Accounts of Chemical Research	87	Quang Luu-Nguyen
ACS Central Science	87	Colin McKinlay
ACS Chemical Biology	**MOOK**	Clayton Hardman
ACS Nano	88	Nancy Benner
Advanced Drug Delivery Reviews	N/A	N/A
Angewandte Chemie International Edition	N/A	N/A
Bioconjugate Chemistry	N/A	N/A
Biomacromolecules	88	Nancy Benner
Bioorganic and Medicinal Chemistry	N/A	N/A
Bioorganic and Medicinal Chemistry Letters	89	Katie Near
Chemical Communications	90	Katie Near
Chemical & Engineering News	N/A	Colin McKinlay
Chemical Reviews	**MOOK**	Jefferson Tyler
Chemical Science	90	Jack Sloane
Chemistry, A European Journal	**MOOK**	Clayton Hardman
European Journal of Organic Chemistry	91	Jack Sloane
Journal of the American Chemical Society	92	Melanie Huttner (odd)
		Akira Shimizu (even)
JAMA	94	Stephen Ho
Journal of Medicinal Chemistry	N/A	N/A
Journal of Organic Chemistry	N/A	N/A
Molecular Pharmaceutics	94	Xiaoyu Zang (Janice)
Natural Product Reports	95	Nancy Benner
Nature	95	Stephen Ho
Nature Chemistry	96	Stephen Ho
Nature Chemical Biology	97	Xiaoyu Zang (Janice)
New England Journal of Medicine	97	Stephen Ho
The New York Times	N/A	N/A
The Onion	N/A	N/A
Organic Letters	98	Quang Luu-Nguyen
Organometallics	N/A	N/A
PNAS	98	Colin McKinlay
Science	99	Xiaoyu Zang (Janice)
Science Translational Medicine	**MOOK**	Jefferson Tyler
Synlett	N/A	N/A
Synthesis	N/A	N/A
Tetrahedron	N/A	N/A
Tetrahedron Letters	N/A	N/A

Next Due Date: Tuesday, August 17, 2017

Identify articles to abstract in the journals you have been assigned. Try to pick things that the group (or specific subgroups) would like to read or should be aware of. This does not need to be limited to chemistry! If you encounter interesting pieces of media elsewhere (The Economist being a recent example) don't hesitate to let the group know. If you are splitting a journal with another group member, talk with him/her to be sure you are not reviewing redundantly. If you are not able to cover your journal for some reason, get someone to cover it for you—as if it were your group job.

Create an Abstract

Abstract submissions are usually prepared using ChemDraw. The editors of the *Lit Review* strongly encourage the copying of graphical material from PDF files and wish to point out the following. Graphics stored in PDF files are typically of postscript or >300 dpi quality. When an image is copied into a ChemDraw document, a screen snapshot is taken, and the image is captured at the present screen resolution. If the PDF file is being viewed zoomed-in, this typically results in the transfer of a high quality image. If the PDF is being viewed zoomed-out, a low quality image typically results. Text can be copied from a PDF file and pasted as text using the text select or column select tool. Once pasted, this text behaves as if it were input from the keyboard.

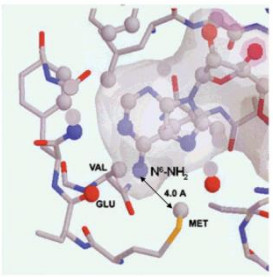
Include a brief textual summary of the article; an example of a completed abstract is shown below. The list of topics and subgroups on the right is useful to highlight which subgroups should pay attention to your abstract and roughly what kind of chemistry the article contains.

Please email the files to knear@stanford.edu. Late abstracts will be included in the Lit Review for the following month**. PCs please send .cdx and macs please send .pdf files.**

Citation: Abeyweera, T.P.; Rotenberg, S.A. *Biochemistry* **2007**, *46*, 2364-2370

Design and Characterization of a Traceable Protein Kinase C-alpha

Protein kinase CR (PKCR) is a critical component of pathways that govern cancer-related phenotypes such as invasion and proliferation. Proteins that serve as immediate substrates for PKCR offer potential targets for anticancer drug design. To identify specific substrates, a mutant of PKCR (M417A) was constructed at the ATP binding site such that it could bind a sterically large ATP analogue derivatized through the N6 amino group of adenosine (1ç-32Pl-N6-phenyl-ATP). Because this analogue could be utilized by the mutant kinase but not by wild-type PKCR (or presumably other protein kinase) to phosphorylate peptide or protein substrates, 32P-labeled products were the direct result of the mutant PKCR.



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Citation: Dictionary.com (search term = "mook")

For those of you who always wanted to know what it meant....

mook **Pronunciation Key** (mk) *n. Slang*

An insignificant or contemptible person.

methods
synthesis

DON'T BE A MOOK!

Lit Review MOOKS include those who:

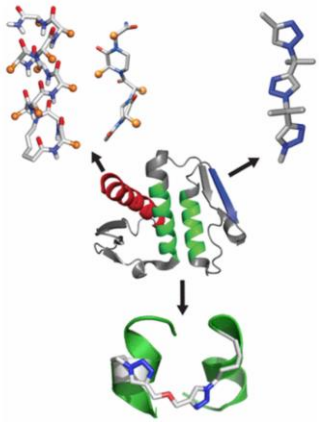
- fail to submit their abstracts in a timely fashion (or at all), or
- claim there was nothing to abstract in *JACS*, *JOC*, *Org. Lett.*, etc.

Penalties for being a Lit Review MOOK:

- You will get last choice when it's time to pick new journals.

Citation: Sawyer, N.; Watkins, A. M.; Arora, P. S.; *Acc. Chem. Res.* **2017**, *50*(6), 1313-1322

Protein Domain Mimics as Modulators of Protein –Protein Interactions



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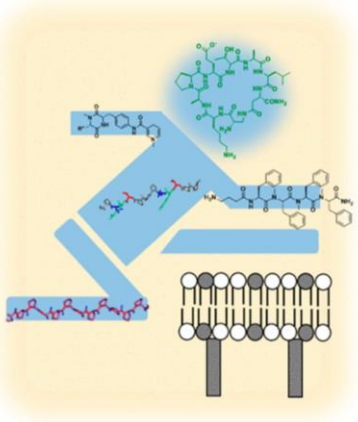
Drug Deliv.
Prostratin

Citation: Sanchez-Navarro, M.; Teixido, M.; Giralt, E.; *Acc. Chem. Res.* **2017**, *ASAP*

Jumping Hurdles: Peptides Able To Overcome Biological Barriers



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Citation: ACS Cent. Sci. 2017, 3 (5), 449–453 DOI: 10.1021/acscentsci.7b00080.

