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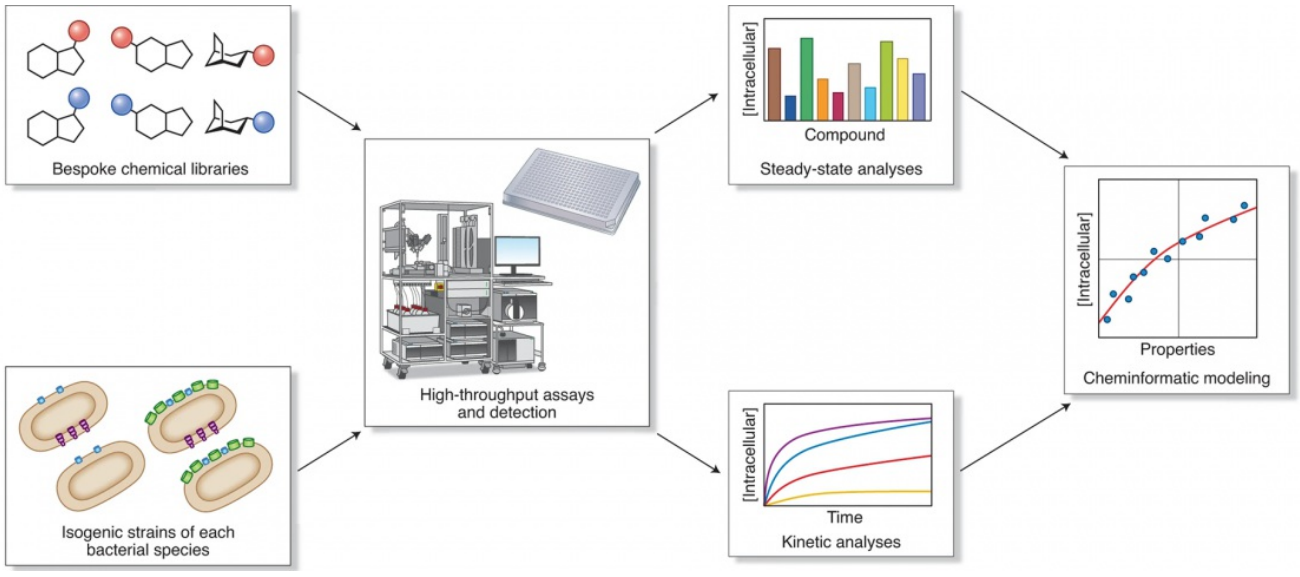
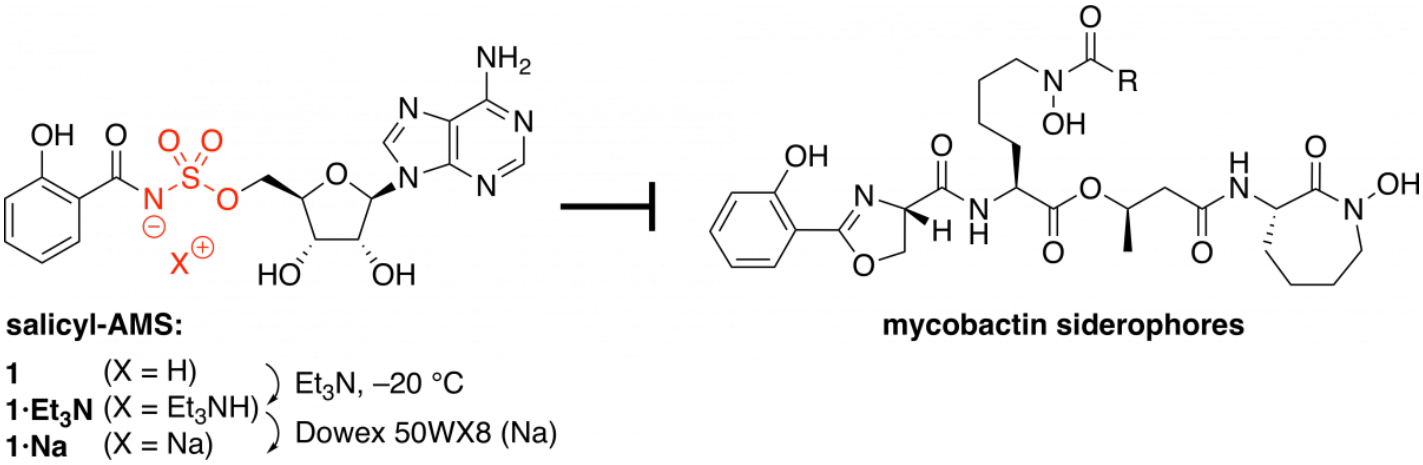
[2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | Postdoctoral | Graduate | Undergraduate]

Tan Lab Publications

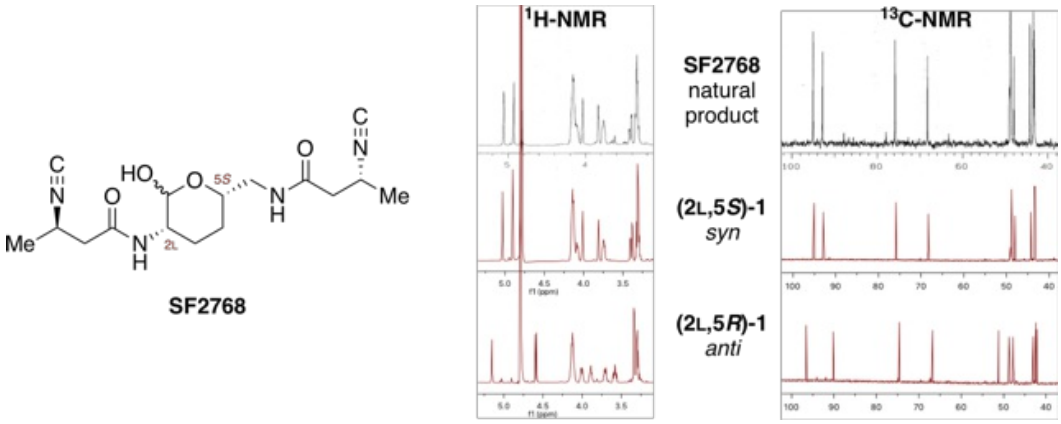
60. Defining new chemical space for drug penetration into Gram-negative bacteria.
Zhao, S.; Adamiak, J. W.; Bonifay, V.; Mehla, J.; Zgurskaya, H. I.; Tan, D. S.* *Nat Chem Biol* 2020, *16*, 1293–1302.
[Abstract | PubMed | PMC]



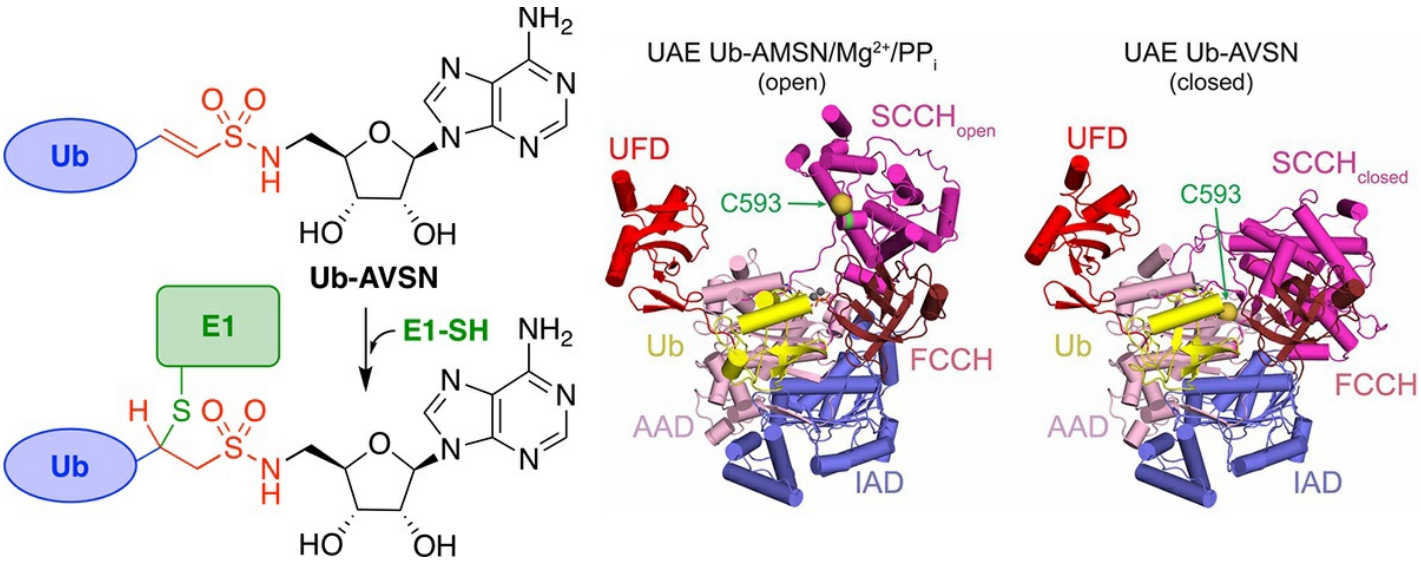
59. Gram-scale preparation of the antibiotic lead compound salicyl-AMS, a potent inhibitor of bacterial salicylate adenylation enzymes.
Kinarivala, N; Standke, L. C; Guney, T.; Cheng, J.; Naoyoshi, N.; Yasutomi, A.; Tan, D. S.* *Method Enzymol.* 2020, *638*, 69–87.
[Abstract | PubMed | PMC]



58. Total synthesis of the bacterial diisonitrile chalkophore SF2768.
Xu, Y.; Tan, D. S.* *Org. Lett.* 2019, *21*, 8731–8735.
[Abstract | PubMed | PMC]

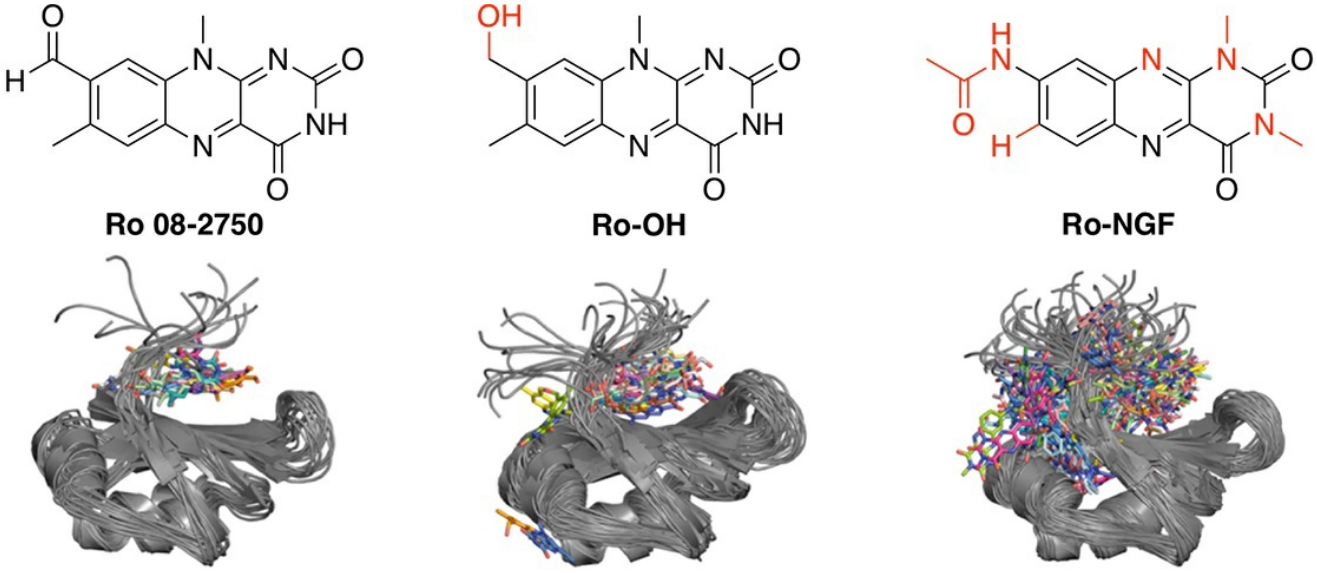


57. Structural basis for adenylation and thioester bond formation in the ubiquitin E1.
Hann, Z. S.; Ji, C.; Olsen, S. K.; Lu, X.; Lux, M. C.; Tan, D. S. *; Lima, C. D.* *Proc. Natl. Acad. Sci. U.S.A.* 2019, 15475–15484.
[Abstract | PubMed | PMC]

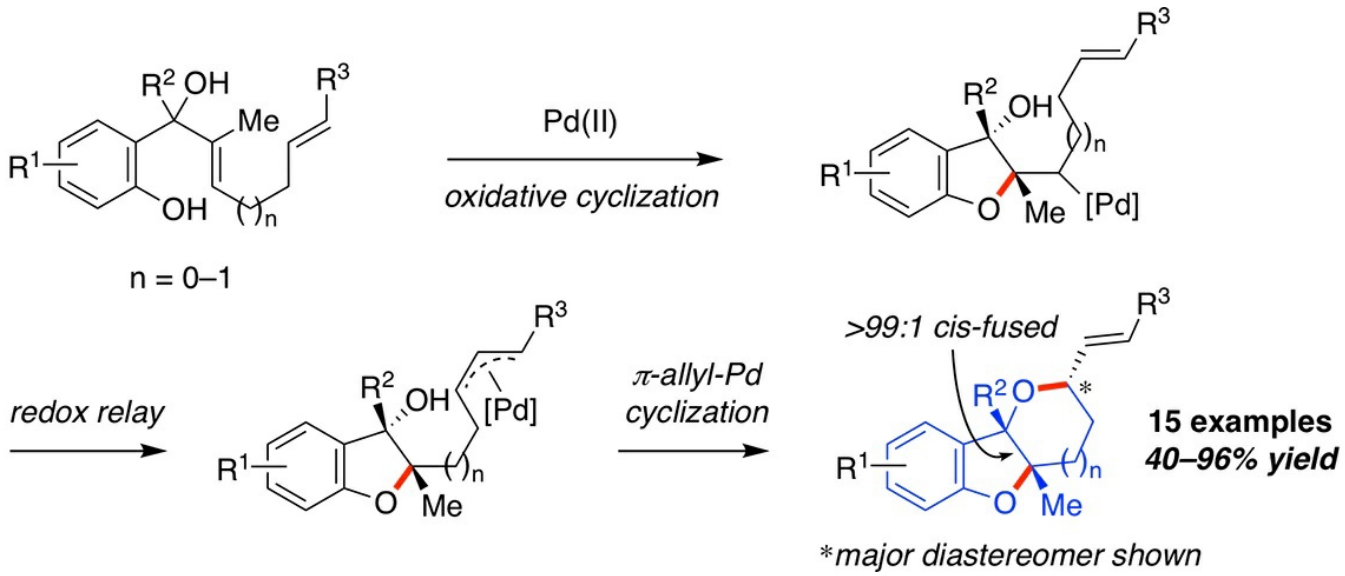


(*Highlighted in [Proc. Natl. Acad. Sci. USA](#)*)

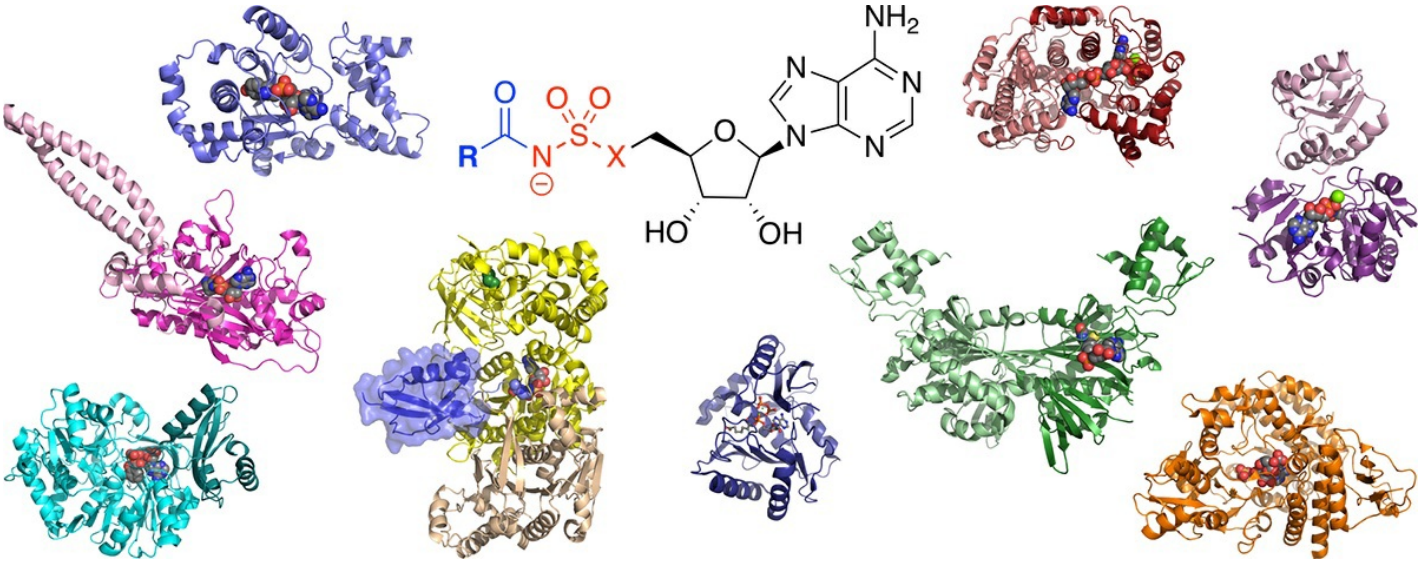
56. Small-molecule targeting of MUSASHI RNA-binding activity in acute myeloid leukemia.
Minuesa, G.; Albanese, S. K.; Xie, W.; Kazansky, Y.; Worroll, D.; Chow, A.; Schurer, A.; Park, S. M.; Rotsides, C. Z.; Taggart, J.; Rizzi, A.; Naden, L. N.; Chou, T.; Gourkanti, S.; Cappel, D.; Passarelli, M. C.; Fairchild, L.; Adura, C.; Glickman, J. F.; Schulman, J.; Famulare, C.; Patel, M.; Eibl, J. K.; Ross, G. M.; Bhattacharya, S.; Tan, D. S.; Leslie, C. S.; Beuming, T.; Patel, D. J.; Goldgur, Y.; Chodera, J. D.; Kharas, M. G.* *Nat Commun* 2019, *10*, 2691.
[Abstract | PubMed | PMC]



