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Instructions for Authors (Volume 1)

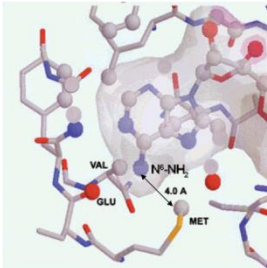
Identify articles to abstract in the journals you have been assigned. Try to pick things that the group (or specific subgroups) would like to read or should be aware of. This does not need to be limited to chemistry! If you encounter interesting pieces of media elsewhere (The Economist being a recent 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. <i>Biochemistry</i> 2007, 46, 2364-2370	
<p>Design and Characterization of a Traceable Protein Kinase C-alpha</p> <p>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 (ε-³²P-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.</p>	
	<p>bioorganic asymmetric methods synthesis mechanism review other</p> <p>OM Bryo Apop Hybrid Gnid/ Kirk Laulimalide Drug Deliv.</p>

Citation: Dictionary.com (search term = "mook")	
<p>For those of you who always wanted to know what it meant.... mook Pronunciation Key (mk) <i>n. Slang</i> An insignificant or contemptible person.</p>	<p><i>methods</i> synthesis</p>

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: Ghosh, C.; *et al. Acc. Chem. Res.*, **2015**, *48*, 2556-2564.

Alzheimer's Disease: A Heme-AB Perspective

Redox active iron is utilized in biology for various electron transfer and catalytic reactions essential for life, yet this same chemistry mediates the formation of partially reduced oxygen species (PROS). Oxidative stress derived from the iron accumulated in the amyloid plaques originating from amyloid beta (AB) peptides and neurofibrillary tangles derived from hyperphosphorylated tau proteins has been implicated in the pathogenesis of Alzheimer's disease (AD). Altered heme homeostasis leading to dysregulation of expression of heme proteins and heme deposits in the amyloid plaques are characteristic of the AD brain. However, the pathogenic significance of heme in neurodegeneration in AD has been unappreciated due to the lack of detailed understanding of the chemistry of the interaction of heme and AB peptides. As a result, the biochemistry and biophysics of heme complexes of AB peptides (heme-AB) remained largely unexplored.

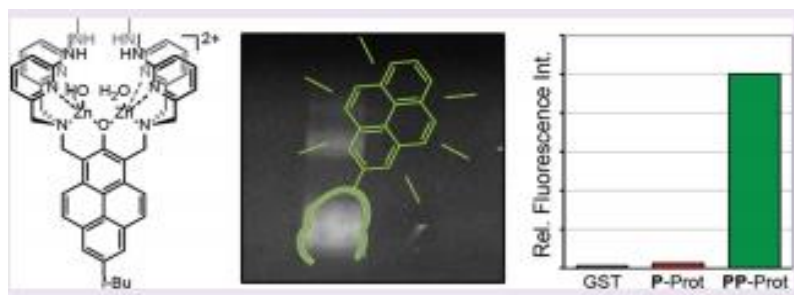
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Citation: ACS Chem Biol 2015, 10, 1958

A Fluorescent Sensor and Gel Stain for Detection of Pyrophosphorylated Proteins

Dinuclear zinc complex 1 selectively binds diphosphate esters in the presence of various other functional groups, including monophosphate esters. Complex 1 also constitutes a competent stain for visualization of pyrophosphorylated proteins in polyacrylamide gels

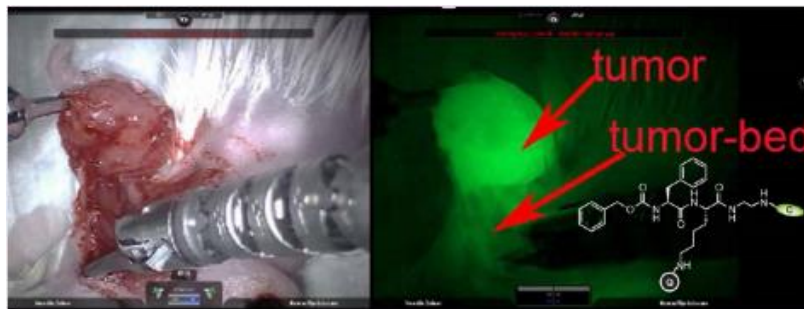


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Citation: Bogoy et al. ACS Chem Biol. 2015, 10, 1977

Design of Protease Activated Optical Contrast Agents That Exploit a Latent Lysosomotropic Effect for Use in Fluorescence-Guided Surgery



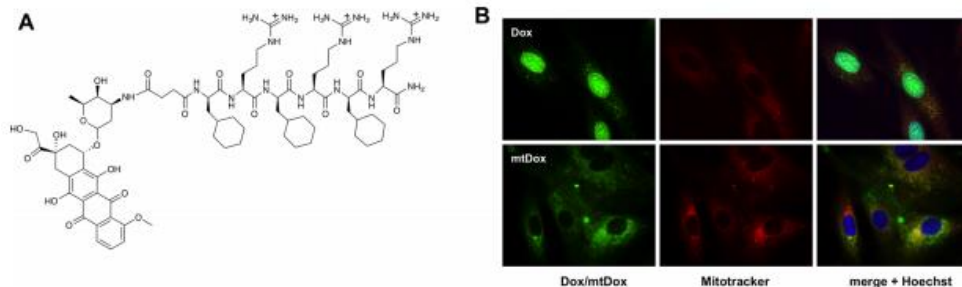
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Citation: Kelley, S.O. et al. ACS Chem Biol, 2015, 10 2007