Epidithiodiketopiperazines: Strain-Promoted Thiol-Mediated Cellular Uptake at the Highest Tension

bioorganic
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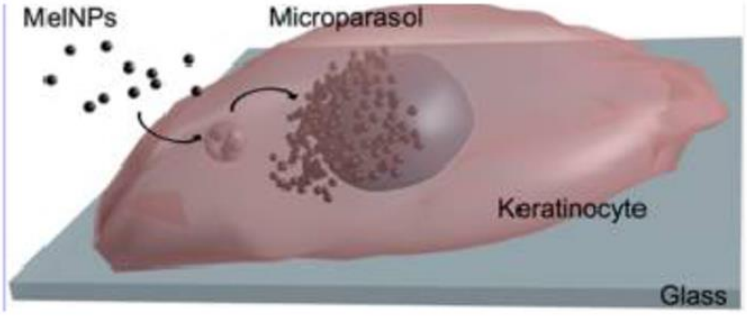
Citation: ACS Cent. Sci. 2017, 3 (6), 564–569 DOI: 10.1021/acscentsci.6b00230.

Mimicking Melanosomes: Polydopamine Nanoparticles as Artificial Microparasols



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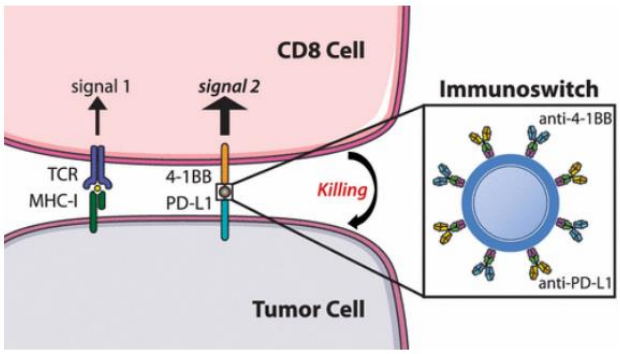
Citation: Kosmides, A. et al. *ACS Nano,* **2017**, *11 (6)* 5417-5429

Dual Targeting Nanoparticle Stimulates the Immune System To Inhibit Tumor Growth



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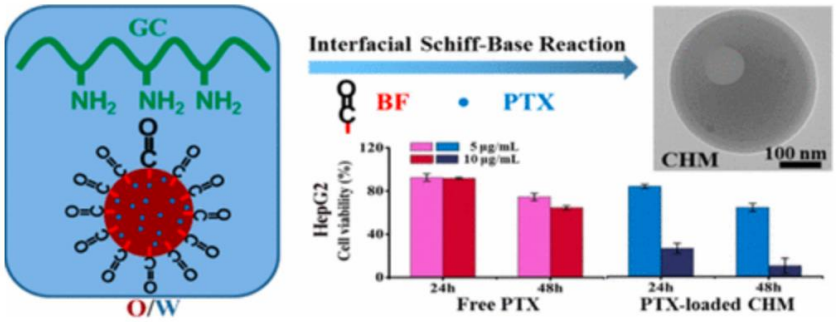
Citation: Fu, Y. et al. *Biomacromolecules,* **2017**, *18 (7)* 2194-2204

Adaptive Chitosan Hollow Microspheres as Efficient Drug Carrier



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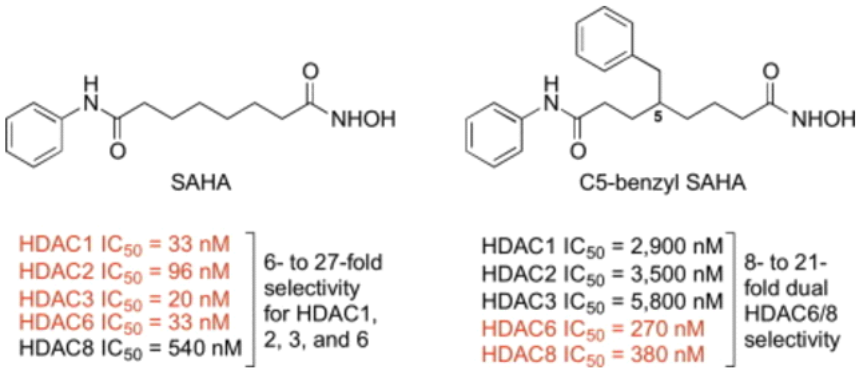
Citation: Negmeldin, A. T.; Pflum, M. K. H. *Bioorg. Med. Chem. Lett.* **2017**, *27*, 3254.

The structural requirements of histone deacetylase inhibitors: SAHA analogs modified at the C5 position display dual HDAC6/8 selectivity



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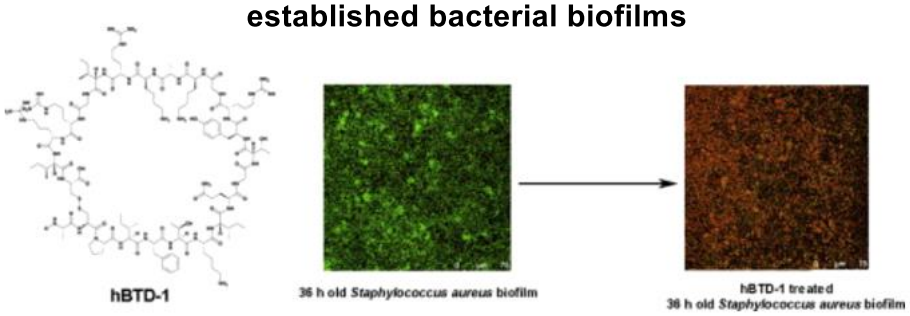
Citation: Mathew, B.; *et al*. *Bioorg. Med. Chem. Lett.* **2017**, *27*, 3264.