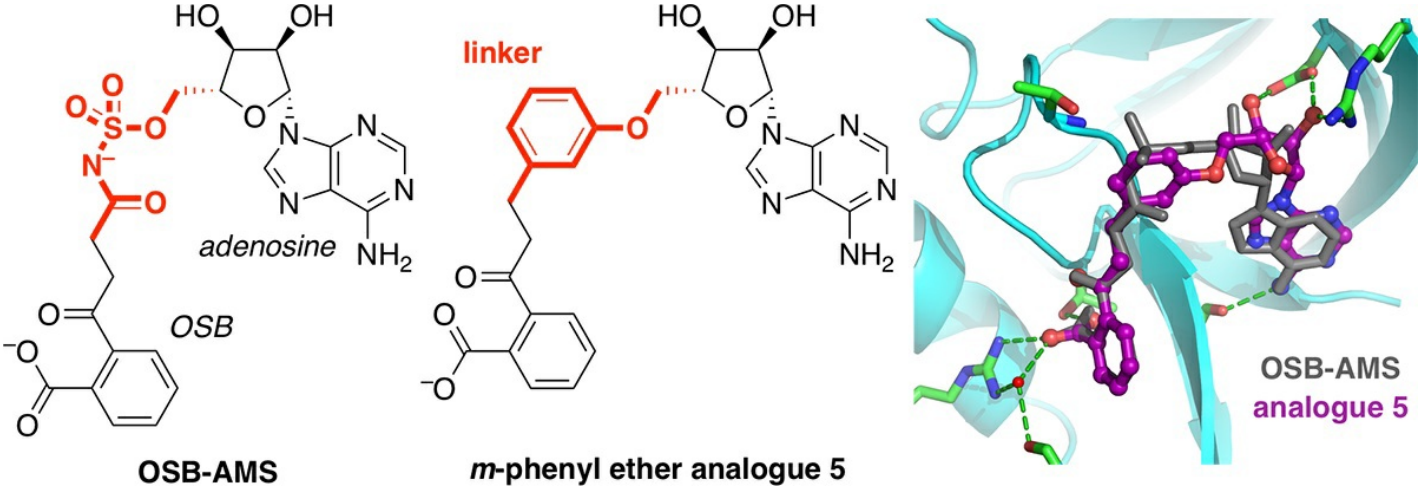
55. Synthesis of bicyclic ethers by a palladium-catalyzed oxidative cyclization-redox relay-π-allyl-Pd cyclization cascade reaction.
Lux, M. C.; Boby, M. L.; Brooks, J. L.; Tan, D. S.* *Chem. Commun.* 2019, *55*, 7013–7016.
[Abstract | PubMed | PMC]



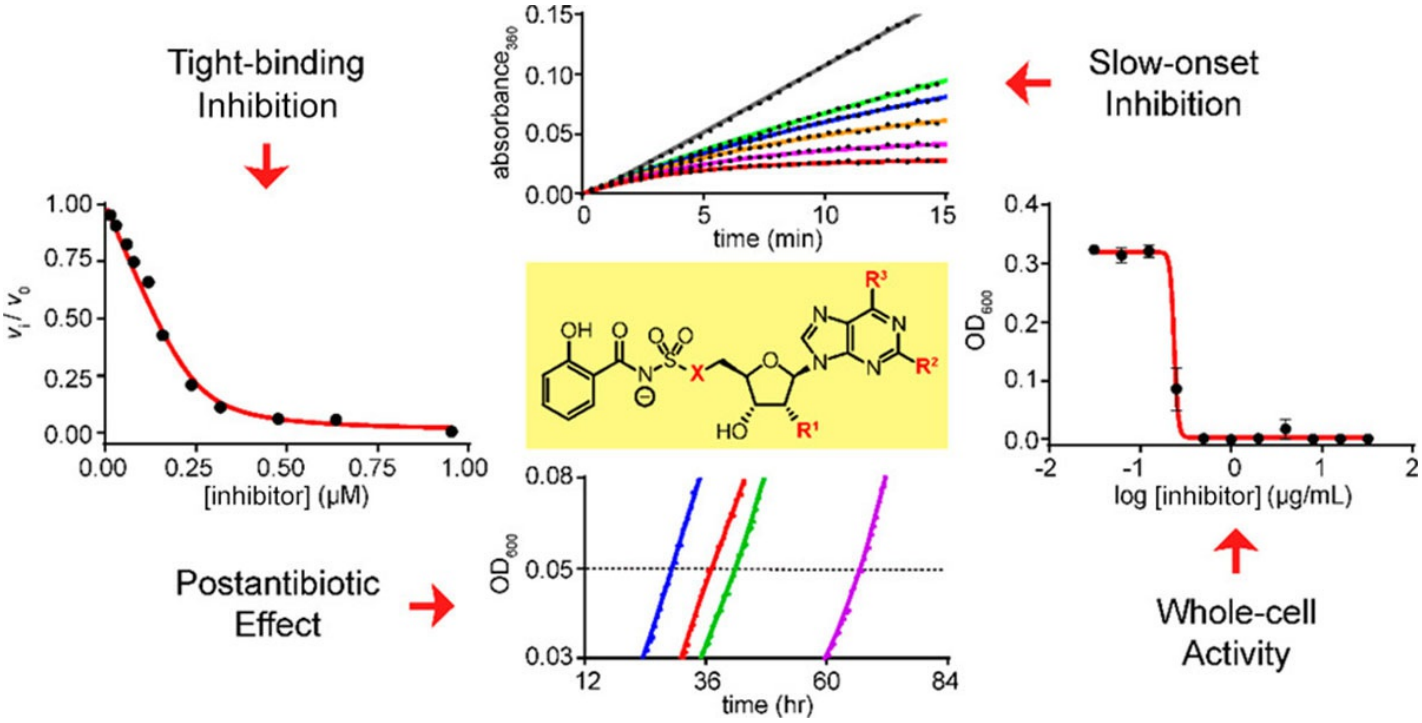
54. Targeting adenylate-forming enzymes with designed sulfonyladenosine inhibitors.
Lux, M. C.; Standke, L. C.; Tan, D. S.* *J. Antibiot.* 2019, *72*, 325–349.
[Abstract | PubMed | PMC]



53. Structure-based design, synthesis, and biological evaluation of non-acyl sulfamate inhibitors of the adenylate-forming enzyme MenE.
Evans, C. E.; Si, Y.; Matarlo, J. S.; Yin, Y.; French, J. B.; Tonge, P. J.*; Tan, D. S.*Biochemistry* 2019, *58*, 1918–1930.
[Abstract | PubMed | PMC]

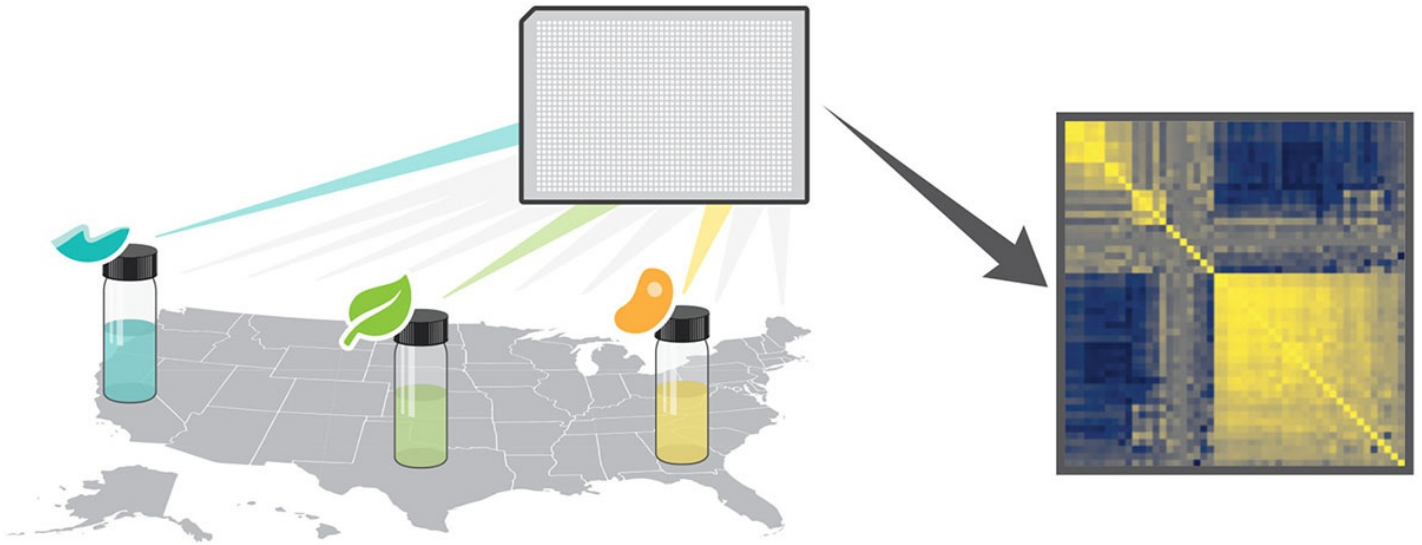


52. Kinetic analyses of the siderophore biosynthesis inhibitor salicyl-AMS and analogues as MbtA inhibitors and antimycobacterial agents.
Bythrow, G. V.; Mohandas, P.; Guney, T.; Standke, L. C.; Germain, G. A.; Lu, X.; Ji, C.; Levendosky, K.; Chavadi, S. S.; Tan, D. S.*; Quadri, L. E. N.* *Biochemistry* 2018, 883–847.
[Abstract | PubMed | PMC]

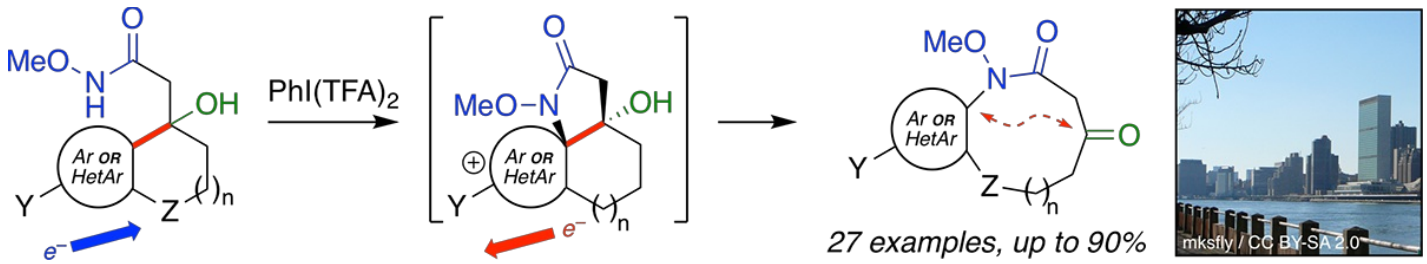


51.

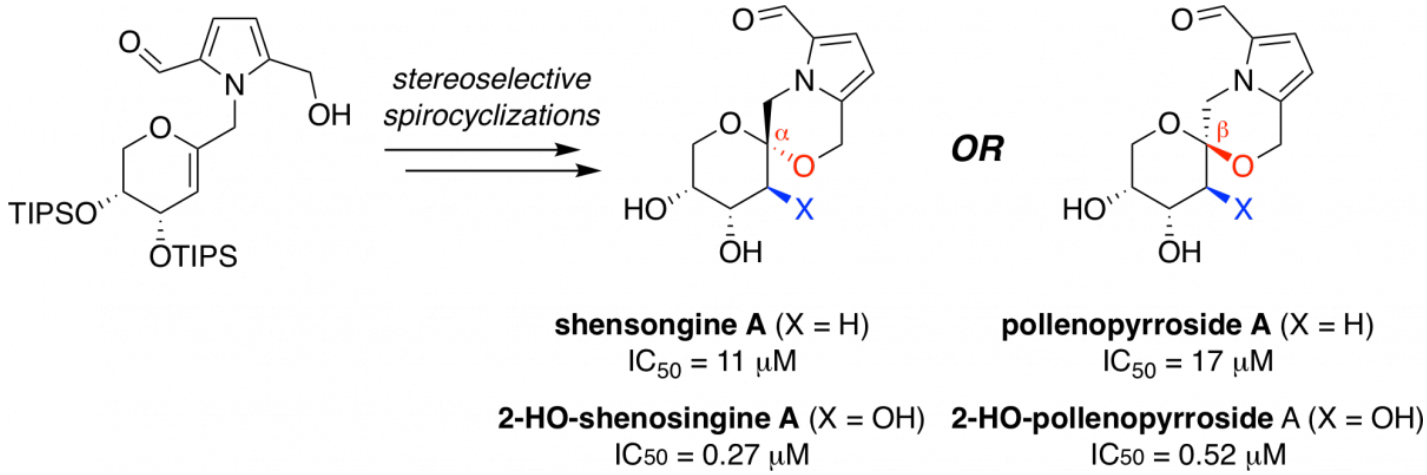
Canvass: A crowd-sourced, natural-product screening library for exploring biological space.
Kearney, S. E. *et al.* Verano, A. L.; Tan, D. S.; Rohde, J. M.* *ACS. Cent. Sci.* 2018, *4*, 1727–1741.
[Abstract | PubMed | PMC]



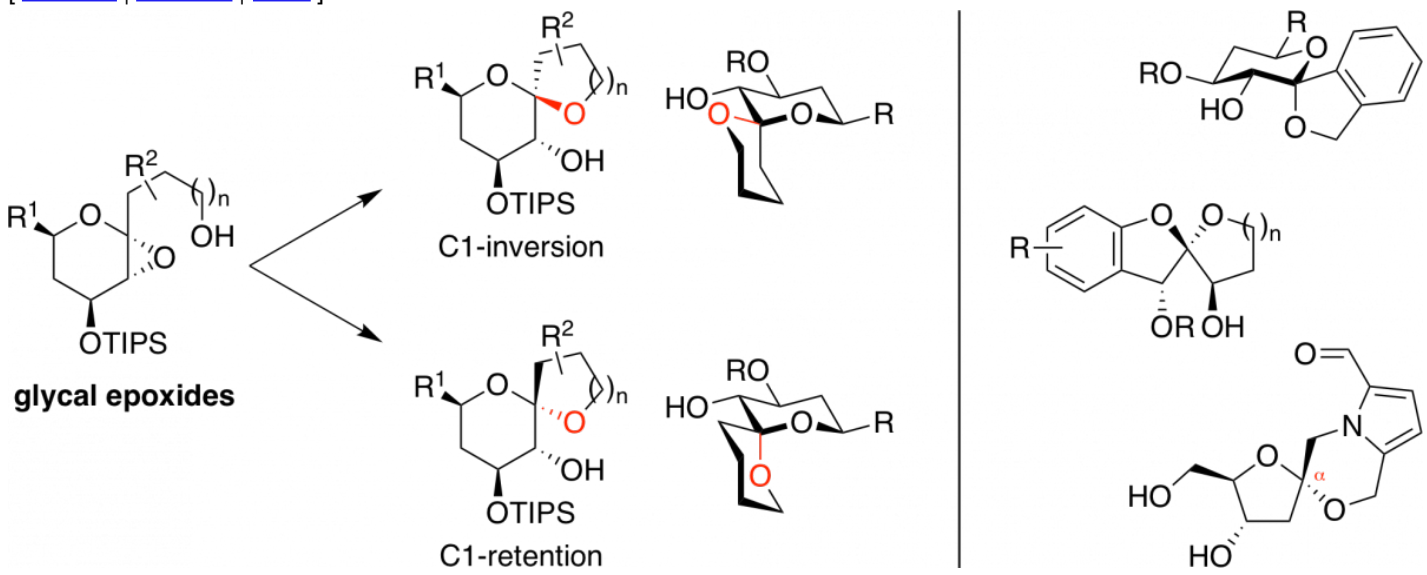
50. Synthesis of Benzannulated Medium-ring Lactams via a Tandem Oxidative Dearomatization-Ring Expansion Reaction.
Guney, T. †; Wenderski, T. A. †; Boudreau, M. W.; Tan, D. S.* *Chem. Eur. J.* 2018, in press.
[Abstract | PubMed |
(*Cover article in Chem. Eur. J)*



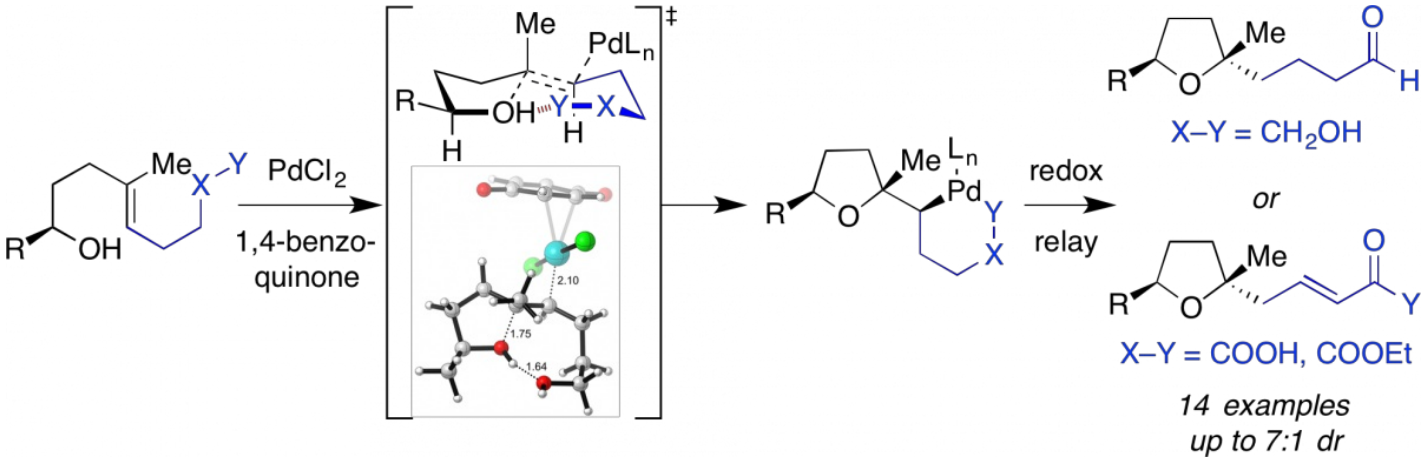
49. Family-level stereoselective synthesis and biological evaluation of pyrrolomorpholine spiroketal natural product antioxidants
Verano, A. L.; Tan, D. S.* *Chem. Sci.* 2017, *8*, 3687–3693.
[Abstract | PubMed | PMC]