Mitochondrial Targeting of Doxorubicin Eliminates Nuclear Effects Associated with Cardiotoxicity

While Dox has a high level of activity against cancer cells, its clinical use is often complicated by dose-limiting cardiotoxicity. Our lab has developed a mitochondrially targeted derivative of Dox that enables the selective study of toxicity generated by the presence of Dox in the mitochondria of human cells

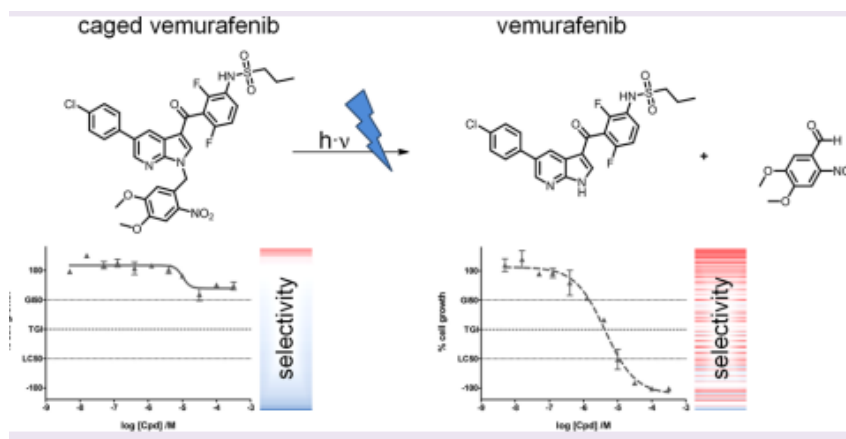


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Citation: ACS Chem Biol, 2015, 10 2099

Photoactivatable Prodrugs of Antimelanoma Agent Vemurafenib

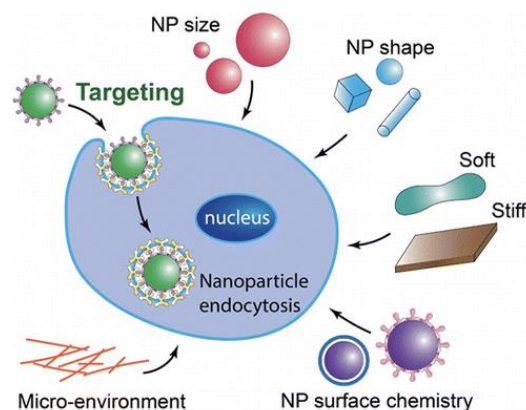


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Citation: Zhang, S. et. al, ACS Nano, 2015, 9 (9) 8655-8671

Physical Principles of Nanoparticle Cellular Endocytosis

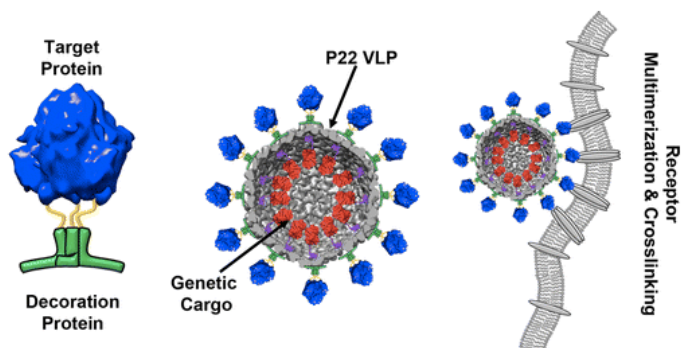


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Citation: Schwarz, B. et. al, *ACS Nano*, 2015, 9 (9) 9134-9147.

Symmetry Controlled, Genetic Presentation of Bioactive Proteins on the P22 Virus-like Particle Using an External Decoration Protein

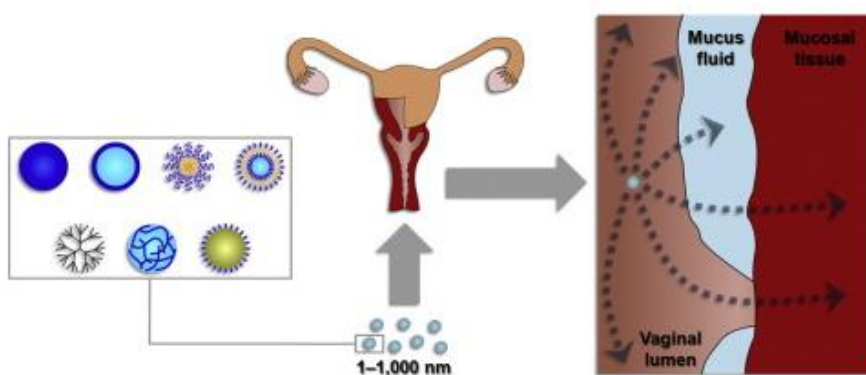


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Citation: Neves J. et al. *Advanced Drug Delivery Reviews*. 2015, 92, 53–70