Chimeric analogs of human ß-defensin 1 and θ-defensin disrupt pre-established bacterial biofilms



Linear and linear fatty acylated analogs did not show any activity while disulfide constrained analogs disrupted pre-established S. aureus biofilms. Chimeric analogs of human ß-defensin 1 and θ-defensin were highly active against S. aureus biofilms. Only the d-enantiomer [d]hBTD-1 of the chimeric analog showed activity against E. coli biofilm.

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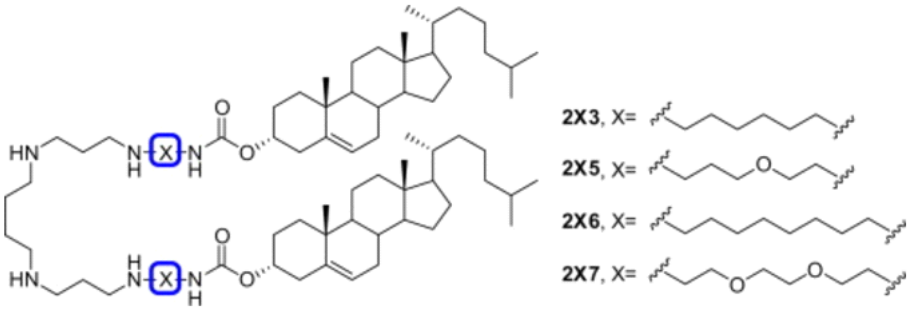
Citation: Puchkov, P. A.; *et al*.. *Bioorg. Med. Chem. Lett.* **2017**, *27*, 3284.

Spacer structure and hydrophobicity influences transfection activity of novel polycationic gemini amphiphiles



Cationic liposomes formed by these amphiphiles and the helper lipid DOPE were able to successfully condense DNA. Transfection activity of the liposomes was superior to Lipofectamine® 2000 and was dependent on spacer structure, hydrophobicity, and nucleic acid type (pDNA or siRNA).

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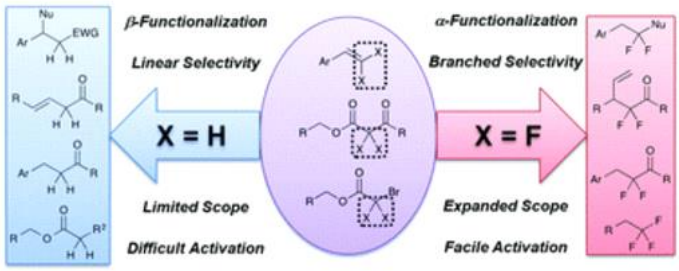
Citation: Orsi, D. L.; Altman, R. A.. *Chem Commun.* **2017**, *53,* 7168.

Exploiting the unusual effects of fluorine in methodology



The authors highlight the non-standard chemo- and regio-selectivities imparted by fluorinated substrates on Pd-catalyzed coupling reactions, nucleophilic addition reactions of olefins, and Cu-catalyzed decarboxylative fluoroalkylation reactions.

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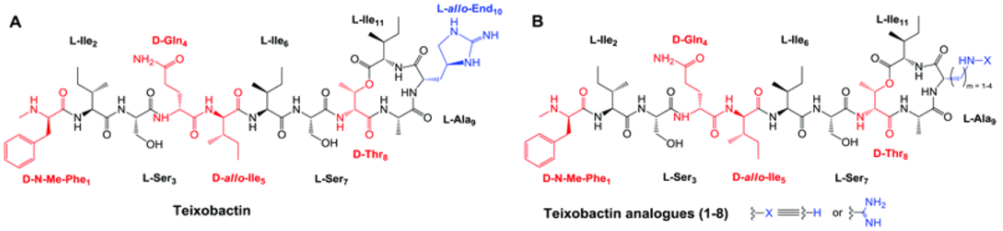
Citation: Parmar, A.; *et al. Chem Commun.* **2017**, *53,* 7788.

Syntheses of potent teixobactin analogues against methicillin-resistant Staphylococcus aureus (MRSA) through the replacement of L-allo-enduracididine with its isosteres



The authors conclude that amino acids which are the closest isosteres of L-allo-enduracididine are the key to synthesising simplified potent analogues of teixobactin using rapid syntheses and improved yields.

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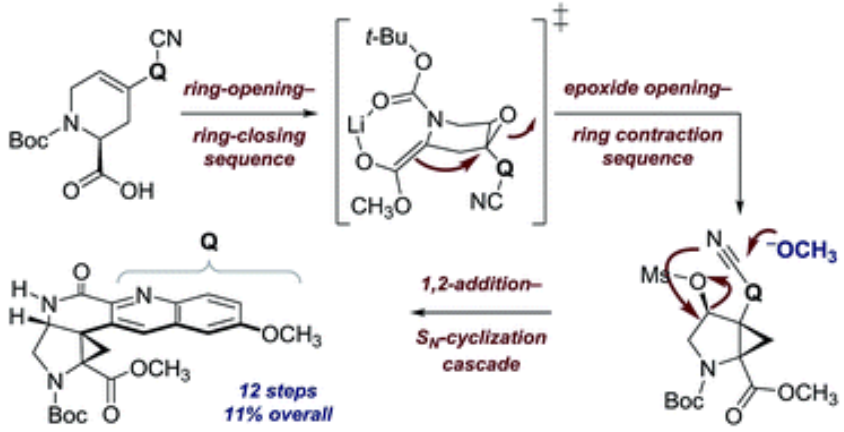
Citation: Nikolayevskiy, H..; et al. *Chem. Sci.* **2017**, 8, 4876

A complex stereochemical relay approach to the antimalarial alkaloid ocimide A_1. Evidence for a structural revision