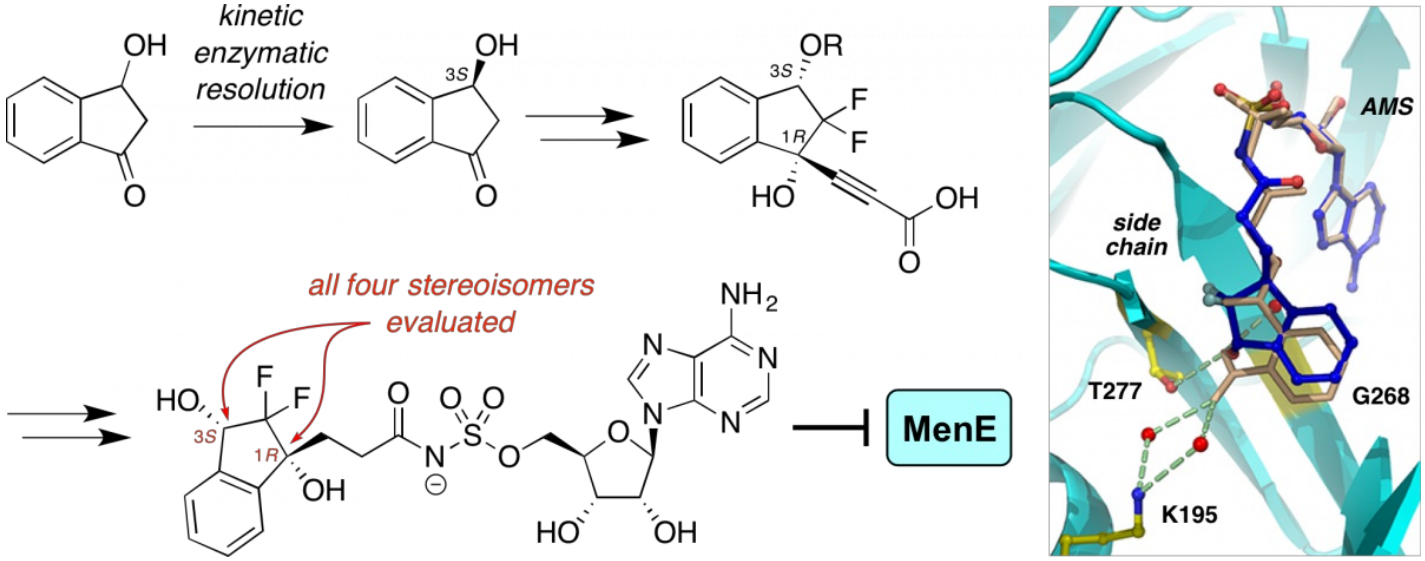
48. Stereocontrolled Synthesis of Spiroketals: An Engine for Chemical and Biological Discovery
Verano, A. L.; Tan, D. S.* *Isr. J. Chem.* 2017, *57*, 279–291.
[Abstract | PubMed | PMC]



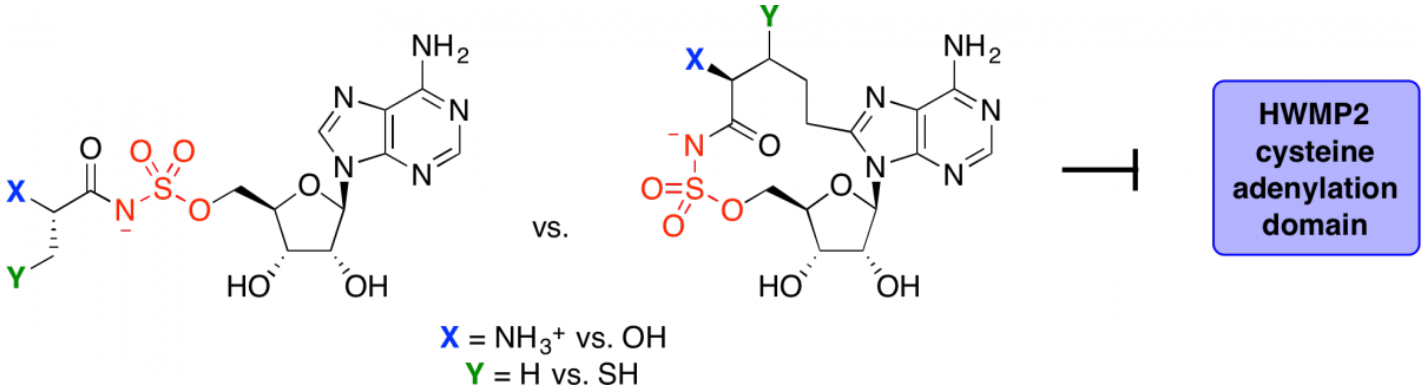
47. Diastereoselective synthesis of highly substituted tetrahydrofurans by Pd-catalyzed tandem oxidative cyclization-redox relay reactions controlled by intramolecular hydrogen bonding.
Brooks, J. L.; Xu, L.; Wiest, O.; Tan, D. S.* *J. Org. Chem.* 2017, *82*, 57–75.
[Abstract | PubMed | PMC]



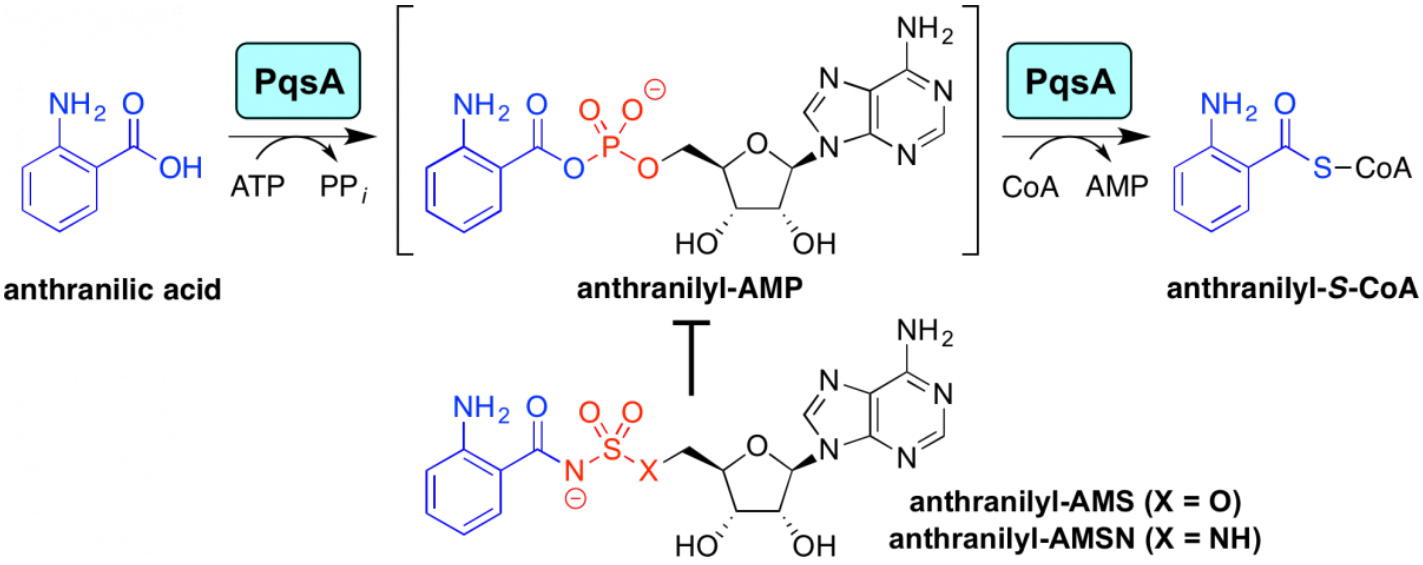
46. Stereoselective synthesis, docking, and biological evaluation of difluoroindanediol-based MenE inhibitors as antibiotics.
Evans, C. E.; Matarlo, J. S.; Tonge, P. J.*; Tan, D. S.* *Org. Lett.* 2016, *18*, 6384–6387.
[Abstract | PubMed | PMC]



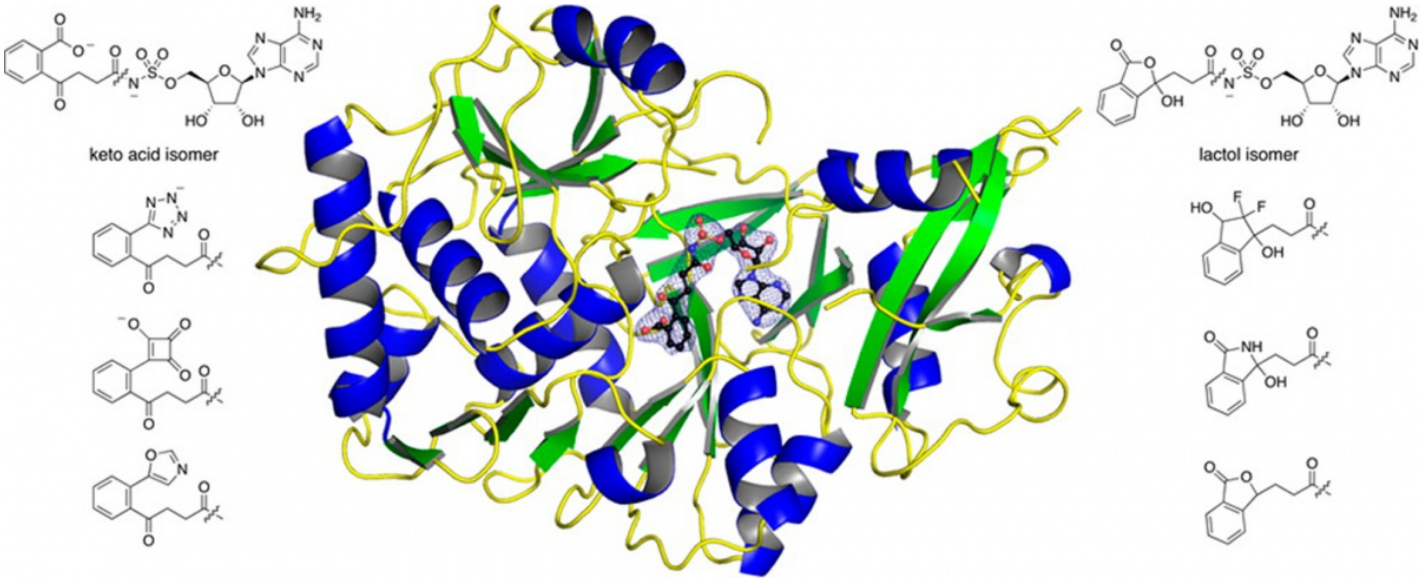
45. Design, synthesis, and biological evaluation of α-hydroxyacyl-AMS inhibitors of amino acid adenylation enzymes.
Davis, T. D.†; Mohandas, P. †; Chiriac, M. I.; Bythrow, G. V.; Quadri, L. E. N.*; Tan, D. S.* *Bioorg. Med. Chem. Lett.* 2016, *21*, 5340–5345.
[Abstract | PubMed | PMC]



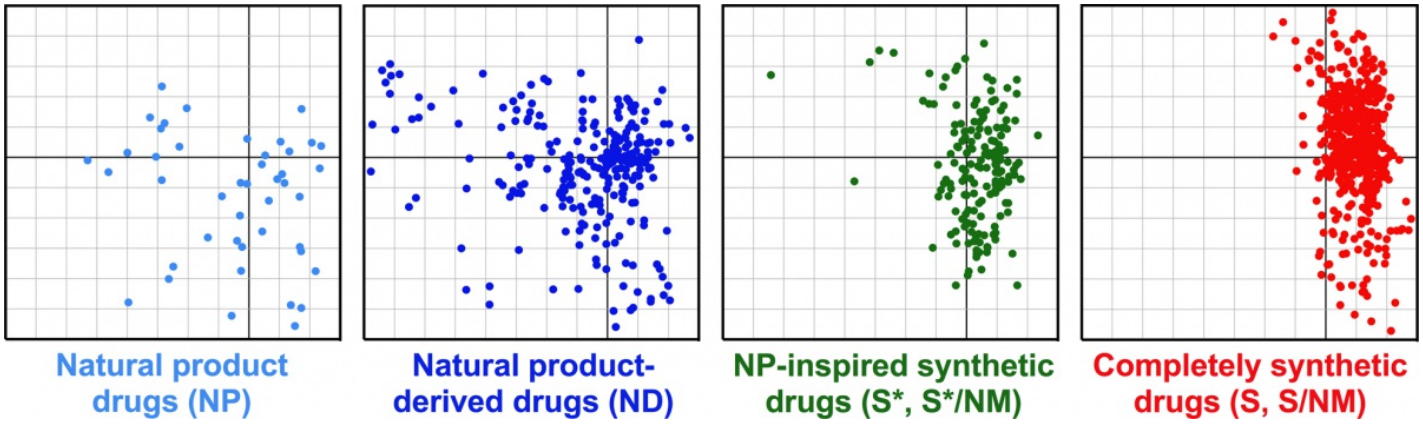
44. Designed small-molecule inhibitors of the anthranilyl-CoA synthetase PqsA block quinolone biosynthesis in *Pseudomonas aeruginosa*.
Ji, C.; Sharma, I.; Pratihar, I.; Hudson, L.; Maura, D.; Guney, T.; Rahme, L. G.; Pesci, E. C.; Coleman, J. P.; Tan, D. S.* *ACS Chem. Biol.* 2016, *11*, 3061–3067.
[Abstract | PubMed | PMC]



43. Mechanism of MenE inhibition by acyl-adenylate analogues and discovery of novel antibacterial agents.
Matarlo, J. S.†; Evans, C. E.†; Sharma, I.; Lavaud, L. J.; Ngo, S. C.; Shek, R.; Rajashankar, K. R.; French, J. B.; Tan, D. S.*; Tonge, P. J.* *Biochemistry* 2015, *54*, 6514–6524.
[Abstract | PubMed | PMC]

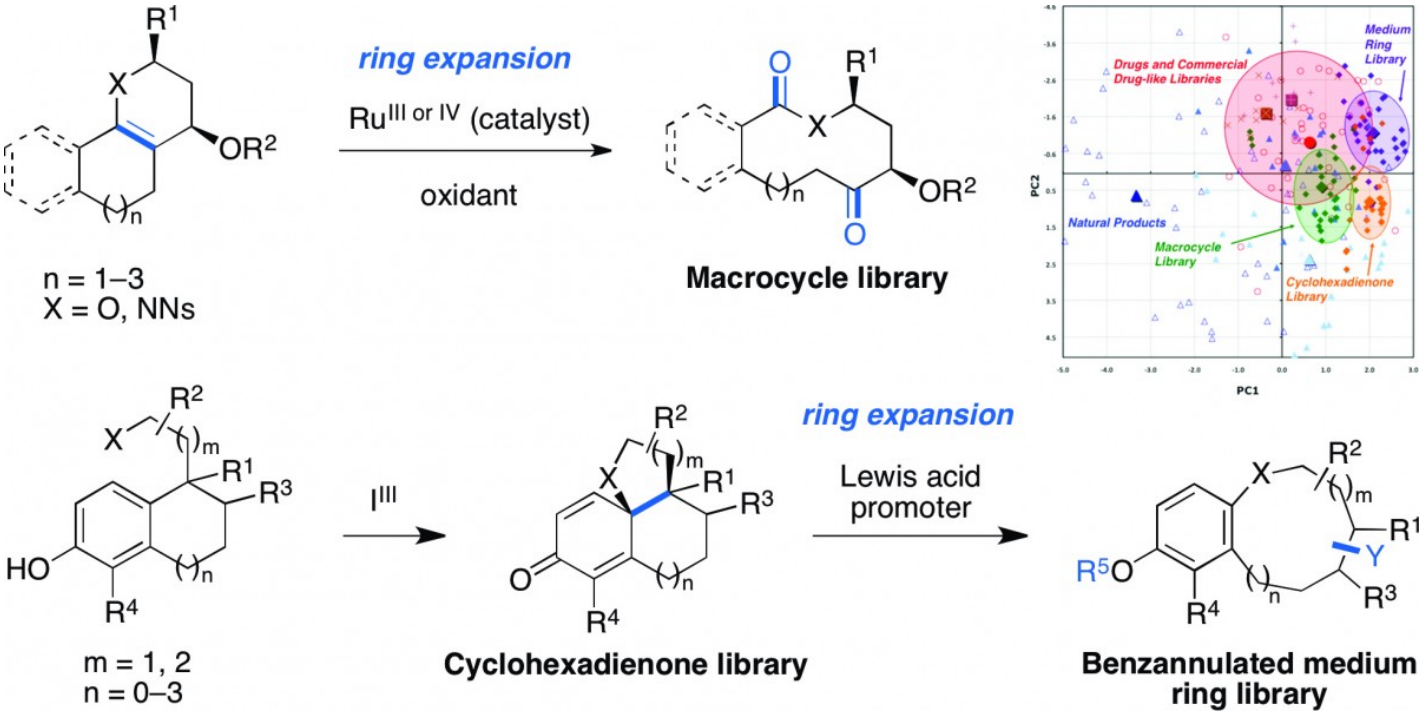


42. Cheminformatic comparison of approved drugs from natural product versus synthetic origins.
Stratton, C. F.; Newman, D. J.; Tan, D. S.* *Bioorg. Med. Chem. Lett.* 2015, *25*, 4802–4807.
[Abstract | PubMed | PMC]