Polymer-based nanocarriers for vaginal drug delivery

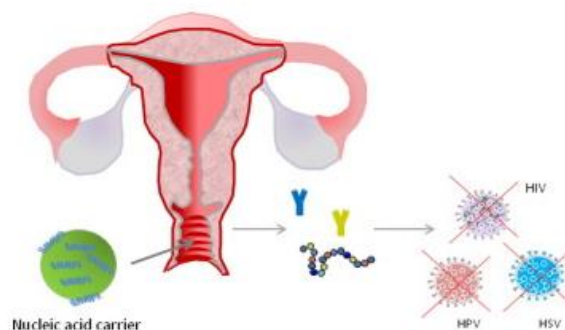


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Citation: Rodríguez-Gascón, A. et al. *Advanced Drug Delivery Reviews*. 2015, 92, 71–83

The neonatal Fc receptor, FcRn, as a target for drug delivery and therapy



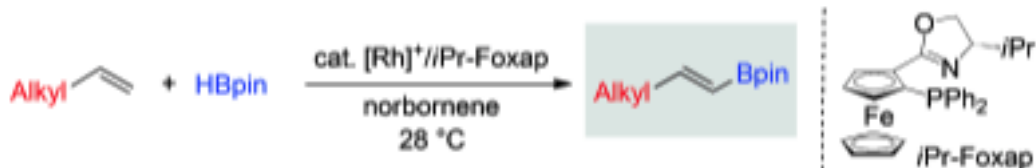
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Citation: Citation: Pavlakos, I. et al. *Angew. Chem. Int. Ed.* **2015**, *54*, 12659

Rhodium-Catalyzed Dehydrogenative Borylation of Aliphatic Terminal Alkenes with Pinacolborane (pages 12659–12663)

Crazy like a fox: Aliphatic terminal alkenes react with pinacolborane at ambient temperature in the presence of $[\text{Rh}(\text{cod})_2]\text{BF}_4/\text{iPr-Foxap}$ and norbornene to produce dehydrogenative borylation compounds as the major product. The reaction is applied to the one-pot syntheses of aldehydes and homoallylic alcohols from aliphatic terminal alkenes. cod=1,5-cyclooctadiene.

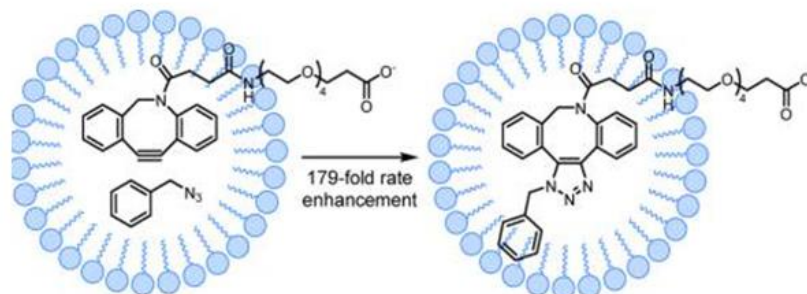


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Citation: Bioconjugate Chem. 2015, 26 (8), 1687–1691.

Accelerating Strain-Promoted Azide–Alkyne Cycloaddition Using Micellar Catalysis.

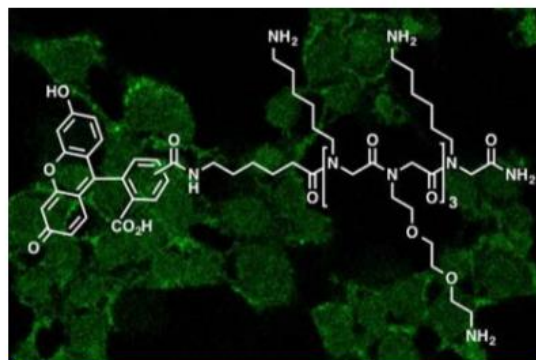


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Citation: Bioconjugate Chem. 2015, 26 (8), 1759–1765.

Flow and Microwave-Assisted Synthesis of N-(Triethylene Glycol)glycine Oligomers and Their Remarkable Cellular Transporter Activities

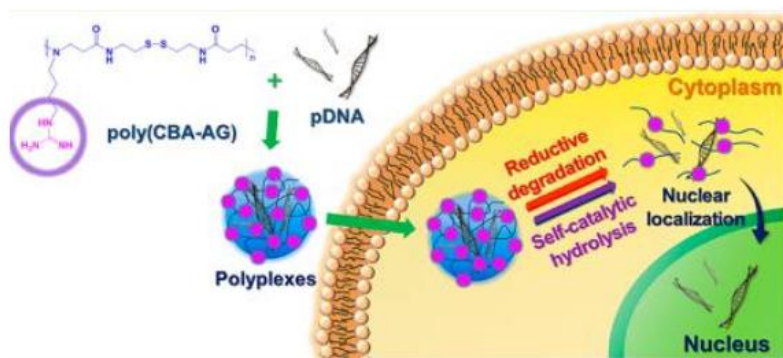


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Citation: Biomacromolecules 2015, 16 (9), 2715–2725.

Agmatine-Containing Bioreducible Polymer for Gene Delivery Systems and Its Dual Degradation Behavior.