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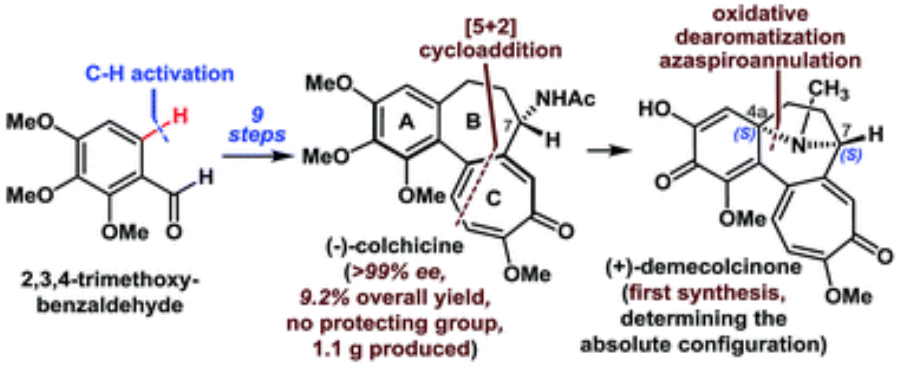
Citation: Chen, B.; et al. *Chem. Sci.* **2017**, 8, 4961

Enantioselective total synthesis of (-)-colchicine, (+)-demecolcinone and metacolchicine: determination of the absolute configurations of the latter two alkaloids



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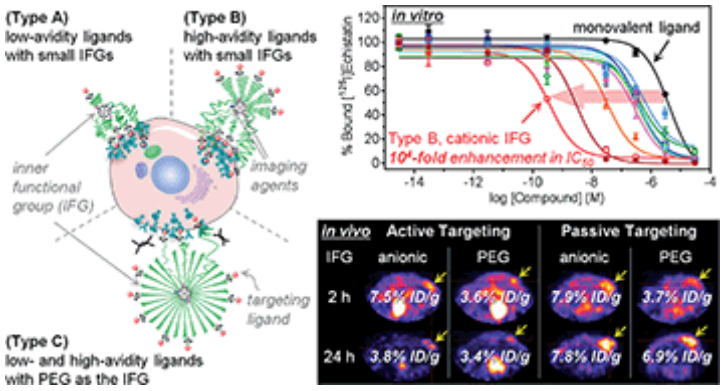
Citation: Heo, J. Y.; et al. *Chem. Sci.* **2017**, 8, 5186

Toward redesigning the PEG surface of nanocarrier for tumor targeting: impact of inner functionalities on size, charge, multivalent binding and biodistribution



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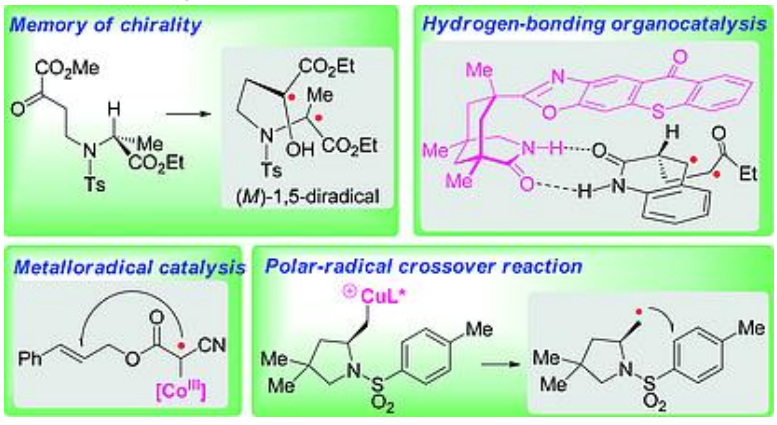
Citation: Miyabe, H. et al. *Eur. J. Org. Chem.* **2017**, 23, 3302

Unique Strategies for Controlling Enantioselective Stereochemistry of Cyclizations via Radical Intermediates



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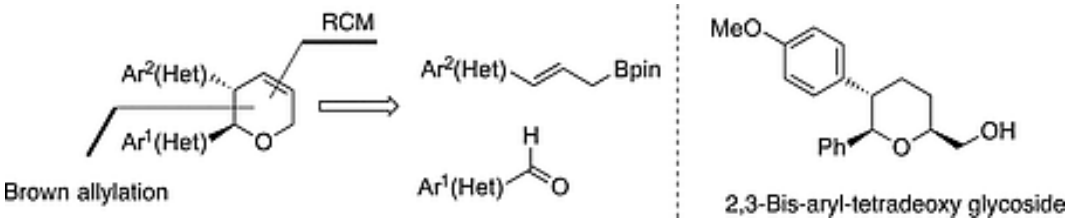
Citation: Nocquet, P-A. et al. *Eur. J. Org. Chem.* **2017**, 23, 3343

Diastereoselective Synthesis of *trans*-2,3-Diaryl(heteroaryl)-3,6-dihydropyrans by an Allylboration/Ring-Closing-Metathesis Sequence



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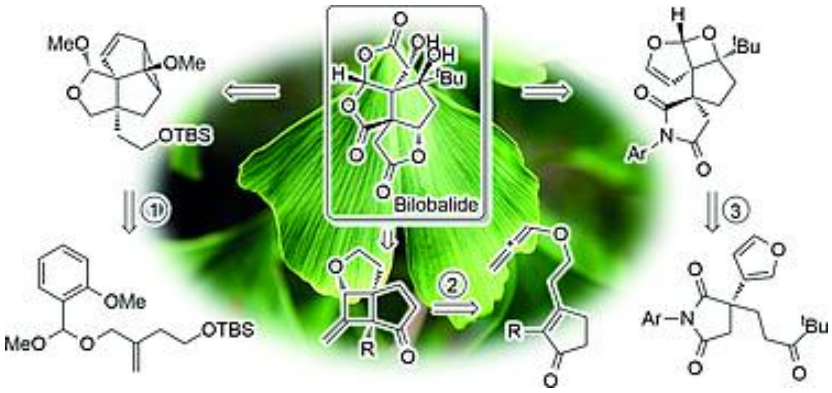
Citation: Emsermann, J. et al. *Eur. J. Org. Chem.* **2017**, 23, 3362