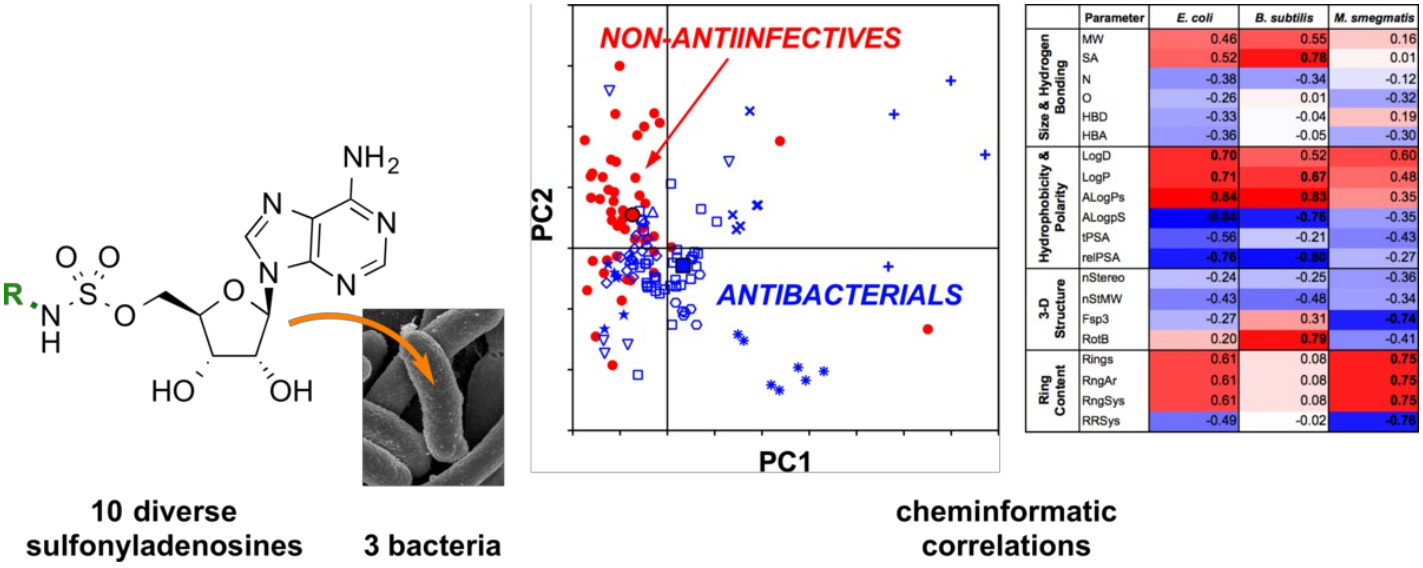


41. Principal component analysis as a tool for library design: A case study investigating natural products, brand-name drugs,

natural product-like libraries, and drug-like libraries.
Wenderski, T. A.; Stratton, C. F.; Bauer, R. A.; Kopp, F.; Tan, D. S.* *Methods Mol. Biol.* 2015, *1263*, 225–242.
[Abstract | PubMed | PMC]

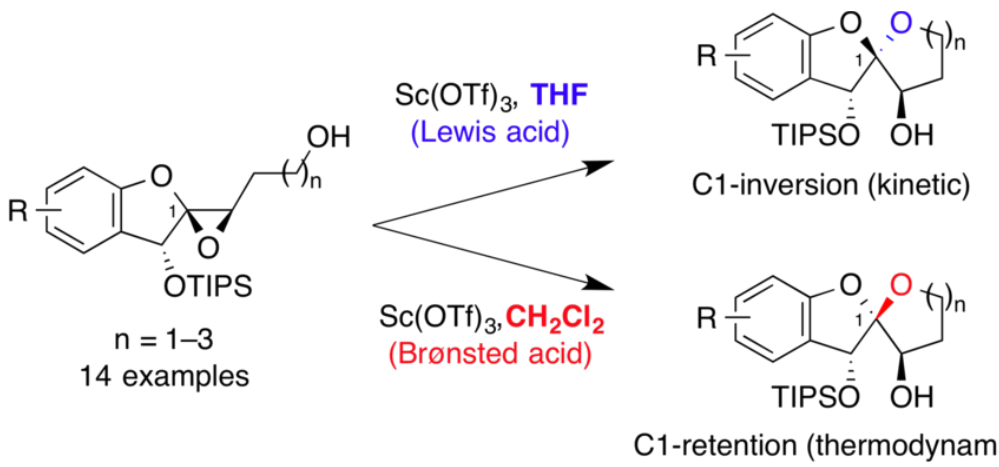


40. General platform for systematic quantitative evaluation of small-molecule permeability in bacteria.
Davis, T. D.; Gerry, C. J.; Tan, D. S.* *ACS Chem. Biol.* 2014, *9*, 2535–2544.
[Abstract | PubMed | PMC]



(*Highlighted in ACS Chem. Biol.*)

39. Solvent-dependent divergent functions of $Sc(OTf)_3$ in stereoselective epoxide-opening spiroketalizations.
Sharma, I.; Wurst, J. M.; Tan, D. S.* *Org. Lett.* 2014, *16*, 2474–2477.
[Abstract | PubMed | PMC]



38. Pharmacokinetic and *in vivo* efficacy studies of the mycobactin biosynthesis inhibitor salicyl-AMS in mice.
Lun, S.; Guo, H.; Adamson, J.; Cisar, J. S.; Davis, T. D.; Sundaramn Chavadi, S.; Warren, J. D.; Quadri, L. E. N.*; Tan, D. S.*; Bishai, W. R.* *Antimicrob. Agents Chemother.* 2013, *57*, 5138–5140.
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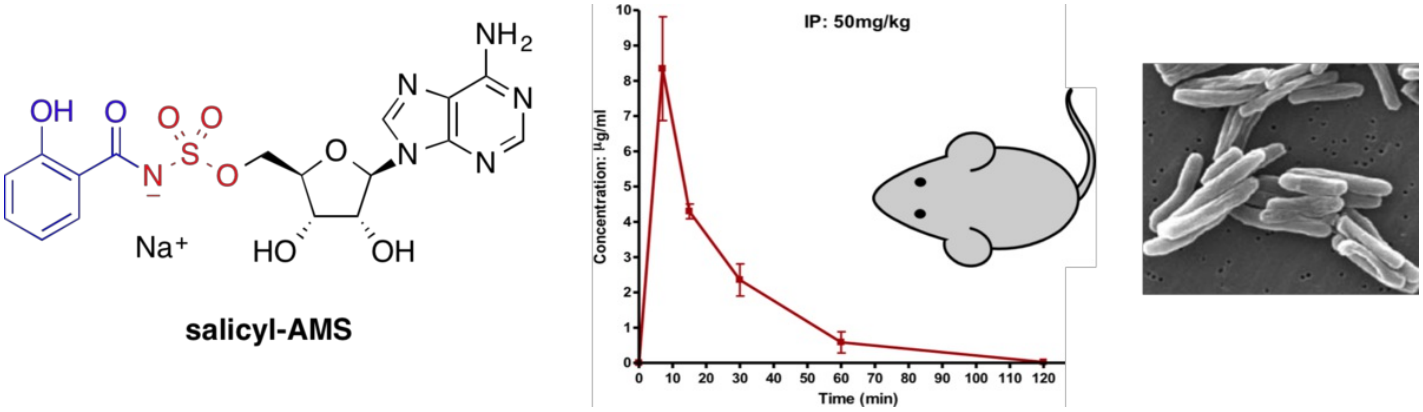

37. Diversifying complexity.
Sharma, I.; Tan, D. S.* *Nat. Chem.* 2013, *5*, 157–158.
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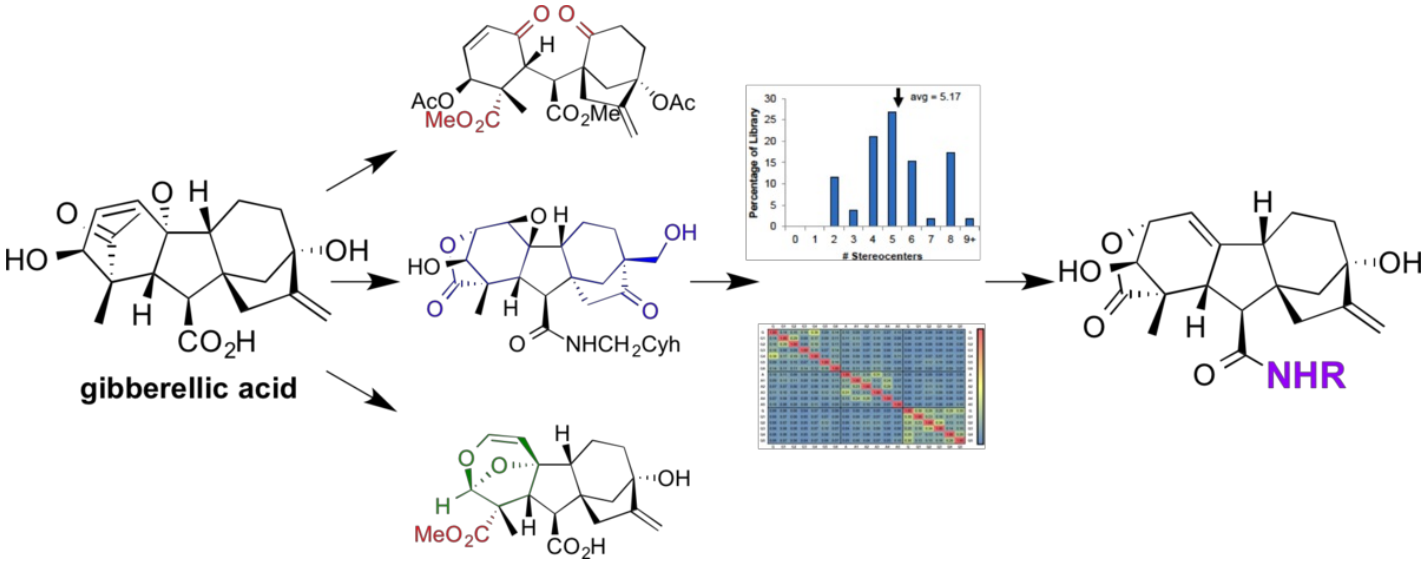
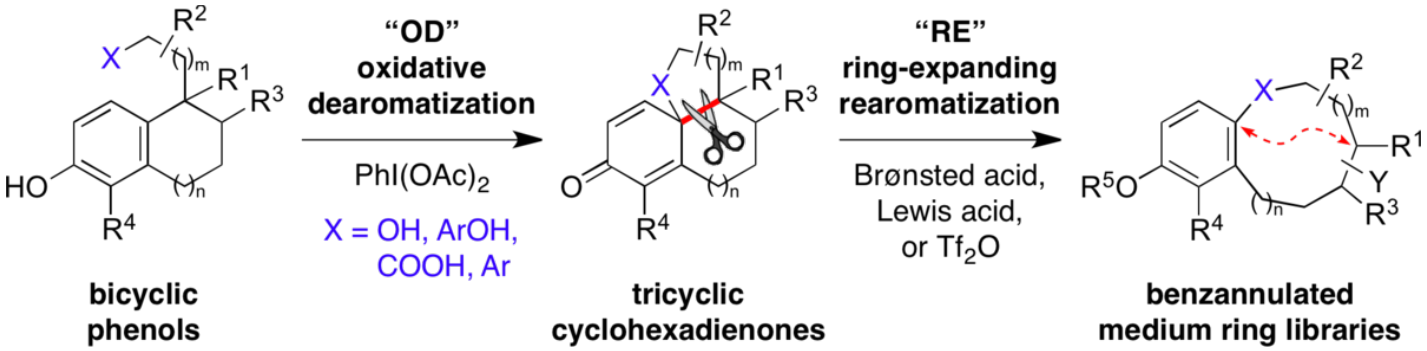
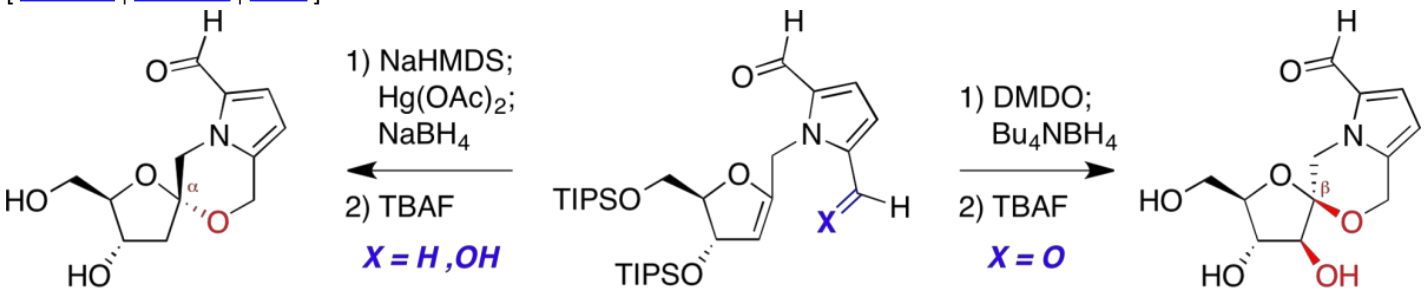
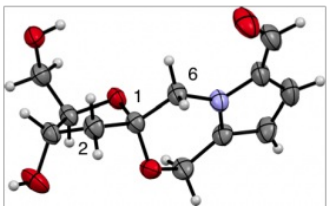


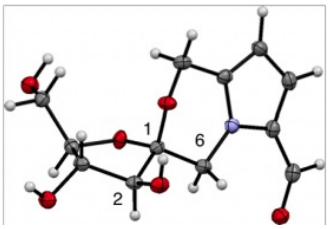
36. Biomimetic diversity-oriented synthesis of benzannulated medium rings via ring expansion.
Bauer, R. A.; Wenderski, T. A.; Tan, D. S.* *Nat. Chem. Biol.* 2013, *9*, 21–29.
[Abstract | PubMed | PMC]



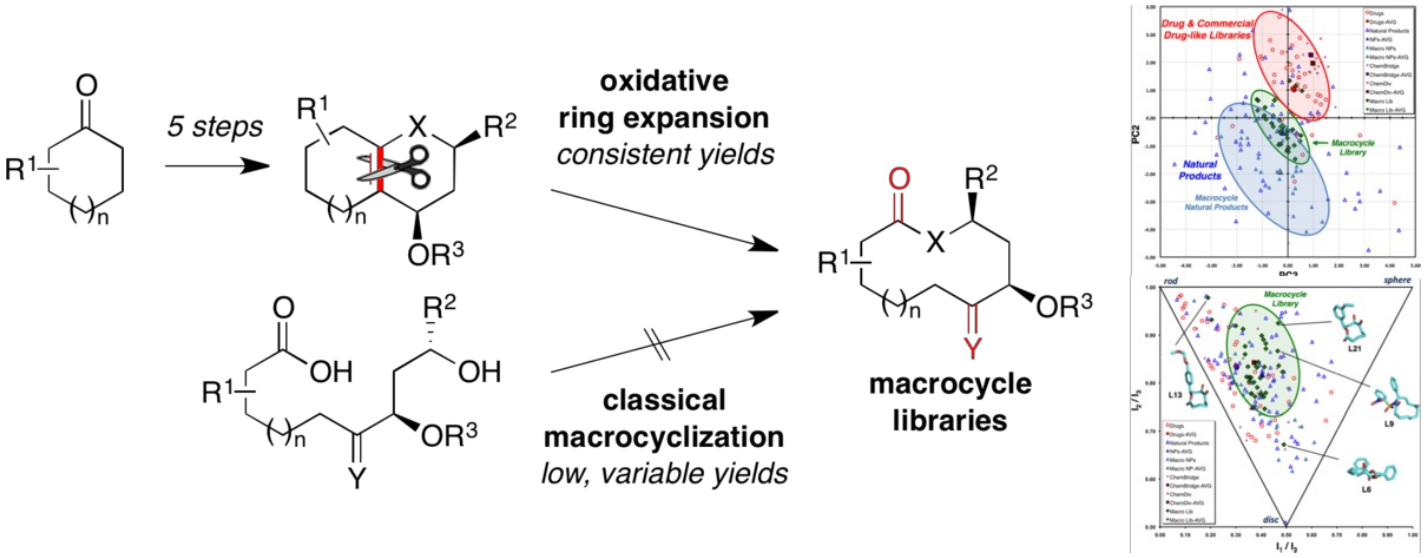
35. Stereoselective synthesis of acortatarins A and B.
Wurst, J. M.; Verano, A. L.; Tan, D. S.* *Org. Lett.* 2012, *14*, 4442–4445.
[Abstract | PubMed | PMC]







34. A diversity-oriented synthesis approach to macrocycles via oxidative ring expansion.
Kopp, F.; Stratton, C. F.; Akella, L. B.; Tan, D. S.* *Nat. Chem. Biol.* 2012, *8*, 358–365.
[Abstract | PubMed | PMC]



(*Highlighted in SciBX*)

33. 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–

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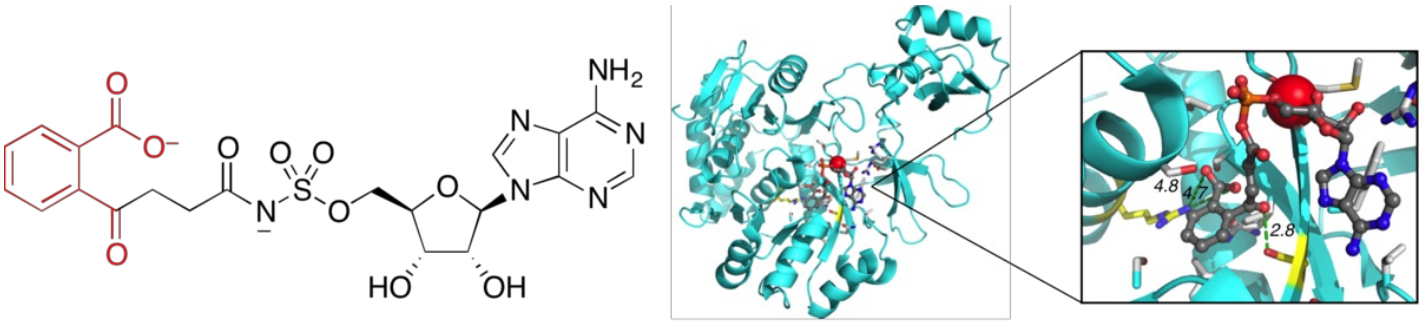
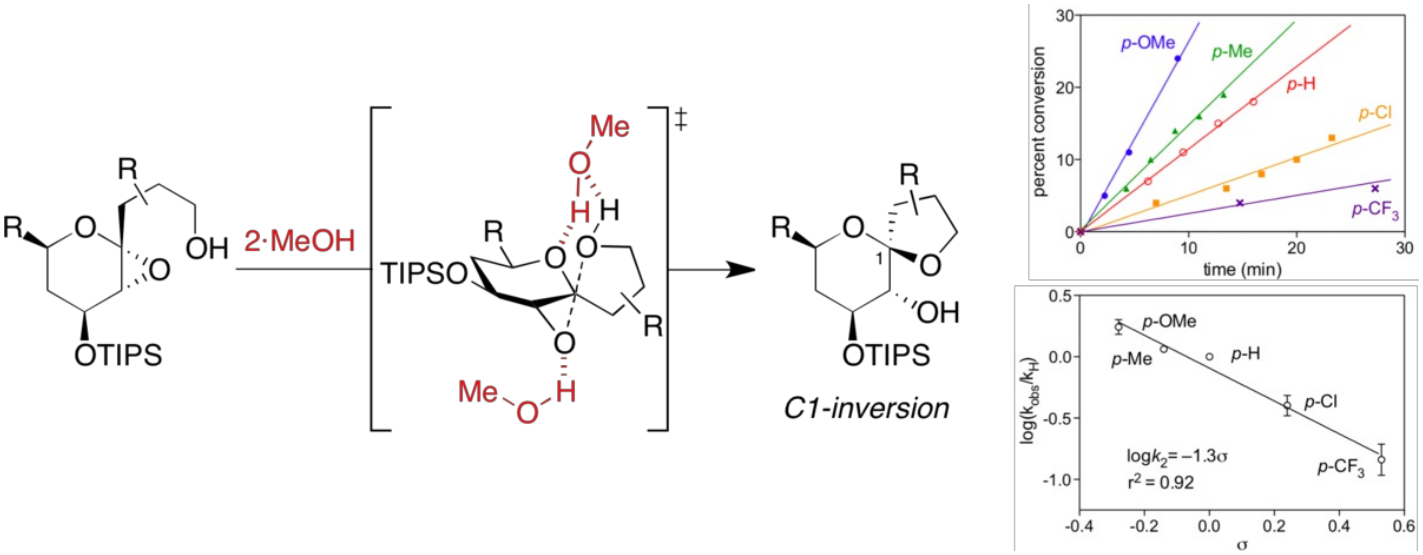
[Abstract | PubMed | PMC]



32. Hydrogen-bonding catalysis and inhibition by simple solvents in the stereoselective kinetic epoxide-opening spirocyclization of glycal epoxides to form spiroketals.