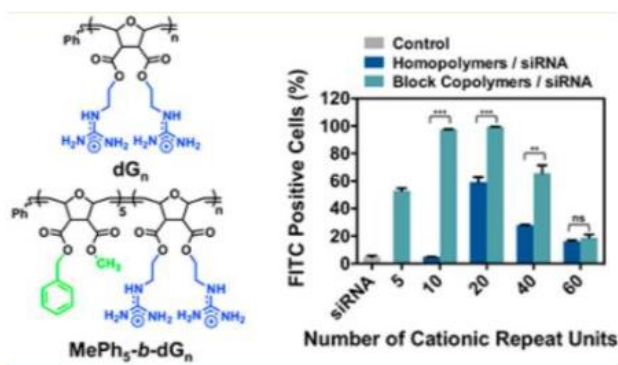


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Citation: Biomacromolecules 2015, 16 (10), 3172–3179.

Development of Guanidinium-Rich Protein Mimics for Efficient siRNA Delivery into Human T Cells.

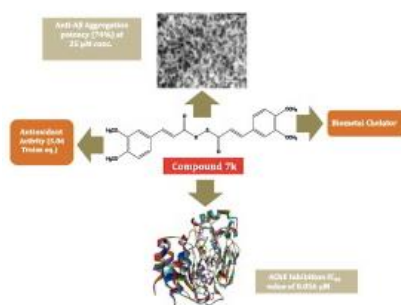


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Citation: Manral, A. et al. *Bioorg. Med. Chem.*, 23, (2015) 6389-6403

Diallyl disulfide derivatives with B-amyloid reducing, cholinergic, antioxidant and metal chelating properties of Alzheimer's disease

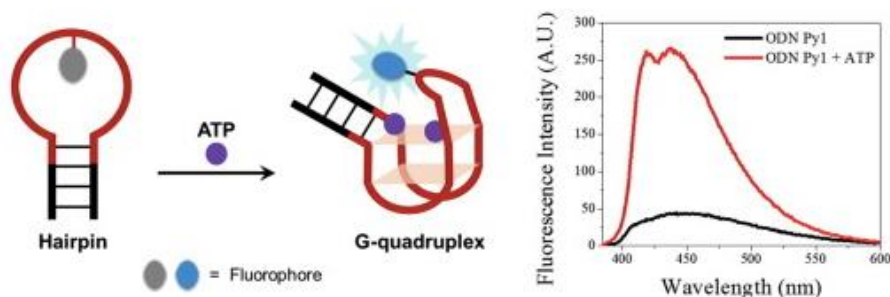


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Citation: Park, J. et al. *Bioorg. Med. Chem. Lett.*, 25, (2015)4597-4600

Quencher-free molecular aptamer beacons (QF-MABs) for detection of ATP

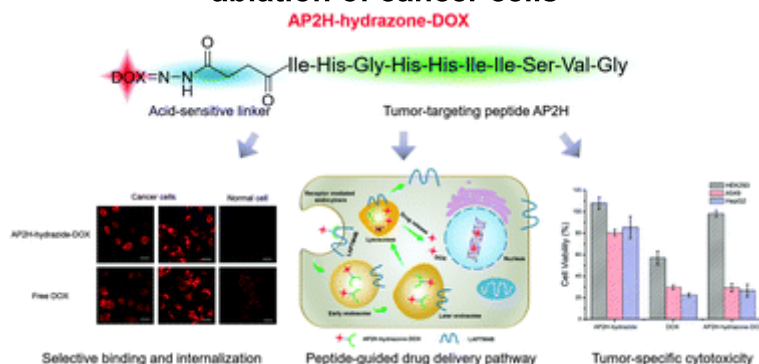


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Citation: Jin, Y.; et al. *Chem. Commun.* 2015, 51, 14454.

A peptide-based pH-sensitive drug delivery system for targeted ablation of cancer cells



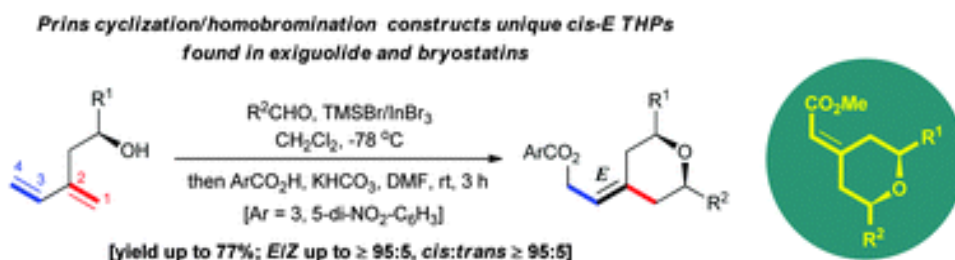
A peptide-based pH-sensitive drug delivery system AP2H-hydrazone–DOX was developed for selective recognition and targeted ablation of cancer cells.

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Citation: Li, L.; et al. *Chem. Commun.* 2015, 51, 14925.