Photochemical Approaches to the Bilobalide Core



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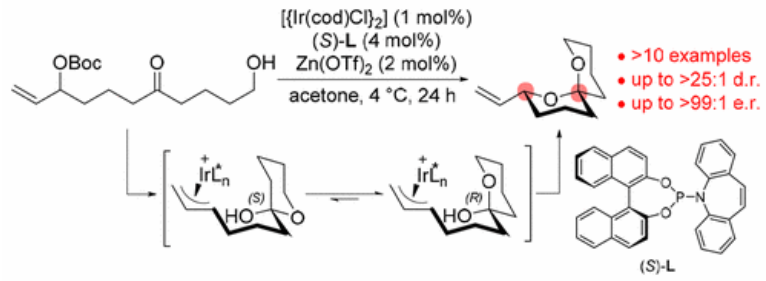
Citation: James Y. Hamilton, Simon L. Rössler, and Erick M. Carreira
Journal of the American Chemical Society 2017 139 (24), 8082-8085

Enantio- and Diastereoselective Spiroketalization Catalyzed by Chiral Iridium Complex



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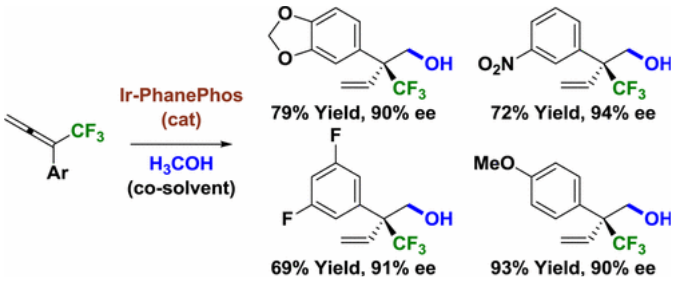
Citation: Michael Holmes, Khoa D. Nguyen, Leyah A. Schwartz, Tom Luong, and Michael J. Krische
Journal of the American Chemical Society 2017 139 (24), 8114-8117

Enantioselective Formation of CF3-Bearing All-Carbon Quaternary Stereocenters via C–H Functionalization of Methanol: Iridium Catalyzed Allene Hydrohydroxymethylation



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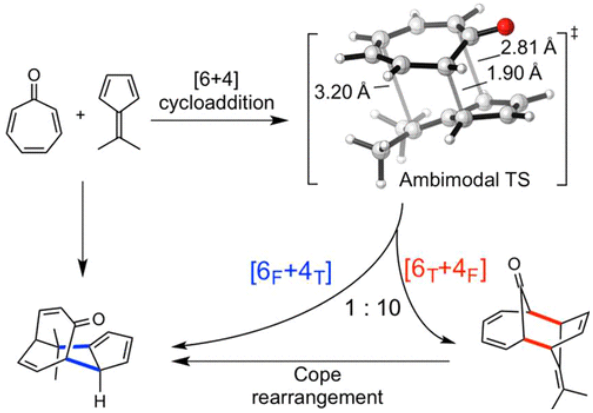
Citation: Peiyuan Yu, Tiffany Q. Chen, Zhongyue Yang, Cyndi Qixin He, Ashay Patel, Yu-hong Lam, Ching-Yang Liu, and K. N. Houk *JACS* 2017 139 (24), 8251-8258

Mechanisms and Origins of Periselectivity of the Ambimodal [6 + 4] Cycloadditions of Tropone to Dimethylfulvene



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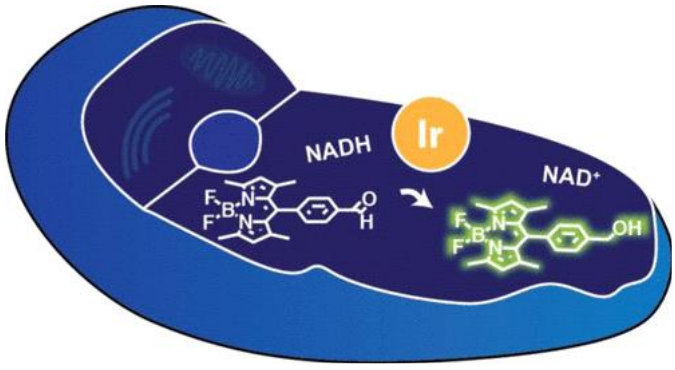
Citation: Sohini Bose, Anh H. Ngo, and Loi H. Do
Journal of the American Chemical Society 2017 139 (26), 8792-8795

Intracellular Transfer Hydrogenation Mediated by Unprotected Organoiridium Catalysts



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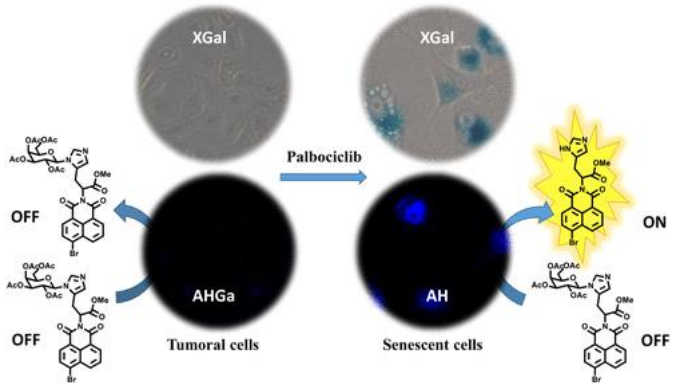
Citation: Beatriz Lozano-Torres, Irene Galiana, Félix Sancenón et al. Journal of the American Chemical Society 2017 139 (26), 8808-8811

An OFF–ON Two-Photon Fluorescent Probe for Tracking Cell Senescence in Vivo



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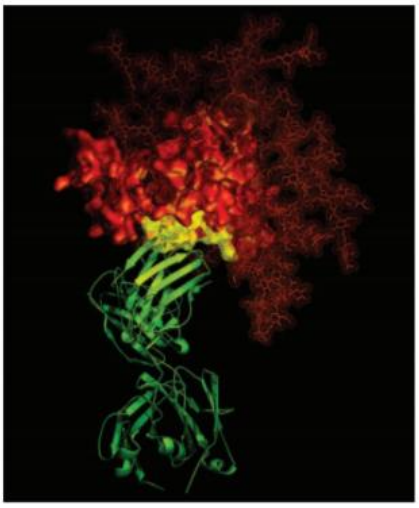
Citation: *JAMA.* 2017;317(24):2475. doi:10.1001/jama.2017.7352

Hunt for an HIV Vaccine Intensifies



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Citation: Oswald, et *al. Mor. Pharm.* **2017,** *14*, 2177-2196