Wurst, J. M.; Liu, G.; Tan, D. S.* *J. Am. Chem. Soc.* 2011, *133*, 7916–7925.

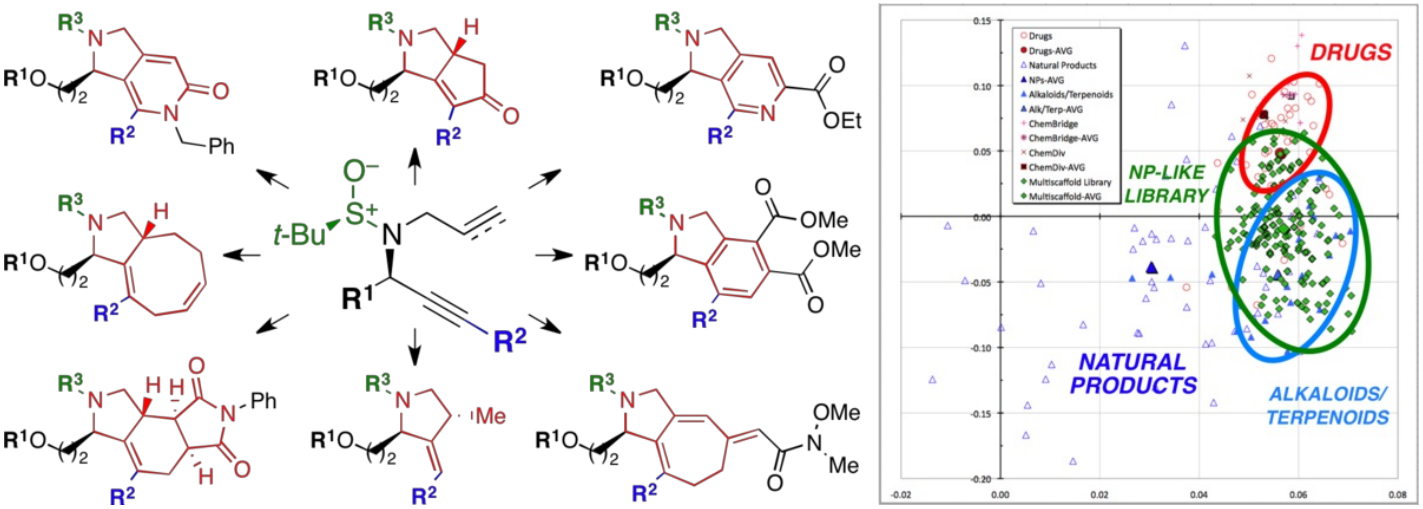
[Abstract | PubMed | PMC]



31. Solid-phase synthesis and chemical space analysis of a 190-membered alkaloid/terpenoid-like library.

Moura-Letts, G.; DiBlasi, C. M.; Bauer, R. A.; Tan, D. S.* *Proc. Natl. Acad. Sci. USA* 2011, *108*, 6745–6750.

[Abstract | PubMed | PMC]



30. The *tert*-butylsulfinamide lynchpin in transition-metal-mediated multiscaffold library synthesis.

Bauer, R. A.; DiBlasi, C. M.; Tan, D. S.* *Org. Lett.* 2010, *12*, 2084–2087.

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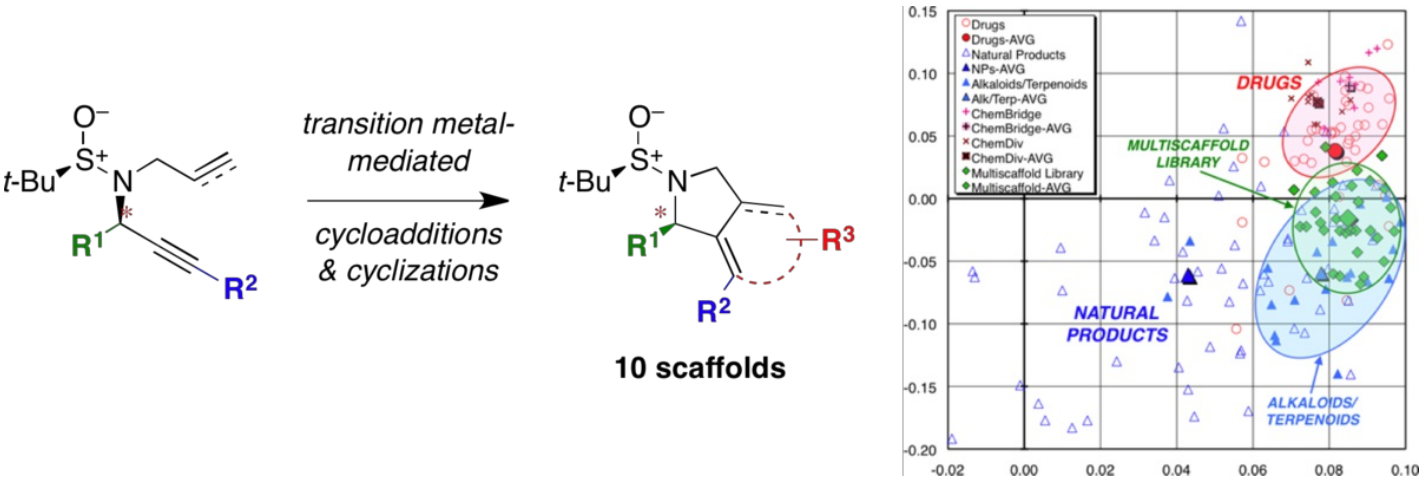
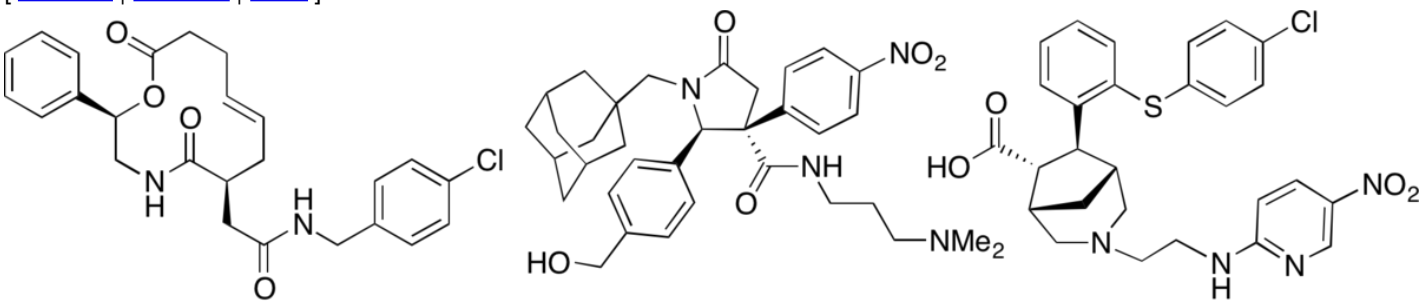
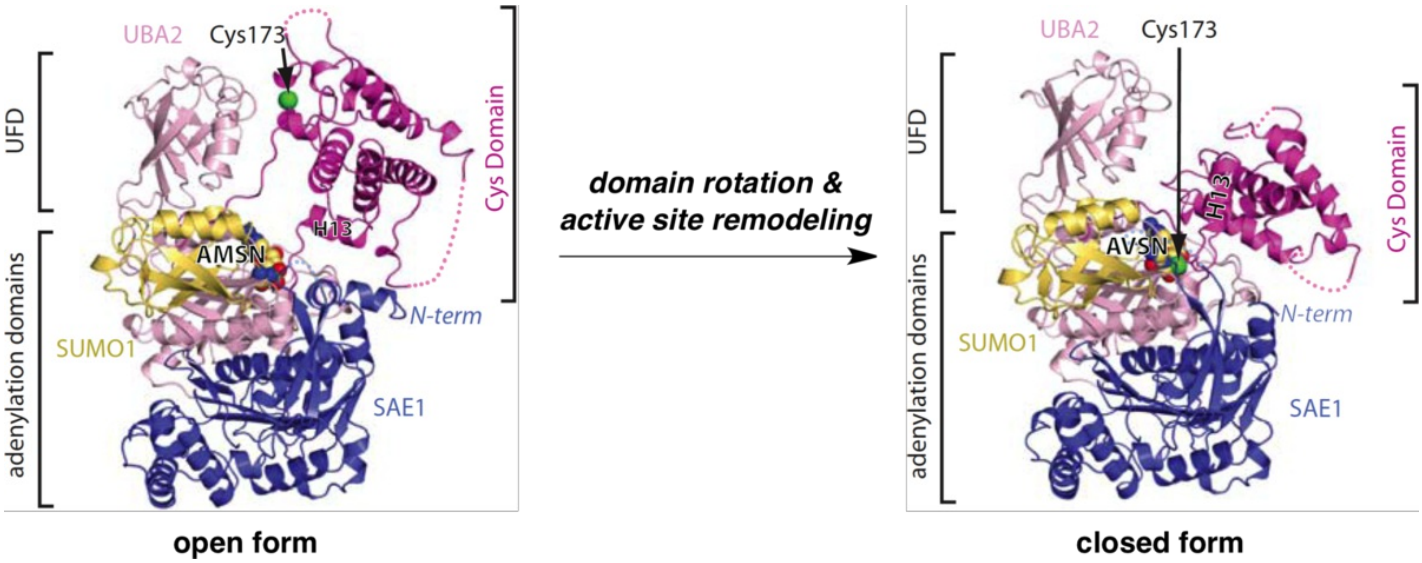


29. Expanding the range of 'druggable' targets with natural product-based libraries: An academic perspective.
Bauer, R. A.; Wurst, J. M.; Tan, D. S.* *Curr. Opin. Chem. Biol.* 2010, *14*, 308–314.
[Abstract | PubMed | PMC]

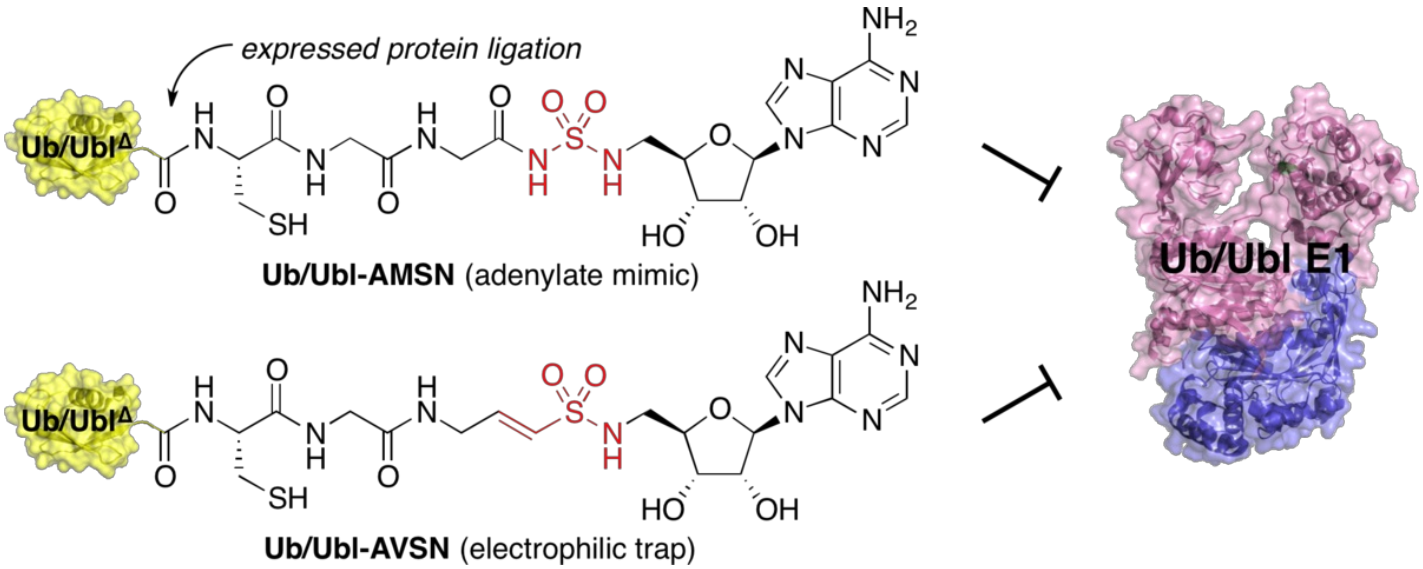


28. Active site remodelling accompanies thioester bond formation in the SUMO E1.
Olsen, S. K.; Capili. A. D.; Lu, X.; Tan, D. S.*; Lima, C. D.* *Nature* 2010, *463*, 906–912.
[Abstract | PubMed | PMC]



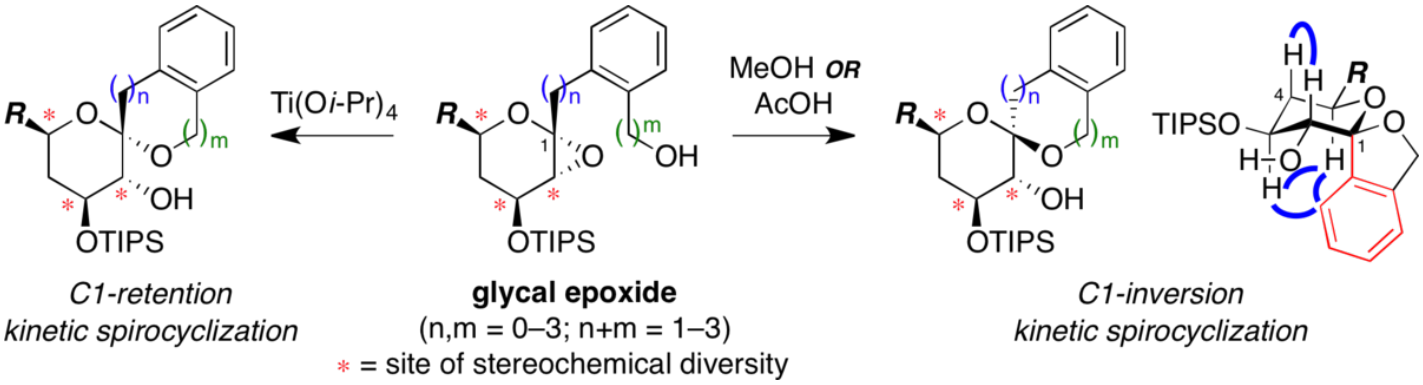
(*Highlighted in Nature, Chem. Eng. News, Nat. Rev. Mol. Cell Biol., Nat. Chem. Biol., Structure, ACS Chem. Biol., and Faculty of 1000 Biology*)

27. 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]

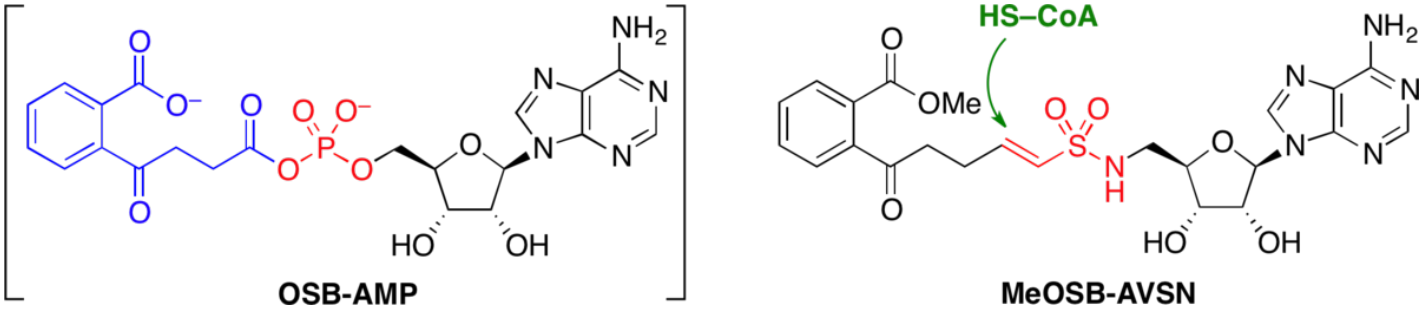


(*Highlighted in Chem. Eng. News, Nat. Rev. Mol. Cell Biol., ACS Chem. Biol., and Faculty of 1000 Biology*)