TMSBr/InBr₃-promoted Prins cyclization/homobromination of dienyl alcohol with aldehyde to construct cis-THP containing an exocyclic E-alkene



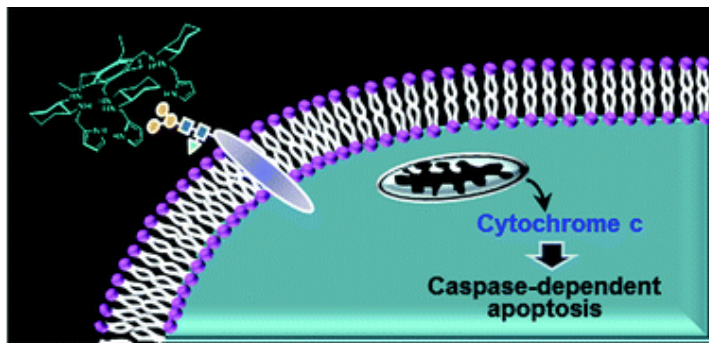
A TMSBr/InBr₃-promoted Prins cyclization/homobromination reaction of dienyl alcohol with aldehyde has been developed to construct a unique cis-E THP shown as the A ring in (-)-exiguolide and the B ring in bryostatins.

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Citation: Park, S. H. et al. *Chemical Science*. **2015**, DOI: 10.1039/c5sc03200h

Synthetic aminopyrrolic receptors have apoptosis inducing activity

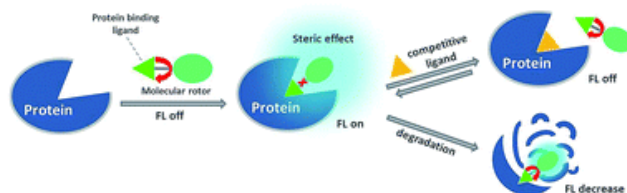


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Citation: Yu, W. T. et al. *Chemical Science*. **2015**, DOI: 10.1039/c5sc02808f

Protein sensing in living cells by molecular rotorbased fluorescence-switchable chemical probes



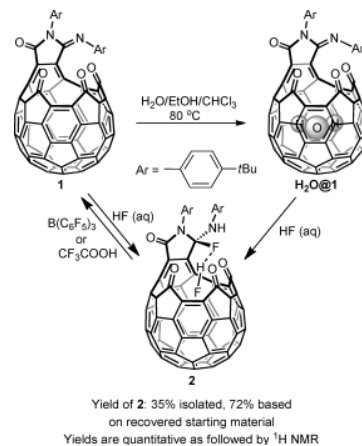
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Citation: Xu, et al. *Chem. Eur. J.* **2015**, 21, 13539-13543.

Release of the Water Molecule Encapsulated Inside an Open-Cage Fullerene through Hydrogen Bonding Mediated by Hydrogen Fluoride

A reversible wetting/dewetting procedure is reported for an open-cage fullerene with an 18-membered orifice. In a homogeneous mixture of H₂O/EtOH/CHCl₃, water was encapsulated into the cavity of the open-cage compound quantitatively at 80 °C. Addition of aqueous hydrogen fluoride into the water-encapsulated complex removed the encapsulated water completely at room temperature. H-bonding between the trapped water and fluoride is shown to play a key role for the water release process.



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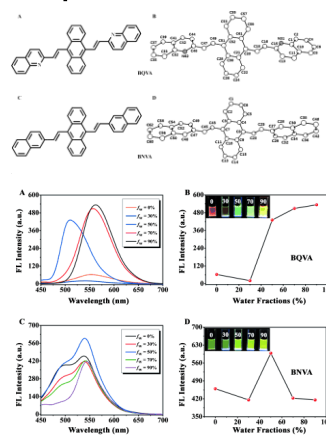
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Citation: Niu, *et al. Chem.*

Eur. J. 2015, 21, 13983

Solvatochromism, Reversible Chromism and Self-Assembly Effects of Heteroatom-Assisted Aggregation-Induced Enhanced Emission (AIEE) Compounds

Two compounds, 9,10-bis[2-(quinoly)vinyl]anthracene (BQVA) and 9,10-bis[2-(naphthalen-2-yl)vinyl]anthracene (BNVA), have been synthesised and investigated. Both of them have aggregation-induced enhanced emission (AIEE) properties. Heteroatom-assisted BQVA shows solvatochromism, reversible chromism properties and self-assembly effects. When increasing the solvent polarities, the green solution of BQVA turns to orange with a redshift of the fluorescence emission wavelengths from 527 to 565nm. Notably, BQVA exhibits reversible chromism properties, including mechano- and thermochromism. The as-prepared BQVA powders show green fluorescence (emission wavelength=525nm) and the colour can turn into orange (emission wavelength 573nm) after grinding. Interestingly, the orange colour can return at high temperature. Based on these reversible chromism properties, a simple and convenient erasable board has been designed. Additionally, BQVA also exhibits excellent self-assembly effects in different solvents. Homogeneous nanospheres are formed in mixtures of tetrahydrofuran and water, which are then doped into silica nanoparticles and treated with 3-aminopropyltriethoxysilane to give amino-functionalised nanoparticles (BQVA-AFNPs). The BQVA-AFNPs could be used to stain protein markers in polyacrylamide gel electrophoresis.