Targeting the Central Nervous System (CNS): A Review of Rabies Virus-Targeting Strategies

The transport of drugs across the blood¨Cbrain barrier is challenging. The use of peptide sequences derived from viruses with a central nervous system (CNS) tropism is one elegant option. A prominent example is the rabies virus glycopeptide-29 (RVG-29), which is said to enable a targeted brain delivery. Although the entry mechanism of the rabies virus into the CNS is very well characterized, it is unknown whether RVG-29-functionalized drug delivery systems (DDSs) follow this pathway. RVG-29-functionalized DDSs present themselves with modifications of the RVG-29 peptide sequence and different physicochemical properties compared to the rabies virus. To our surprise, the impact of these changes on the functionality is completely neglected. This review explores virus-related CNS-targeting strategies by comparing RVG-29-functionalized DDSs with regard to their peptide modification, physiochemical properties and their behavior in cell culture studies with a special focus on the original pathway of rabies virus entry into the CNS.

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Citation: Sahoo, et *al.* *Mor. Pharm.* **2016,** *14,* 2224-2235

Efficient Codelivery of Paclitaxel and Curcumin by Novel Bottlebrush Copolymer-based Micelles

A critical knowledge gap is whether attaching drug-encapsulated nanoparticles (NPs) to GPA and modification with cell-penetrating peptide (CPP) will impact binding, oxygenation, and the induction of cellular stress. The objective of this study was to formulate copolymer-based NPs containing model fluorescent-tagged bovine serum albumin (BSA) with GPA-specific targeting ligands such as ERY1 (ENPs), single-chain variable antibody (scFv TER-119, SNPs), and low-molecular-weight protamine-based CPP (LNPs) and to determine their biocompatibility using a variety of complementary high-throughput in vitro assays. Experiments were conducted by coincubating NPs with RBCs at body temperature. Data suggested that LNPs effectively targeted RBCs, conferring 2-fold greater uptake in RBCs compared to ENPs and SNPs. Under the conditions tested, our data demonstrates that molecular targeting of the RBC membrane is a feasible translational strategy for improving drug pharmacokinetics and that the proposed high-throughput assays can prescreen diverse NPs for preclinical and clinical biocompatibility.

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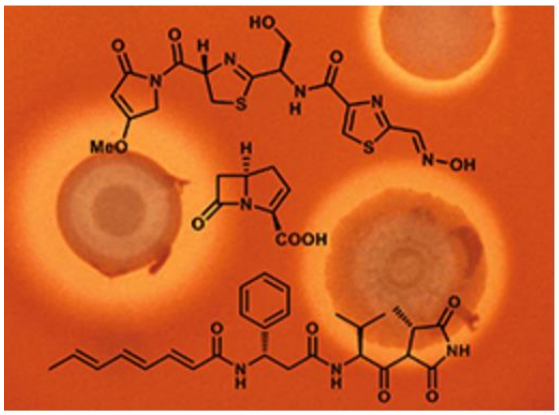
Citation: Masschelein, O. et al. *Nat. Prod. Rep.*, **2017**, 34, 712-783

Antibiotics from Gram-negative bacteria: a comprehensive overview and selected biosynthetic highlights



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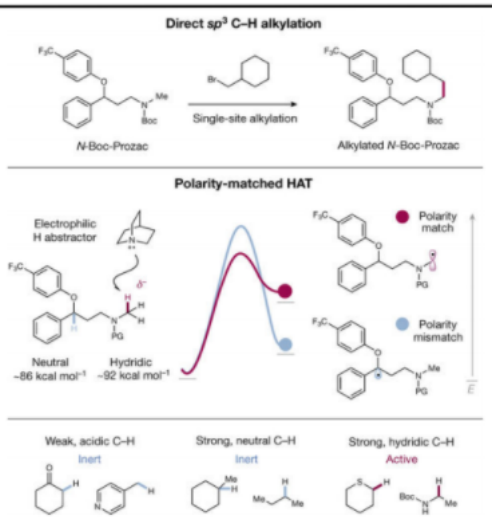
Prostratin

Citation: *Nature* **547**, 79–83 (06 July 2017) doi:10.1038/nature22813

Selective sp^3 C–H alkylation via polarity-match-based cross-coupling



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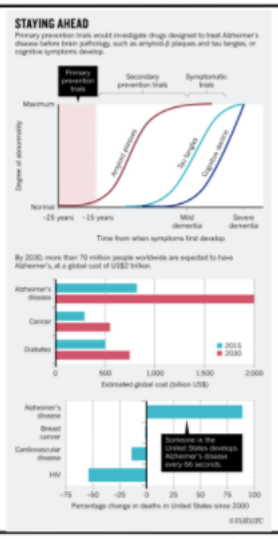
Citation: *Nature* **547,** 153–155 (13 July 2017) doi:10.1038/547153a

Stop Alzheimer's before it starts



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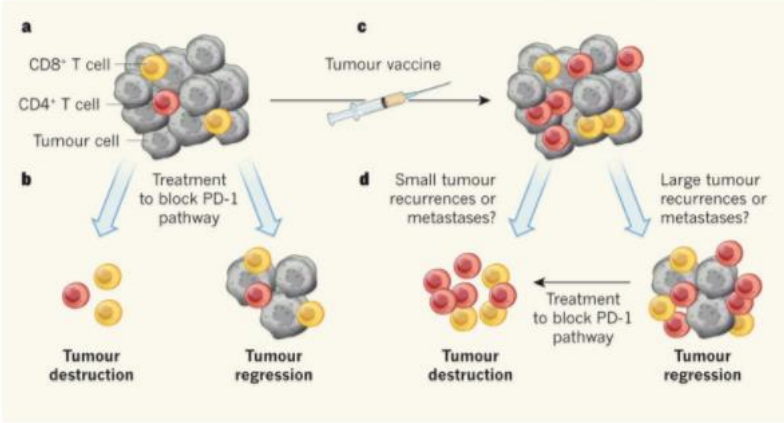
Citation: *Nature* **547**, 165–167 (13 July 2017) doi:10.1038/nature23093