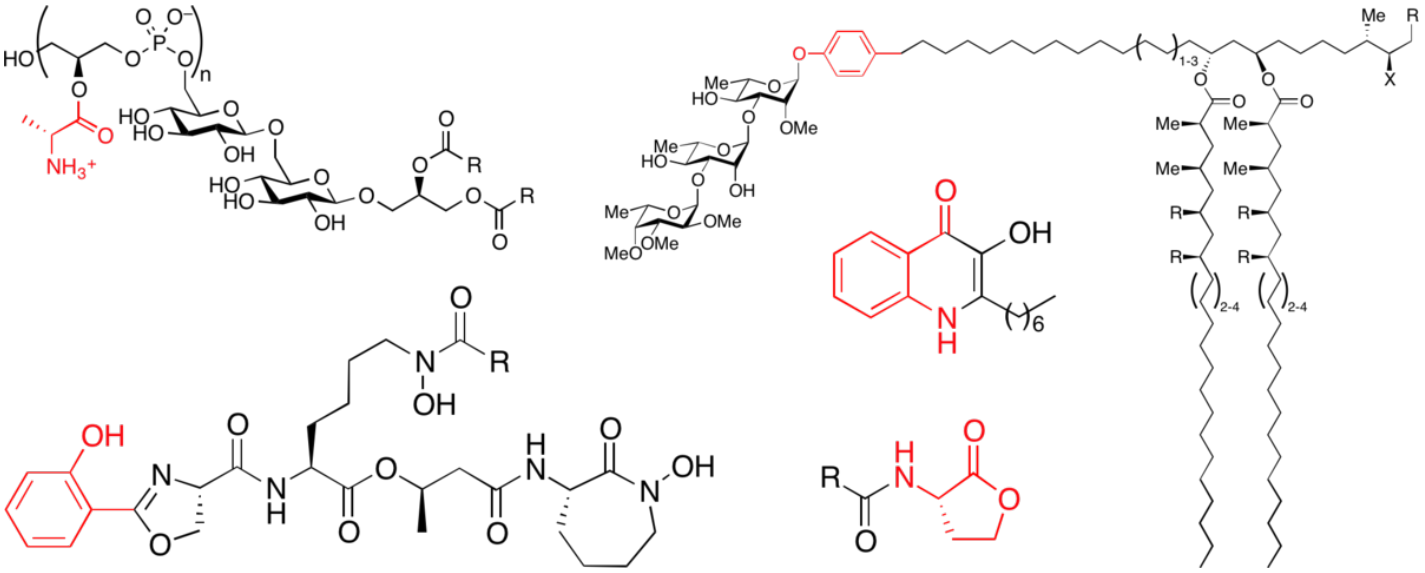
26. Stereoselective synthesis of benzannulated spiroketals: Influence of the aromatic ring on reactivity and conformation.
Liu, G.; Wurst, J. M.; Tan, D. S.* *Org. Lett.* 2009, *11*, 3670–3673.
[Abstract | PubMed | PMC]



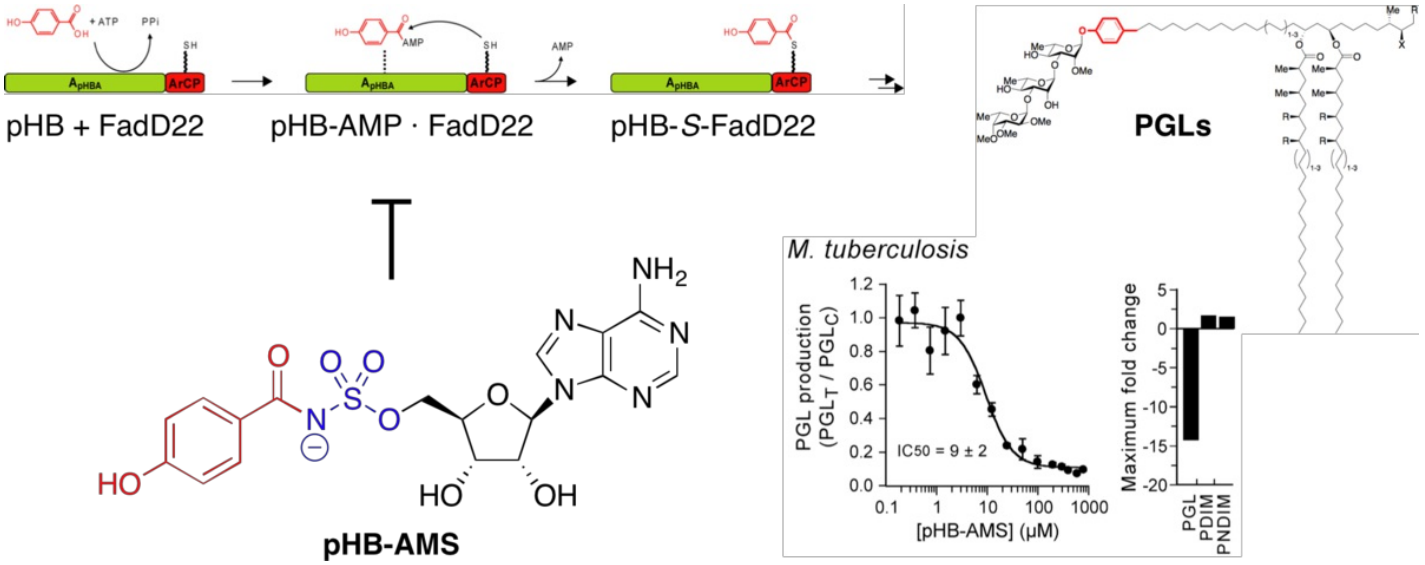
25. Mechanism-based inhibitors of MenE, an acyl-CoA synthetase involved in bacterial menaquinone biosynthesis.
Lu, X.; Zhang, H.; Tonge, P. J.*; Tan, D. S.* *Bioorg. Med. Chem. Lett.* 2008, *18*, 5963–5966.
[Abstract | PubMed | PMC]



24. Small molecule inhibition of microbial natural product biosynthesis – An emerging antibiotic strategy.
Cisar, J. S.; Tan, D. S.* *Chem. Soc. Rev.* 2008, *37*, 1320–1329.
[Abstract | PubMed | PMC]

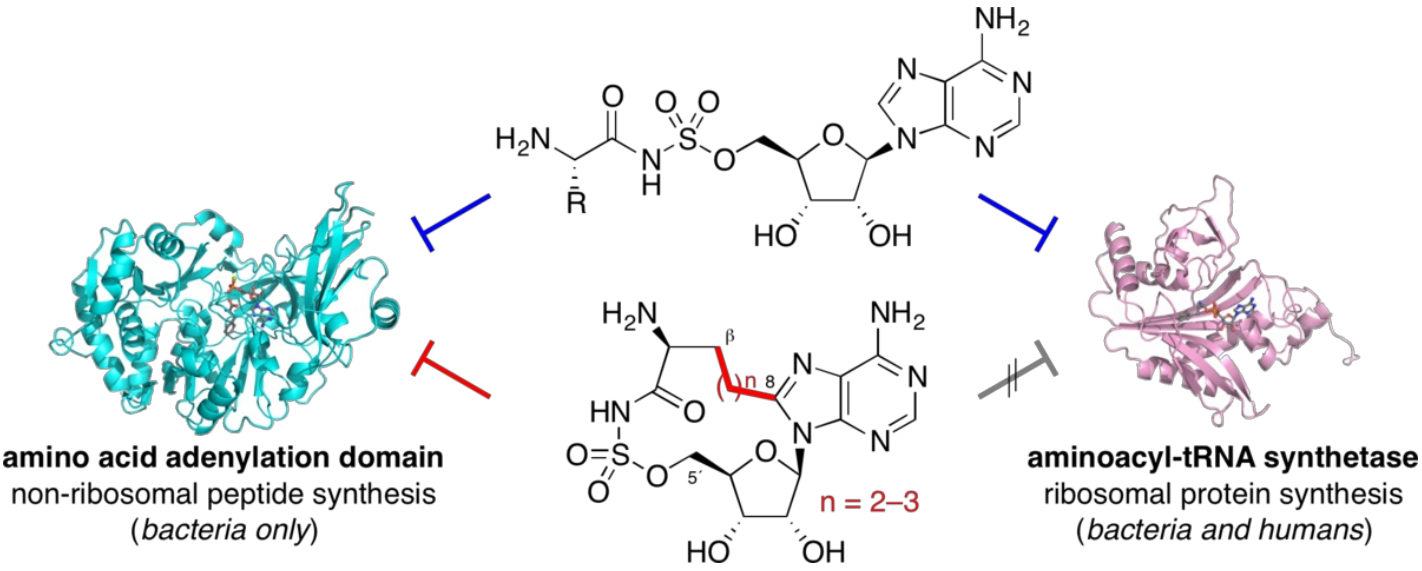


23. Mycobacterial phenolic glycolipid virulence factor biosynthesis: Mechanism and small-molecule inhibition of polyketide chain initiation.
Ferreras, J. A.; Stirrett, K. L.; Lu, X.; Ryu, J.-S.; Soll, C. E.; Tan, D. S.; Quadri, L. E. N.* *Chem. Biol.* 2008, *15*, 51–61.
[Abstract | PubMed | PMC]



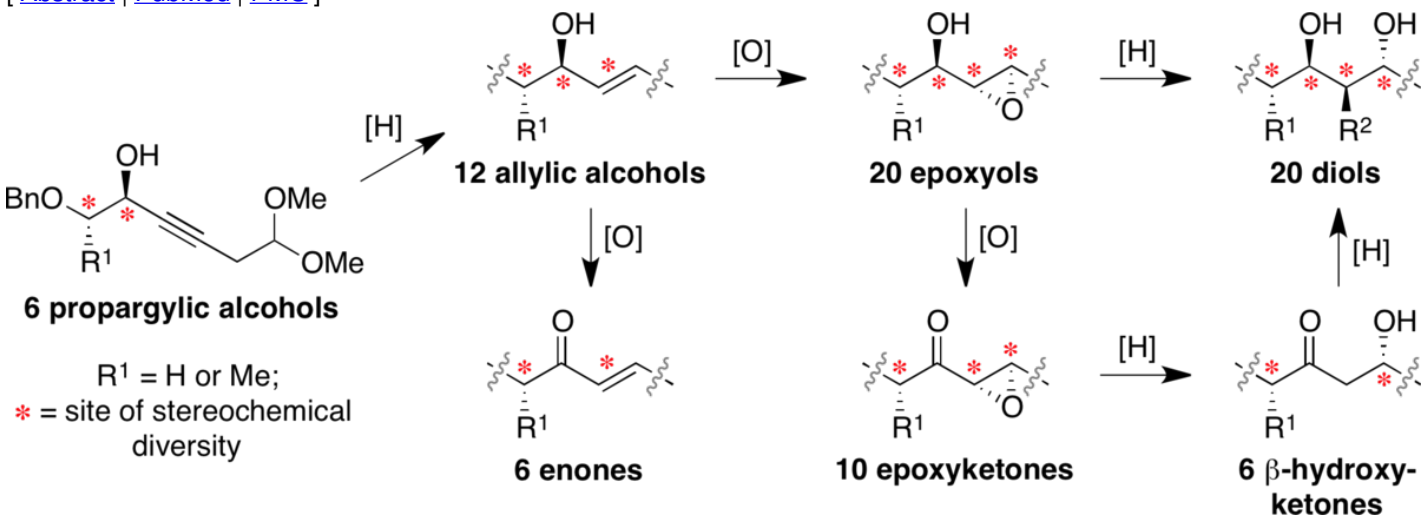
(*Highlighted in Chem. Biol.*)

22. Exploiting ligand conformation in selective inhibition of non-ribosomal peptide synthetase amino acid adenylation with designed macrocyclic small molecules.
Cisar, J. S.; Ferreras, J. A.; Soni, R. K.; Quadri, L. E. N.*; Tan, D. S.* *J. Am. Chem. Soc.* 2007, *129*, 7752–7753.
[Abstract | PubMed | PMC]

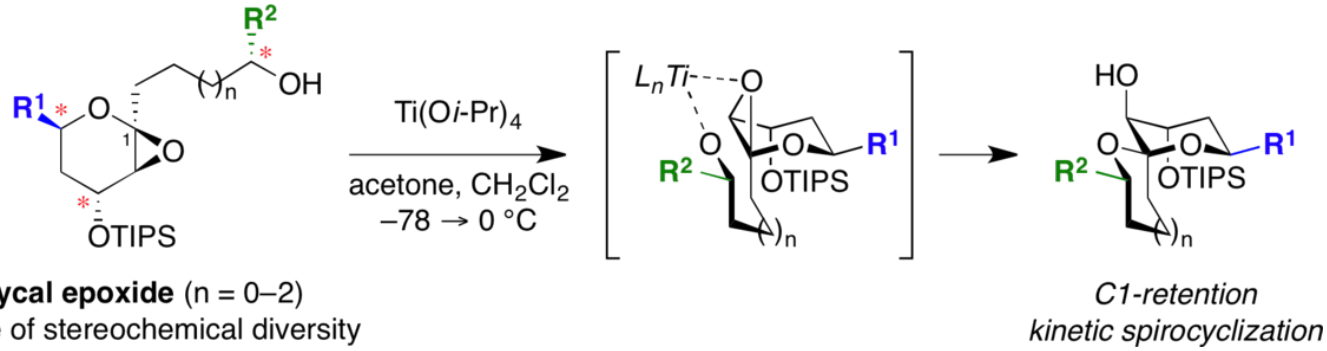


(*Highlighted in Faculty of 1000 Biology*)

21. A unified synthetic approach to polyketides having both skeletal and stereochemical diversity.
Shang, S.; Iwadare, H.; Macks, D. E.; Ambrosini, L. M.; Tan, D. S.* *Org. Lett.* 2007, *9*, 1895–1898.
[Abstract | PubMed | PMC]



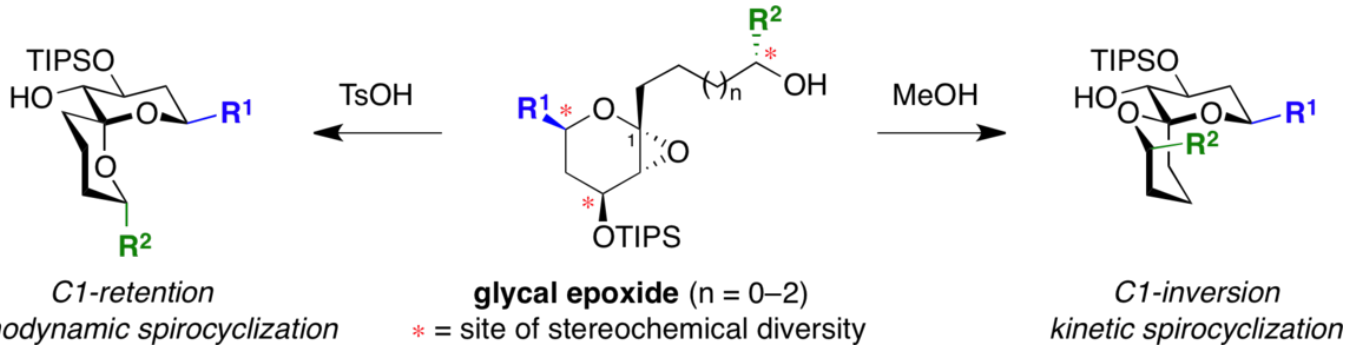
20. Stereocontrolled synthesis of spiroketals via Ti(O*i*-Pr)4-mediated kinetic spirocyclization of glycal epoxides with retention of configuration.
Moilanen, S. B.; Potuzak, J. S.; Tan, D. S.* *J. Am. Chem. Soc.* 2006, *128*, 1792–1793.
[Abstract | PubMed | PMC]



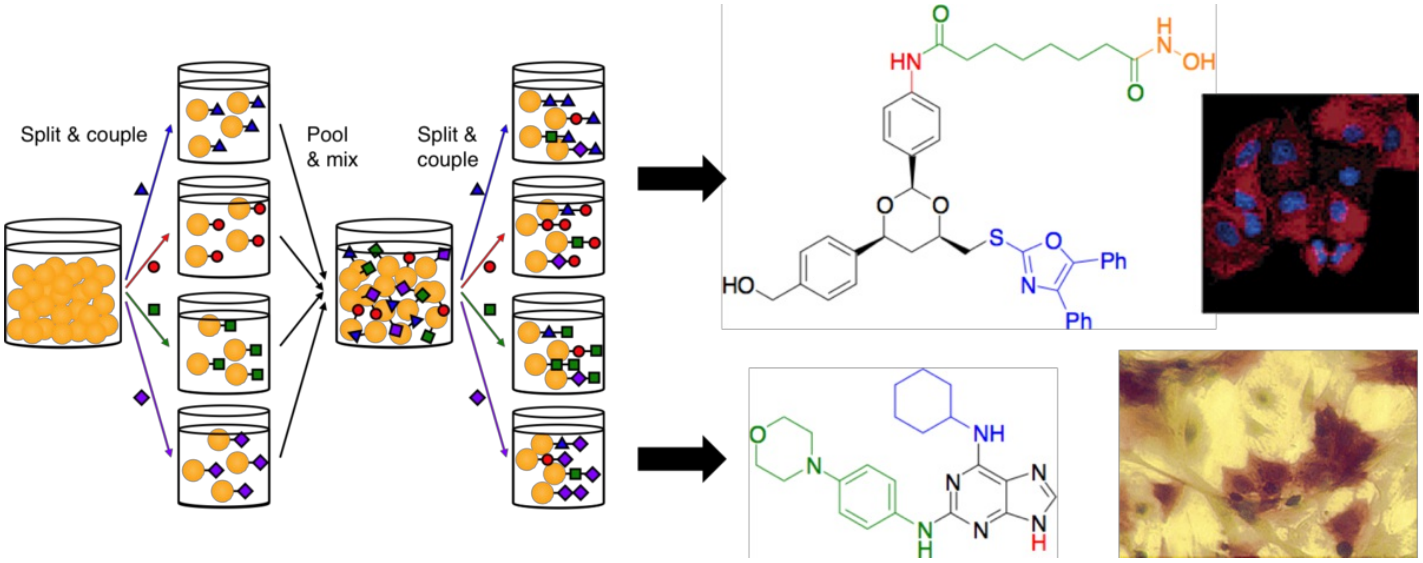
(*Highlighted in Nature*)