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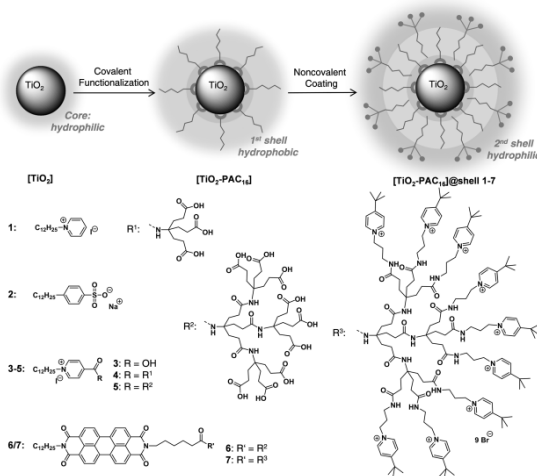
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Citation: Zeiniger, *et al.*

Chem. Eur. J. 2015, 21,

Very Facile Polarity Umpolung and Noncovalent Functionalization of Inorganic Nanoparticles: A Tool Kit for Supramolecular Materials Chemistry

for the first time, shell-by-shell (SbS) coating of inorganic nanoparticles with functional, tailor-designed amphiphiles. In this way, two major accomplishments were realized: 1) polarity umpolung (transformation of the dispersability behavior), and 2) very facile hybridization with highly functional polyionic and chromophoric building blocks. The resulting SbS-coated structures represent hierarchically ordered organic-inorganic hybrid materials.



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Citation: Connell, *et al. Chem. Eur. J. 2015, 21, 14146-14155.*

Protein Labelling with Versatile Phosphorescent Metal Complexes for Live Cell Luminescence Imaging

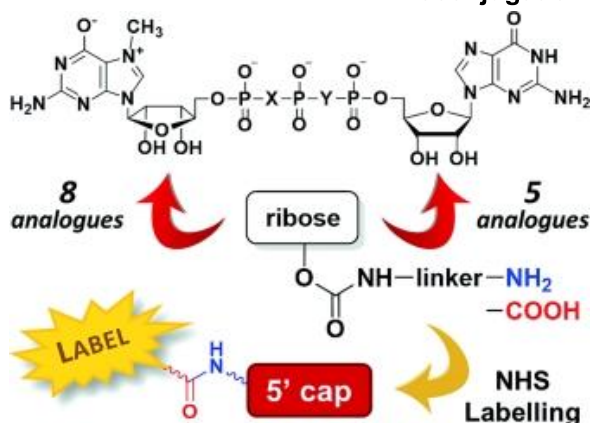
As the research in nanotechnology progresses, there will eventually be an influx in the number of commercial products containing different types of nanomaterials. This phenomenon might damage our health and environment if the nanomaterials used are found to be toxic and they are released into the waters when the products degrade. In this study, we investigated the cytotoxicity of fluorinated nanocarbons (CXFs), a group of nanomaterials which can find applications in solid lubricants and lithium primary batteries. Our cell viability findings indicated that the toxicological effects induced by the CXF are dependent on the dose, size, shape, and fluorine content of the CXF. In addition, we verified that CXFs have insignificant interactions with the cell viability assays¹ methylthiazolyldiphenyl-tetrazolium bromide (MTT) and water-soluble tetrazolium salt (WST-8), thus suggesting that the cytotoxicity data obtained are unlikely to be affected by CXF-induced artifacts and the results will be reliable.

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Citation: Warminski, M. et al. *Eur. J. Org. Chem.* **2015**, 2015, 6153-6159.

mRNA Cap Modification through Carbamate Chemistry: Synthesis of Amino- and Carboxy-Functionalised Cap Analogues Suitable for Labelling and Bioconjugation



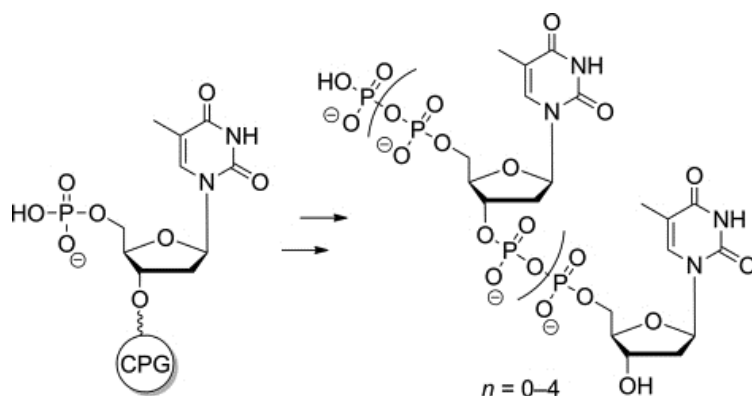
A series of amino- and carboxy-functionalised dinucleotide 5' cap analogues have been synthesised by use of carbamate chemistry. The compounds are suitable for labelling with biotin or fluorescent tags by employment of an in situ NHS activation strategy.

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Citation: Kistemaker, H. A. V. et al. *Eur. J. Org. Chem.* **2015**, 2015, 6084-6091.