Cancer: Precision T-cell therapy targets tumours



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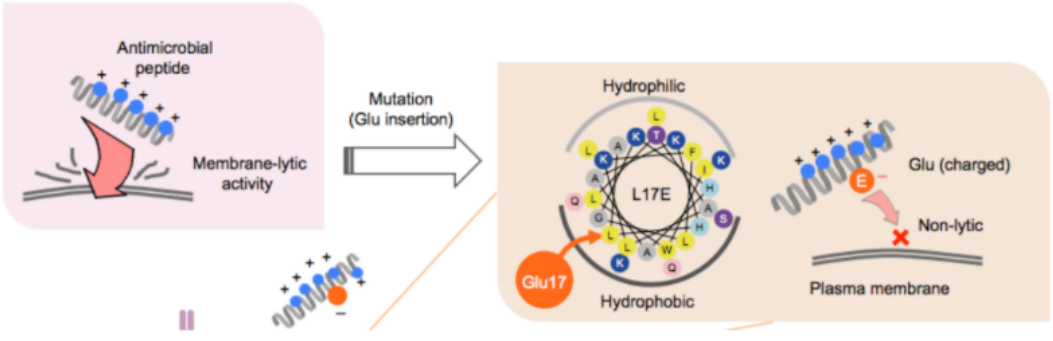
Citation: *Nature Chemistry* (2017) doi:10.1038/nchem.2779

Cytosolic antibody delivery by lipid-sensitive endosomolytic peptide



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Citation: Clarke, A.J.. *Nat. Chem. Bio.* **2017,** *13, 695-696*

Peptidoglycan: Another brick in the wal

Lipid II embodies the bricks used to build the essential bacterial cell wall component peptidoglycan. A facile new procedure for preparation of species-specific Lipid II in high yields can now be used to unlock the door to antibiotic discovery. The availability of Lipid II from a target bacterium permits the direct biochemical characterization of species-specific penicillin-binding proteins (PBPs), the enzymes that insert these bricks into the existing wall and that are targeted by ¦Â-lactam antibiotics

As noted by Qiao et al.2, previous investigators have developed chemical, chemoenzymatic, and biosynthetic routes to species-specific variants of Lipid II, but laborious efforts have been rewarded with low yields. To demonstrate the applicability of their protocol, Qiao et al.2 describe a transpeptidase assay that was used to directly test the inhibition of a class A PBP from Staphylococcus aureus by various ¦Â-lactams (Fig. 1b). This direct assay can be used to provide full biochemical characterization of the transpeptidases and potentially to identify other classes of inhibitors.

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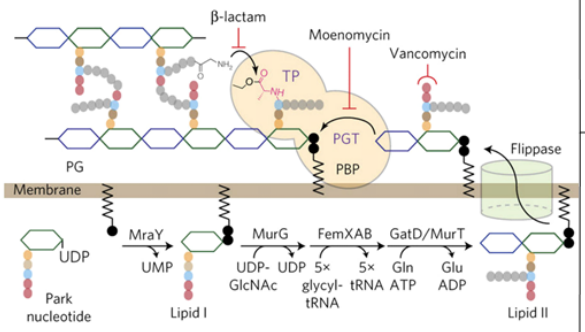
Citation: Qiao, et al. *Nat. Chem. Bio.* **2017,** *13,* 793-798

Lipid II overproduction allows direct assay of transpeptidase inhibition by beta-lactams

We demonstrate the utility of this strategy by isolating Staphylococcus aureus Lipid II and reconstituting the synthesis of crosslinked peptidoglycan by the essential penicillin-binding protein 2 (PBP2), which catalyzes both glycan polymerization and transpeptidation. We also show that we can compare the potencies of different ¦Â-lactams by directly monitoring transpeptidase inhibition. The methods reported here will enable a better understanding of cell wall biosynthesis and facilitate studies of next-generation transpeptidase inhibitors.



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Citation: ***NEJM*** **June 23, 2017DOI: 10.1056/NEJMoa1614359**

Midostaurin plus Chemotherapy for Acute Myeloid Leukemia with a *FLT3* Mutation

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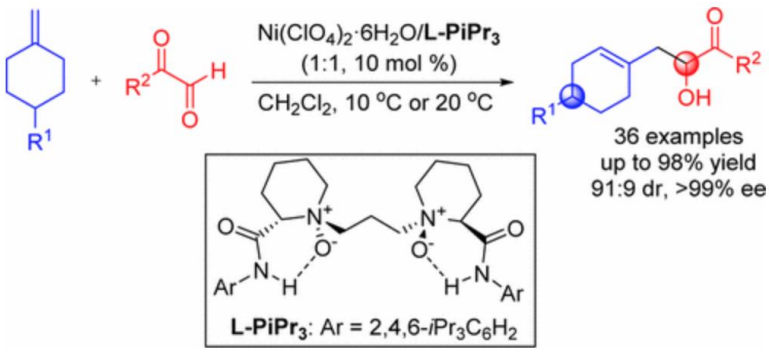
Citation: Luo *et al. Org. Lett.* **2017**, *19*(13), 3374-3377

Construction of Distant Stereocenters by Enantioselective Desymmetrizing Carbonyl–Ene Reaction



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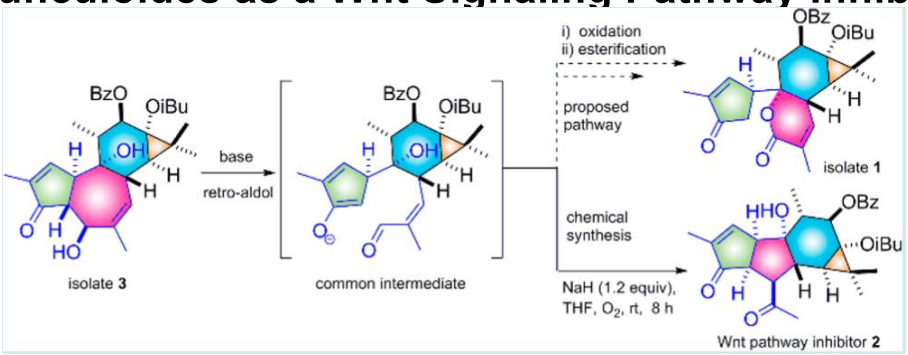
Citation: Wang *et al. Org. Lett.* **2017**, *ASAP*

Natural and Semisynthetic Tigliane Diterpenoids with New Carbon Skeletons from Euphorbia dracunculoides as a Wnt Signaling Pathway Inhibitor



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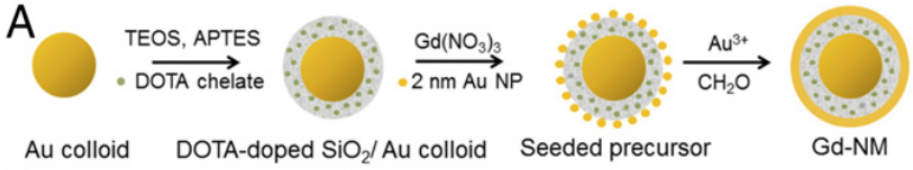
Citation: PNAS 2017, 114 (27), 6960–6965 DOI: 10.1073/pnas.1701944114.

