, X.; Liu, J.-t.; Wang, H.-y.; Bao-Min Xi,* Liu, P.;* Xu, X.;* Tang, W.* *Chem. Eur. J.* **2016**, 22, 10410-10414.
63. "Total Synthesis of Diptoindonesin G and Its Analogues as Selective Modulators of Estrogen Receptors"
Liu, J.-t.; Do, T. J.; Simmons, C. J.; Lynch, J. C.; Gu, W.; Ma, Z.-X.; Xu, W.; and Tang, W.* *Org. Biomol. Chem.* **2016**, 14, 8927-8930.
64. "Author Profile for the publication of the 10th paper in *Angewandte Chemie International Edition* during the last 10 ten years."
Tang, W. *Angew. Chem. Int. Ed.* **2016**, 55, 12412.
65. "Discovery of selective small-molecule HDAC6 inhibitor for overcoming proteasome inhibitor resistance in multiple myeloma."
Hideshima, T.; Qi, J.; Paranal, R. M.; Tang, W.; Greenberg, E.; West, N.; Colling, M. E.; Estiu, G.; Mazitschek, R.; Perry, J. A.; Ohguchi, H.; Cottini, F.; Mimura, N.; Görgün, G.; Tai, Y.-T.; Richardson, P. G.; Carrasco, R. D.; Wiest, O.; Schreiber, S. L.; Anderson, K. C.;* Bradner, J. E.* *Proc. Natl. Acad. Sci. U.S.A.* **2016**, 113, 13162-13167.
66. "Synthesis of Highly Substituted Benzofuran-containing Natural Products via Rh-catalyzed Carbonylative Benzannulation"
Liu, J.-t.; Simmons, C. J.; Xie, H.; Yang, F.; Zhao, X.-l.;* Tang, Y.;* and Tang, W.* *Adv. Syn. Catal.* **2016**, in press, DOI:10.1002/adsc.201600992.