On the Synthesis of Oligonucleotides Interconnected through Pyrophosphate Linkages

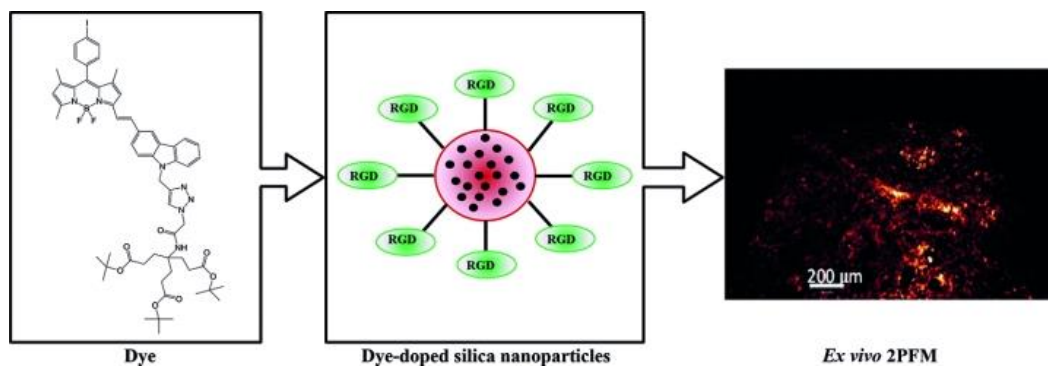


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Citation: Kim, B. et al. *Eur. J. Org. Chem.* **2015**, 2015, 5563-5571.

Near-Infrared Fluorescent 4,4-Difluoro-4-bora-3a,4a-diaza-s-indacene Probes for One- and Two-Photon Fluorescence Bioimaging

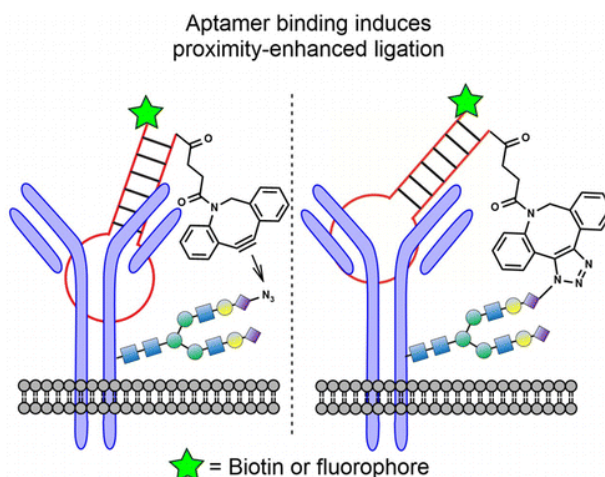


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Citation: Peter V. Robinson, Gabriela de Almeida-Escobedo, Amber E. de Groot, Julia L. McKechnie, and Carolyn R. Bertozzi *JACS*, **2015**, 137 (33), 10452-10455

Live-Cell Labeling of Specific Protein Glycoforms by Proximity-Enhanced Bioorthogonal Ligation

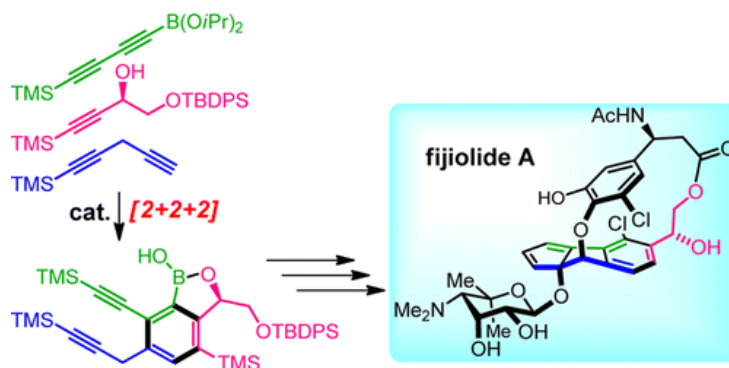


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Citation: Christoph Heinz and Nicolai Cramer. *Journal of the American Chemical Society*, **2015**, 137 (35), 11278-11281

Synthesis of Fijiolide A via an Atropselective Paracyclophane Formation

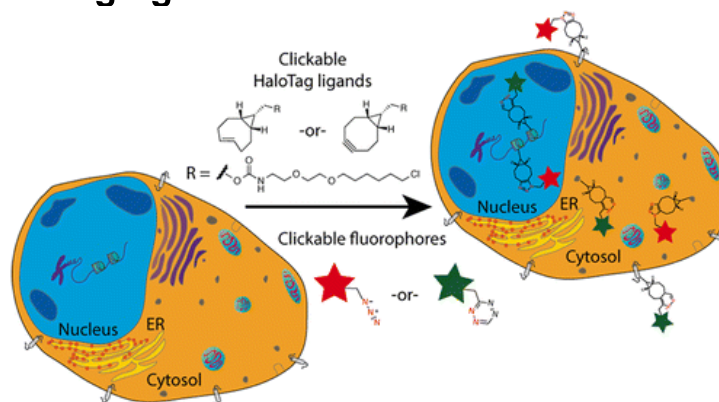


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Citation: Heather E. Murrey, Douglas S. Johnson, et al. *Journal of the American Chemical Society*, **2015**, 137 (35), 11461-11475