19. Stereocontrolled synthesis of spiroketals via a remarkable methanol-induced kinetic spirocyclization reaction.

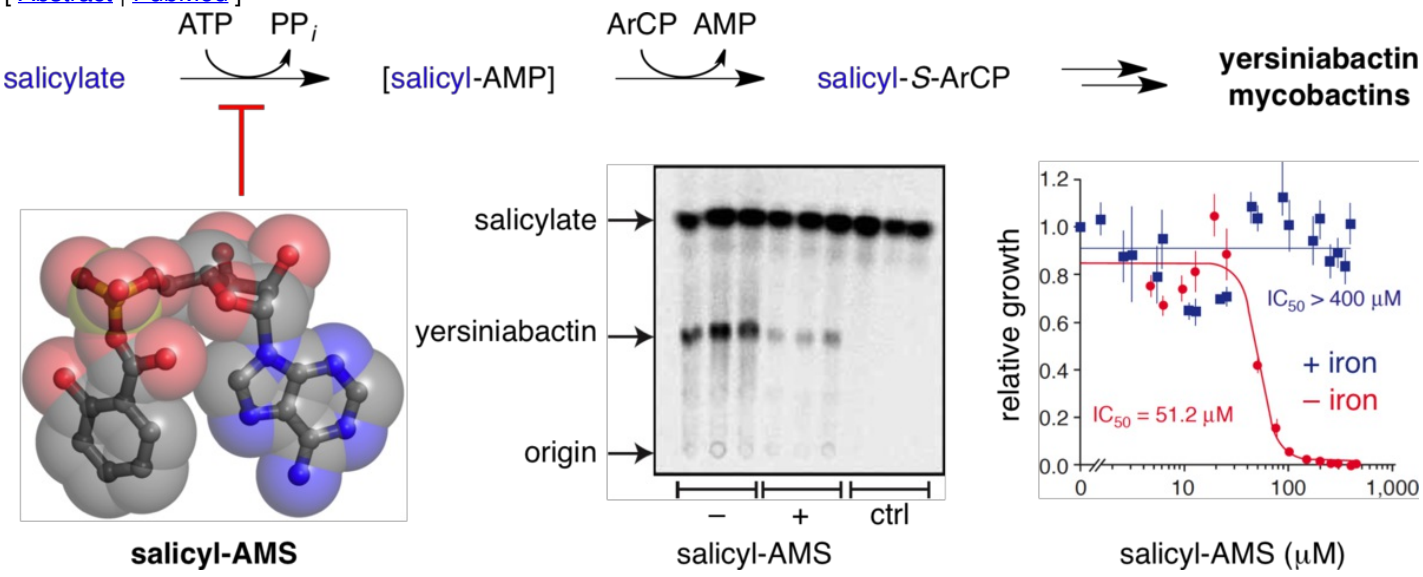
Potuzak, J. S.; Moilanen, S. B.; Tan, D. S.* *J. Am. Chem. Soc.* 2005, *127*, 13796–13797.
[Abstract | PubMed]



18. Diversity-oriented synthesis: Exploring the intersections between chemistry and biology.
Tan, D. S.* *Nat. Chem. Biol.* 2005, *1*, 74–84.
[Abstract | PubMed]



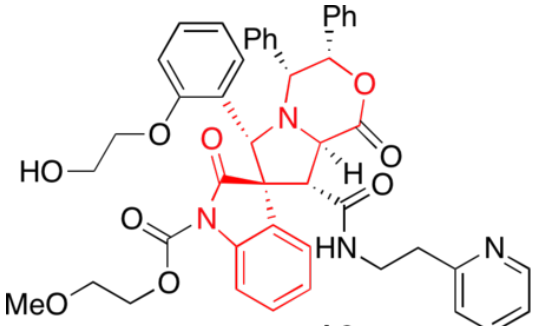
17. Small-molecule inhibition of siderophore biosynthesis in *Mycobacterium tuberculosis* and *Yersinia pestis*.
Ferreras, J. A.; Ryu, J.-S.; Di Lello, F.; Tan, D. S.*, Quadri, L. E. N.* *Nat. Chem. Biol.* 2005, *1*, 29–32.
[Abstract | PubMed]



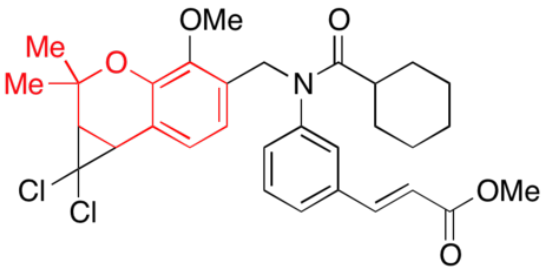
(*Highlighted in Nature, Nat. Chem. Biol., Chem. Eng. News., and Mercosur Económico*)

16. Advancing chemistry and biology through diversity-oriented synthesis of natural product-like libraries.

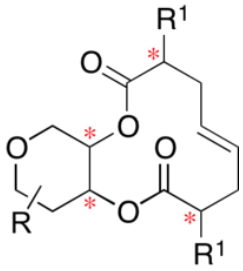
Shang, S.; Tan, D. S.* *Curr. Opin. Chem. Biol.* 2005, *9*, 248–258.
[Abstract | PubMed]



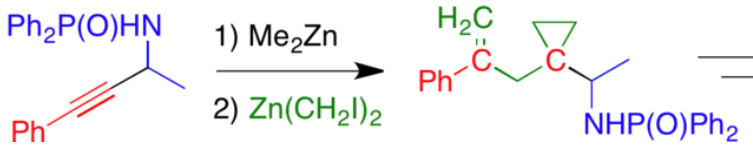
compound 9
enhancer of latrunculin B



fexarchloramide
FXR agonist

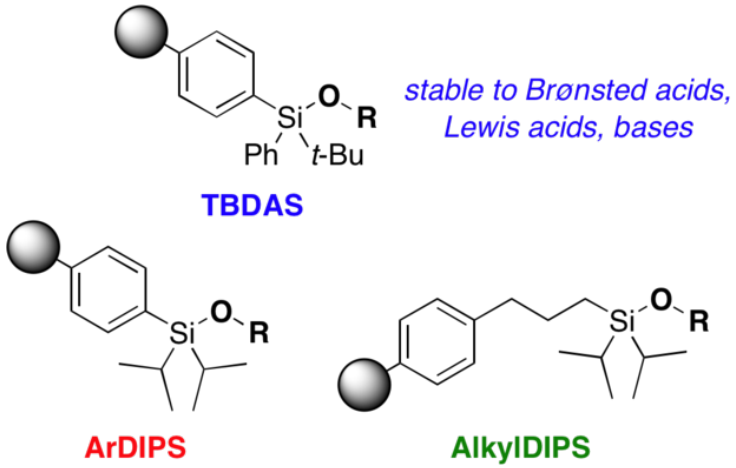


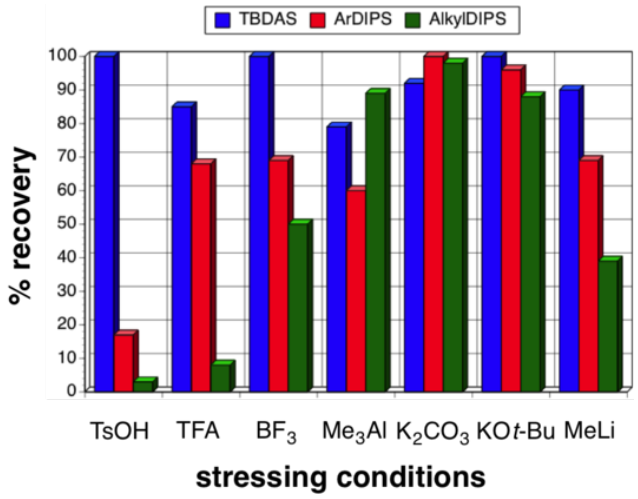
macrocycles



azaspirocycles

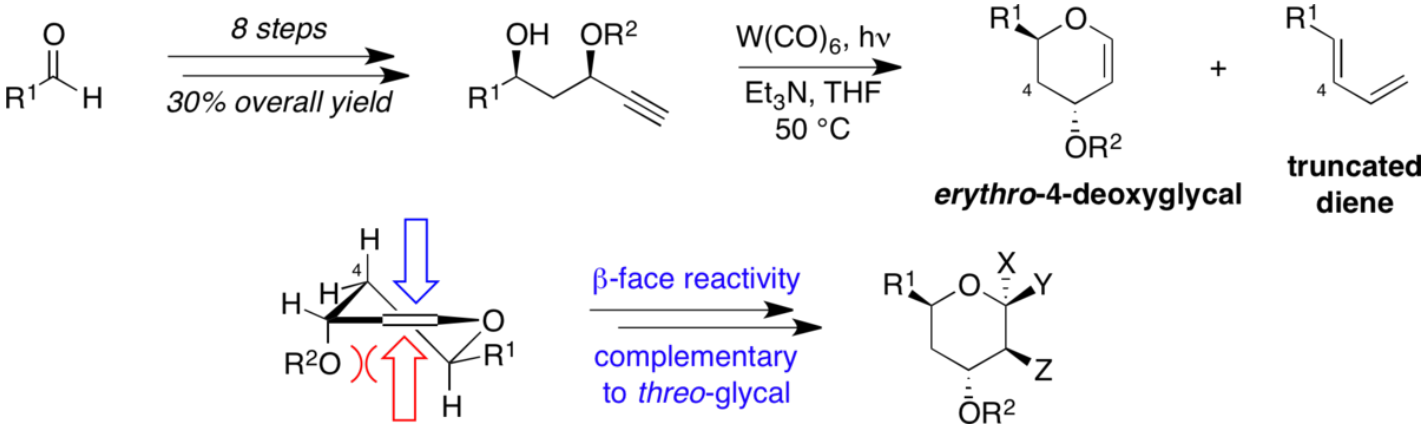
15. An acid-stable *tert*-butyldiarylsilyl (TBDAS) linker for solid-phase organic synthesis.
DiBlasi, C. M.; Macks, D. E.; Tan, D. S.* *Org. Lett.* 2005, *7*, 1777–1780.
[Abstract | PubMed]



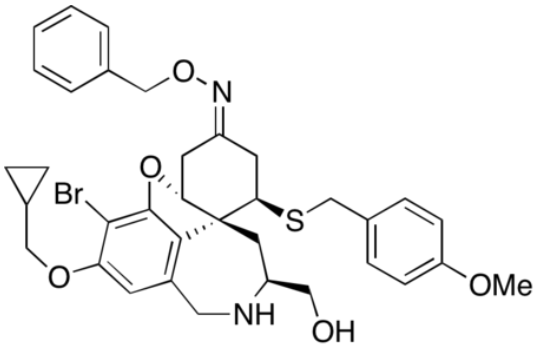


(*Highlighted in Lett. Org. Chem.* [PDF])

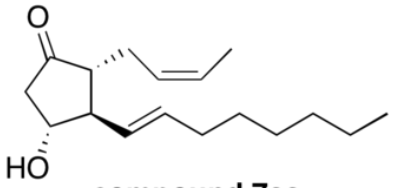
14. Enantioselective synthesis of *erythro*-4-deoxyglycals as scaffolds for target- and diversity-oriented synthesis: New insights into glycal reactivity.
Moilanen, S. B.; Tan, D. S.* *Org. Biomol. Chem.* 2005, *3*, 798–803.
[Abstract | PubMed]



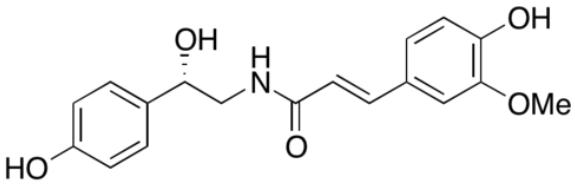
13. Current progress in natural product-like libraries for discovery screening.
Tan, D. S.* *Comb. Chem. High-Throughput Screen.* 2004, *7*, 631–643.
[Abstract | PubMed]



secramine
secretory pathway inhibitor

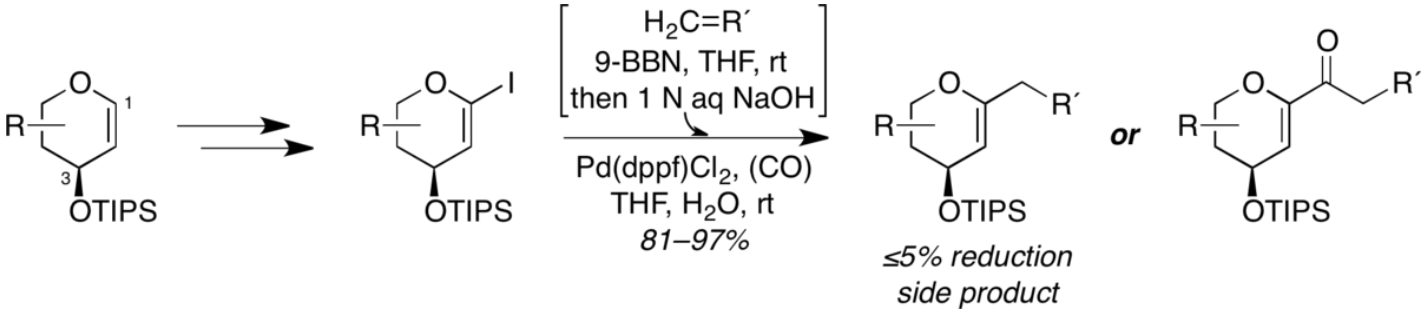


compound 7aa
CMV inhibitor



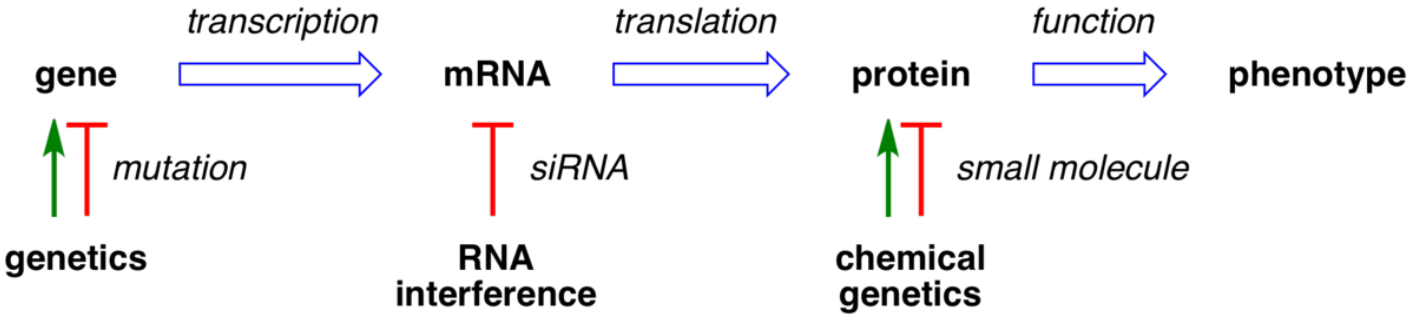
compound 13-D
selective pro-apoptotic compound

12. Synthesis of *C*1-alkyl and *C*1-acylglycals from glycals using a *B*-alkyl Suzuki–Miyaura cross coupling approach.
Potuzak, J. S.; Tan, D. S.* *Tetrahedron Lett.* 2004, *45*, 1797–1801.
[Abstract]

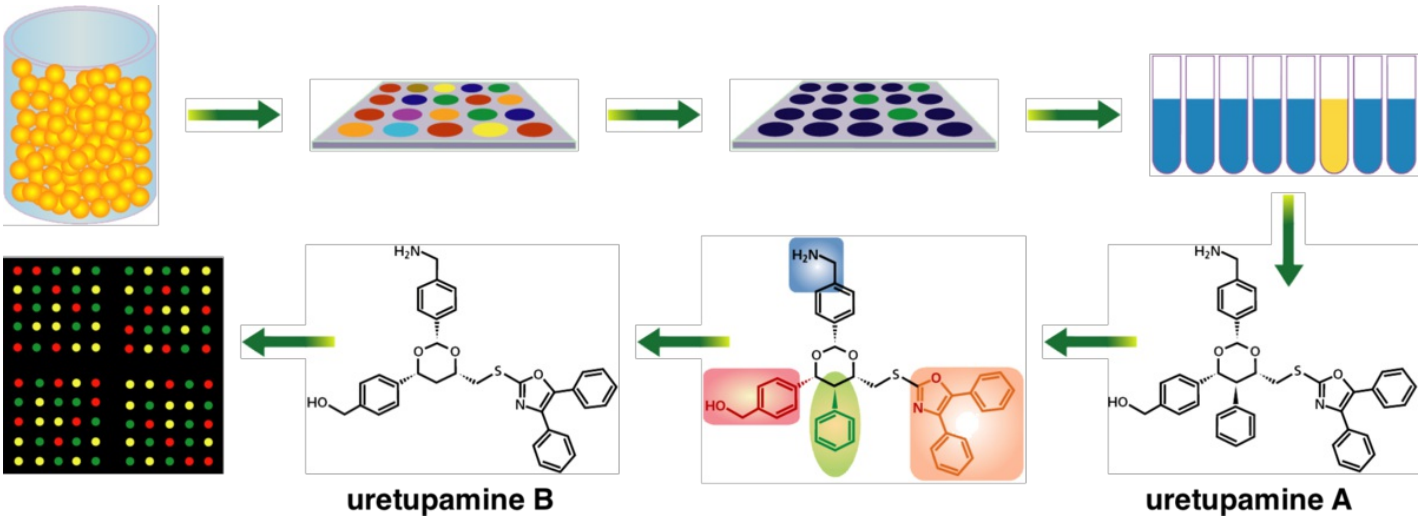


≤5% reduction side product

11. Discovery and applications of small molecule probes for studying biological processes.
Potuzak, J. S.; Moilanen, S. B.; Tan, D. S.* *Biotechnol. Genet. Eng. Rev.* 2004, *21*, 11–78.
[PDF | PubMed]