Enhancing T1 magnetic resonance imaging contrast with internalized gadolinium(III) in a multilayer nanoparticle



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Citation: Servick, K. *Science.* **2017,** *356*, 1219

Texas signals support for unproven stem cell therapies

Texas last week signaled its defiance of the federal government over unproven stem cell therapies, which are widely offered in the state for conditions including joint damage, diabetes, and neurodegenerative illnesses. A bill signed by Governor Greg Abbott allows clinics and companies in the state to offer the experimental treatments without the testing and approval required under federal law, provided they are recommended and delivered by a physician, and performed at a hospital or medical center with oversight from an institutional review board. Now, bioethicists and patient advocates wonder whether the state's official blessing will simply maintain the status quo, embolden clinics already profiting from potentially risky therapies, or¡[a]perhaps¡[a]tighten certain protections for patients.

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Citation: Sutter, *et al. Science.* **2017,** *356*, 1293-1297.

Assembly principles and structure of a 6.5-MDa bacterial microcompartment shell

Bacterial microcompartments are to bacteria what membrane-bound organelles are to eukaryotic cells. They are specialized subcellular compartments for colocalizing enzymes to enhance reaction rates, protect sensitive proteins, and sequester toxic intermediates. Sutter et al. determined the atomic-resolution structure of a complete 6.5-megadalton bacterial microcompartment shell. The shell is composed of hundreds of copies of five distinct proteins that form hexamers, pentamers, and three types of trimers. The assembly principles revealed by the structure provide the basis to rationally manipulate self-assembly in native and engineered systems and could help, for example, in the design of subcellular nanoreactors.

The shell sequesters enzymatic reactions from the cytosol, analogous to the lipid-based membrane of eukaryotic organelles.

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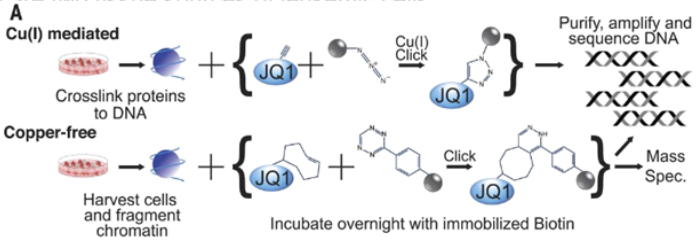
Citation: Tyler, et al. *Science.* **2017,** 356, 1397-1401

Click chemistry enables preclinical evaluation of targeted epigenetic therapies

Drugs that show promise in preclinical models often fail in the clinic, in part because of limited information on drug localization within cells and across tissues. In a proof-of-concept study, Tyler et al. applied click chemistry methods to study the localization of bromodomain inhibitors. These are cancer drugs that alter chromatin structure and gene expression. Clickable derivatives of the drugs localized within chromatin and showed that the drugs exhibit distinct modes of binding at responsive and unresponsive genes. In a mouse leukemia model, the click-probes revealed that the drugs accumulate to different extents in the spleen and bone marrow, which are two tissue sources of leukemic cells.



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Citation: Yuan, P. *Science.* **2017,** ***35***6, 1406

Extraordinary and poor - by a Stanford Postdoc

I understand that being a consultant or scientist in industry can be rewarding. But I stubbornly believe in the work I do and can't imagine doing anything else. So, for now, at least, I will continue to pass up monetary gain to have the intellectual freedom that academia offers. I will only live once, and I want to achieve something extraordinary.Unfortunately, this blind faith does not pay the bills. And it has become increasingly difficult to explain to my family, and to myself, why my research is valuable while I have to get food vouchers from the WIC nutrition program every month.There is something romantic about disregarding financial realities to push the limit of understanding.I have decided that I won't give up on my academic dreams just yet. And deep down, I am still optimistic. I believe that all these hardships are only temporary. So, you may find me walking dogs or teaching high-schoolers, struggling to make ends meet. But you will also, I hope, find my name in academic journals, as I do my best to advance human knowledge.

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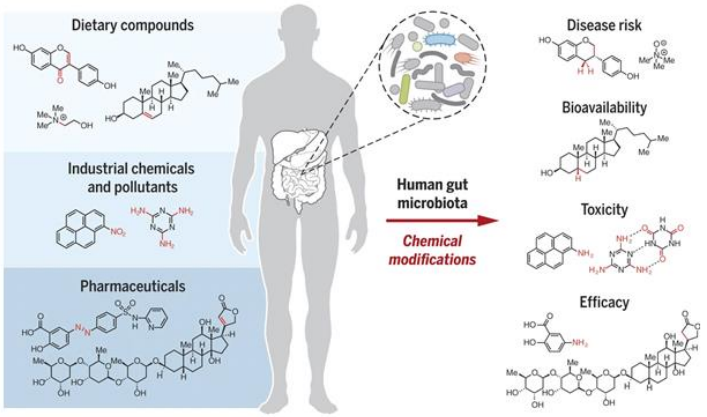
Citation: Koppel, et al *Science.* **2017,** *356*, 2770

Chemical transformation of xenobiotics by the human gut microbiota

The microorganisms that inhabit the human gut alter the chemical structures of ingested compounds, including dietary components, industrial chemicals, and drugs. These changes affect xenobiotic toxicity, biological activity, and bioavailability. The gut microbial enzymes responsible for many of these transformations are poorly understood. Me, methyl.



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