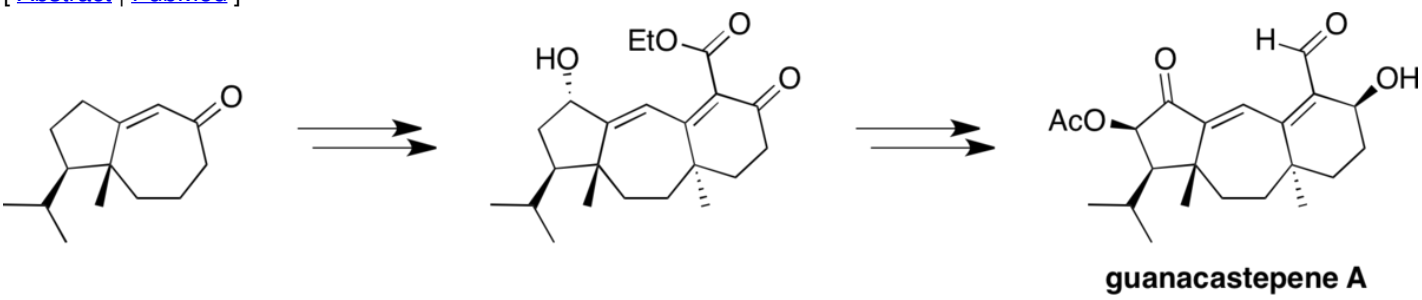


10. Sweet surrender to chemical genetics.
Tan, D. S.* *Nat. Biotechnol.* 2002, *20*, 561–563.
[Abstract | PubMed]



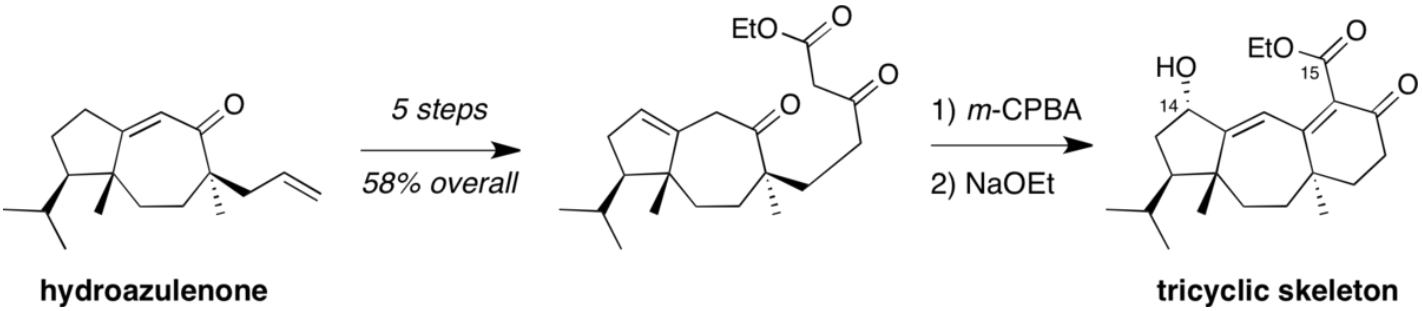
Postdoctoral Publications

9. Total synthesis of guanacastepene A: A route to enantiomeric control.
   Mandal, M.; Yun, H.; Dudley, G. B.; Lin, S.; Tan, D. S.; Danishefsky, S. J.* *J. Org. Chem.* 2005, *70*, 10619–10637.
   [Abstract | PubMed]

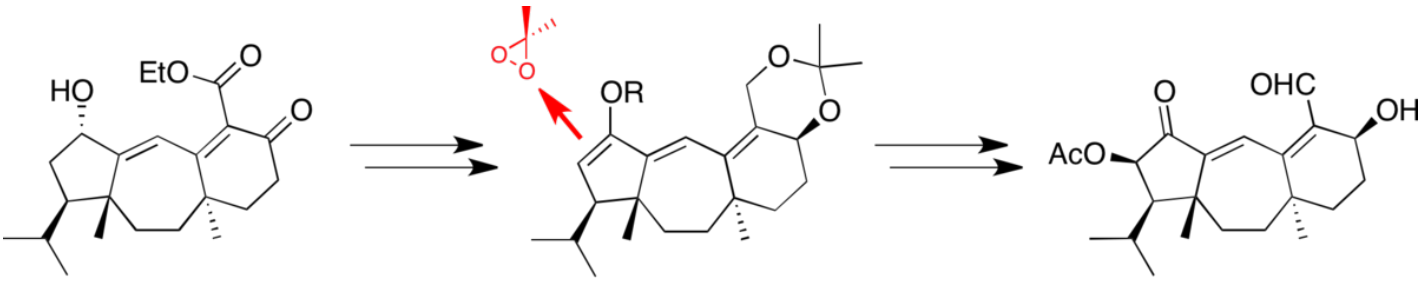


   (*Featured on the Cover*)

8. Synthesis of the functionalized tricyclic skeleton of guanacastepene A: A tandem epoxide-opening β-elimination/Knoevenagel cyclization.
   Tan, D. S.; Dudley, G. B; Danishefsky, S. J.* *Angew. Chem., Int. Ed.* 2002, *41*, 2185–2188.
   [Abstract | PubMed]

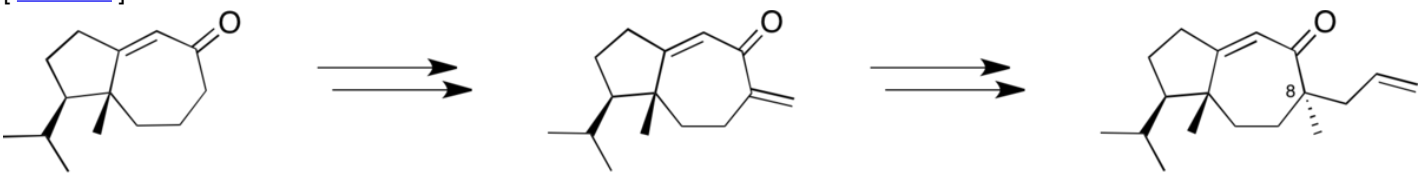


7. A stereoselective route to guanacastepene A through a surprising epoxidation.
   Lin, S.; Dudley, G. B.; Tan, D. S.; Danishefsky, S. J.* *Angew. Chem., Int. Ed.* 2002, *41*, 2188–2191.
   [Abstract | PubMed]

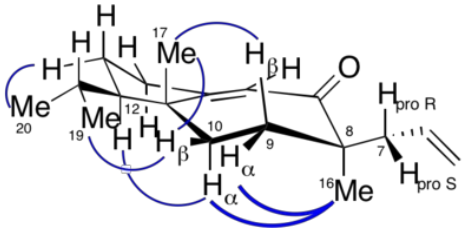


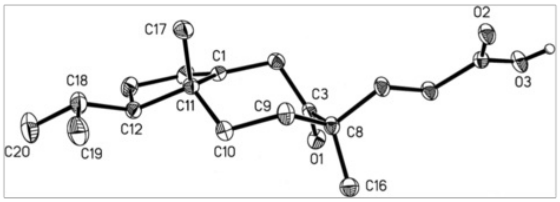
tricyclic skeleton *β-face oxidation* **guanacastepene A**

6. Remarkable stereoselectivity in the alkylation of a hydroazulenone: Progress toward the total synthesis of guanacastepene.
   Dudley, G. B.; Tan, D. S.; Kim, G.; Tanski, J. M.; Danishefsky, S. J.* *Tetrahedron Lett.* 2001, *42*, 6789–6791.
   [Abstract]



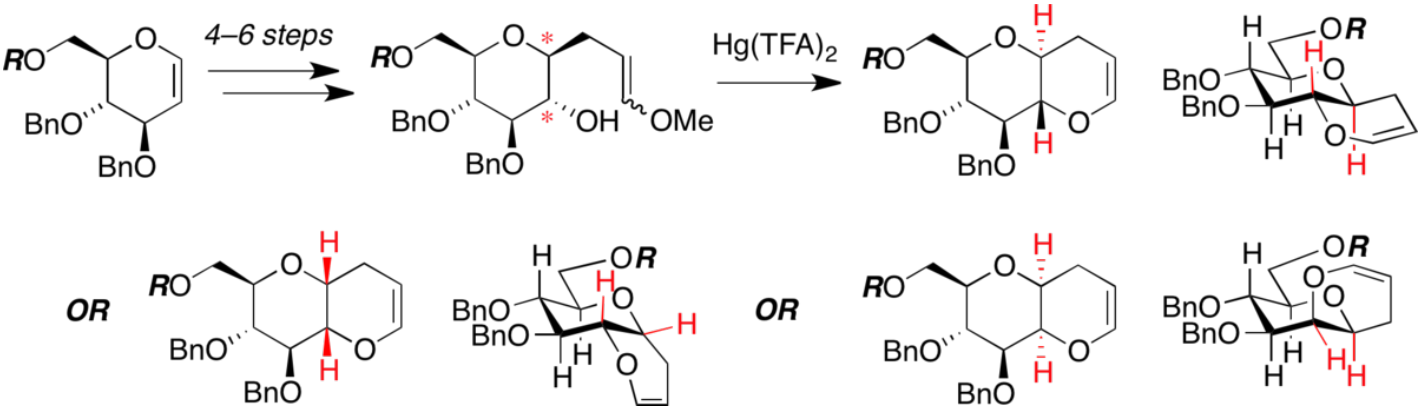
hydroazulenone *β,α-alkylation* **C8-quaternary center**



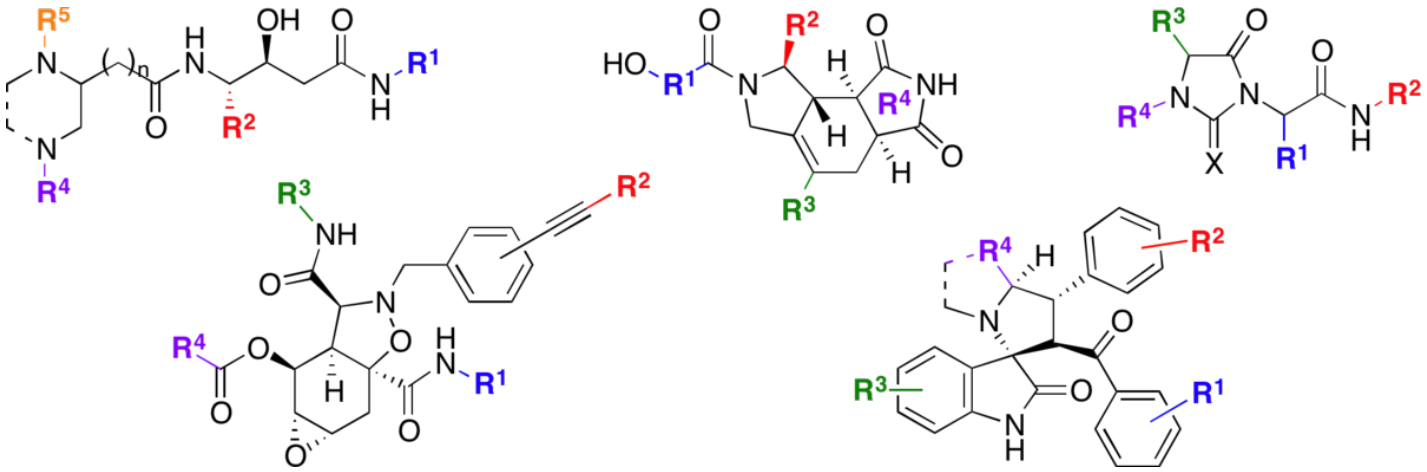


Graduate Publications

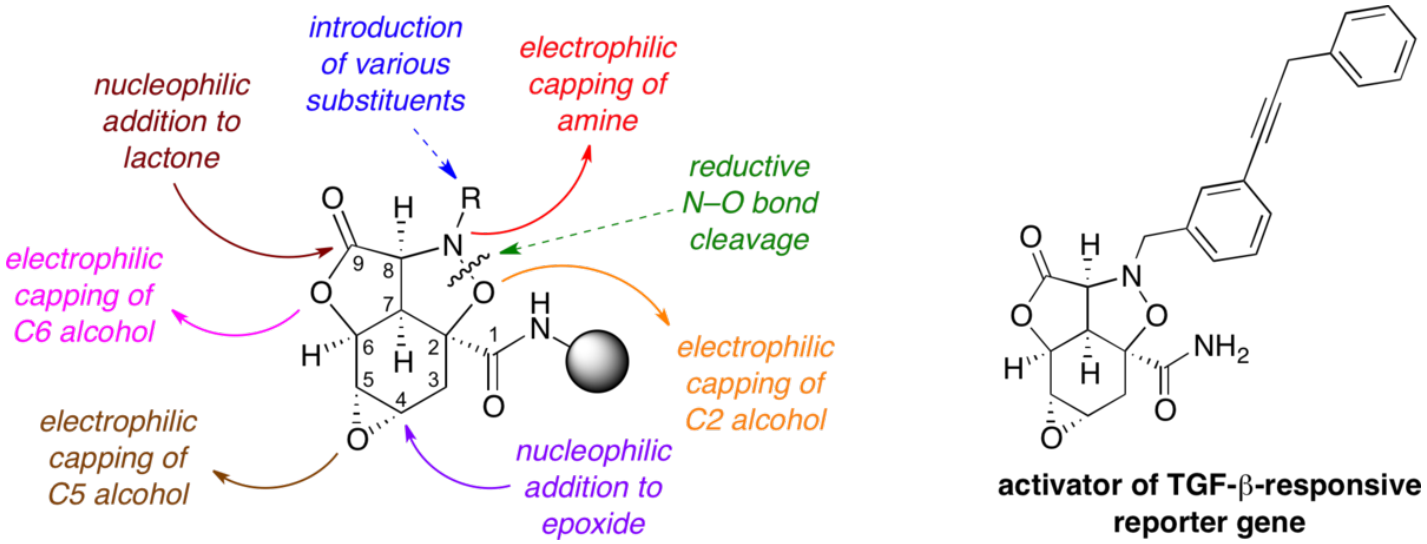
5. A mercury-catalyzed transetherification cyclization leading to fused cyclic polyethers.
   Tan, D. S.; Schreiber, S. L.* *Tetrahedron Lett.* 2000, *41*, 9509–9513.
   [Abstract]



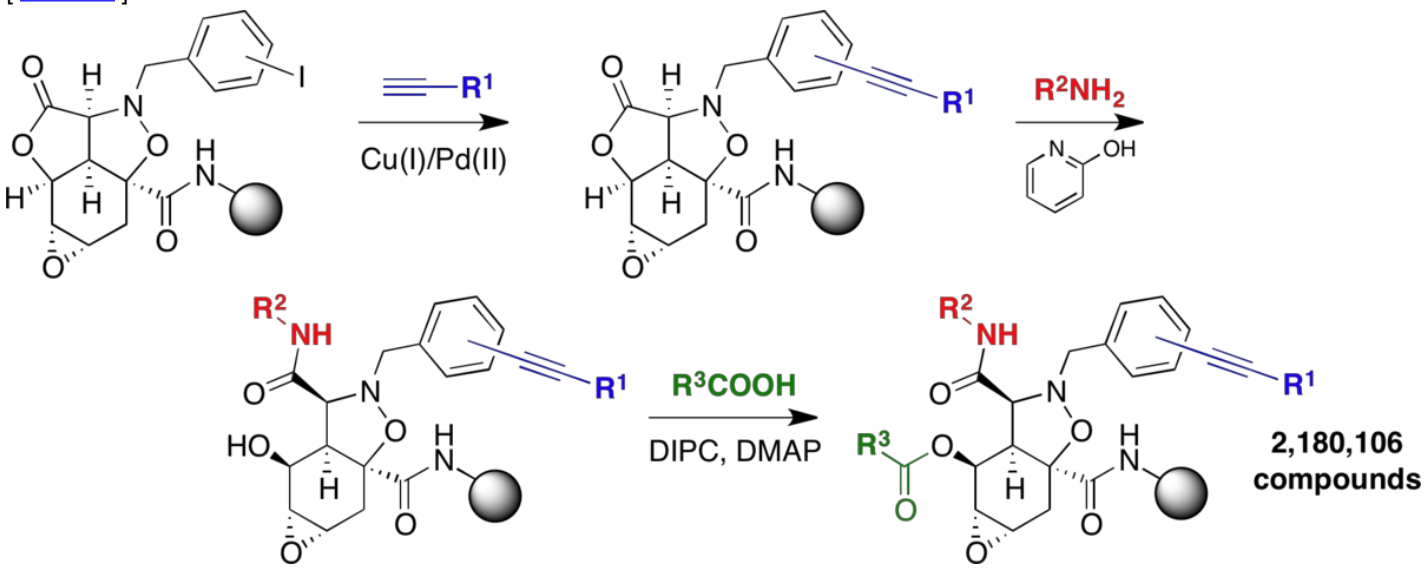
4. Ligand discovery using encoded combinatorial libraries.
   Tan, D. S.*; Burbaum, J. J.* *Curr. Opin. Drug Discovery Dev.* 2000, *3*, 439–453.
   [Abstract]



3. Synthesis and preliminary evaluation of a library of polycyclic small molecules for use in chemical genetic assays.
   Tan, D. S.; Foley, M. A.; Stockwell, B. R.; Shair, M. D.; Schreiber, S. L.* *J. Am. Chem. Soc.* 1999, *121*, 9073–9087.
   [Abstract]



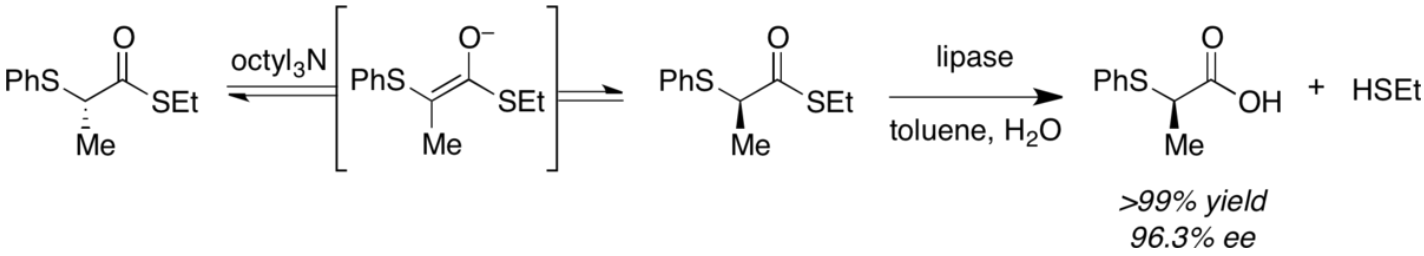
2. Stereoselective synthesis of over two million compounds having structural features both reminiscent of natural products and compatible with miniaturized cell-based assays.
   Tan, D. S.; Foley, M. A.; Shair, M. D.; Schreiber, S. L.* *J. Am. Chem. Soc.* 1998, *120*, 8565–8566.
   [Abstract]



(*Highlighted in Science, Chem. Eng. News.*)

Undergraduate Publication

1. Enzymatic resolution coupled with substrate racemization using a thioester substrate.
   Tan, D. S.; Günter, M. M.; Drueckhammer, D. G.* *J. Am. Chem. Soc.* 1995, *117*, 9093–9094.
   [Abstract]



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