Systematic Evaluation of Bioorthogonal Reactions in Live Cells with Clickable HaloTag Ligands: Implications for Intracellular Imaging

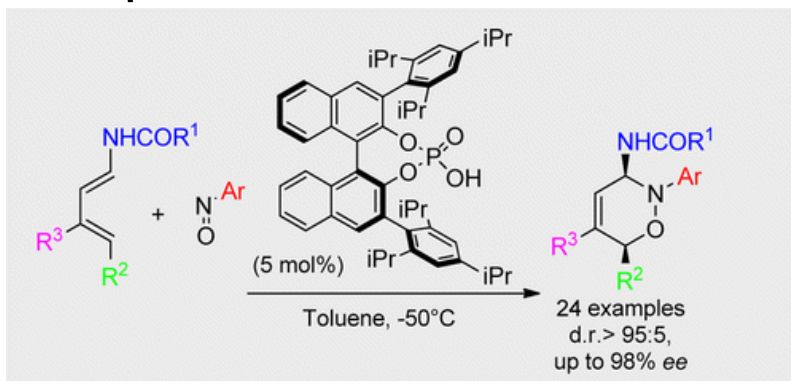


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Citation: Jonathan Pous, Thibaut Courant, Guillaume Bernadat, Bogdan I. Iorga, Florent Blanchard, and Géraldine Masson. *Journal of the American Chemical Society*, **2015**, 137 (37), 11950-11953

Regio-, Diastereo-, and Enantioselective Nitroso-Diels–Alder Reaction of 1,3-Diene-1-carbamates Catalyzed by Chiral Phosphoric Acids

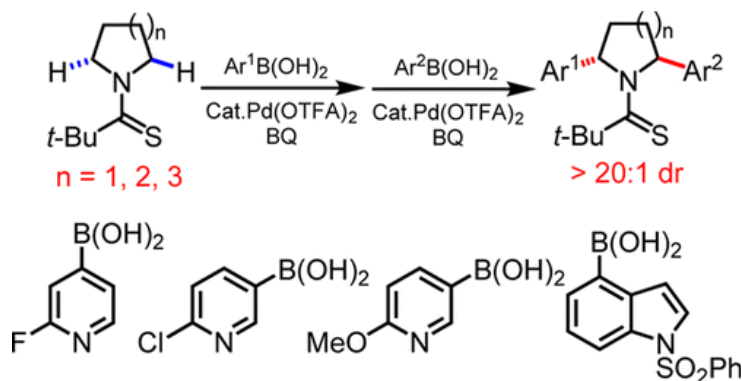


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Citation: Jillian E. Spangler, Yoshihisa Kobayashi, Pritha Verma, Dong-Hui Wang, and Jin-Quan Yu. *Journal of the American Chemical Society*, **2015**, 137 (37), 11876-11879

α -Arylation of Saturated Azacycles and N-Methylamines via Palladium(II)-Catalyzed C(sp³)–H Coupling

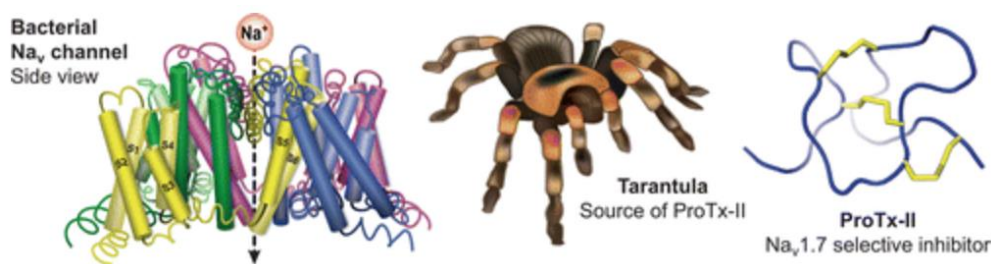


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Citation: Kraus, R. L.; de Lera Ruiz, M. *J. Med. Chem.* **2015**, 58 (18), 7093-7118

Voltage-Gated Sodium Channels: Structure, Function, Pharmacology, and Clinical Indications

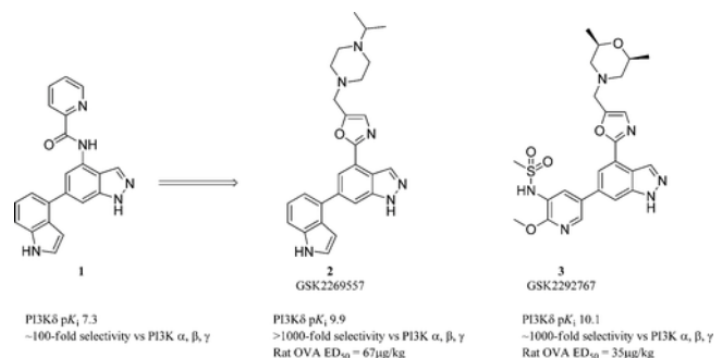


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Citation: Down, K.; *et al. J. Med. Chem.* **2015**, 58 (18), 4381-4399

Optimization of Novel Indazoles as Highly Potent and Selective Inhibitors of Phosphoinositide 3-Kinase delta for the Treatment of Respiratory Disease

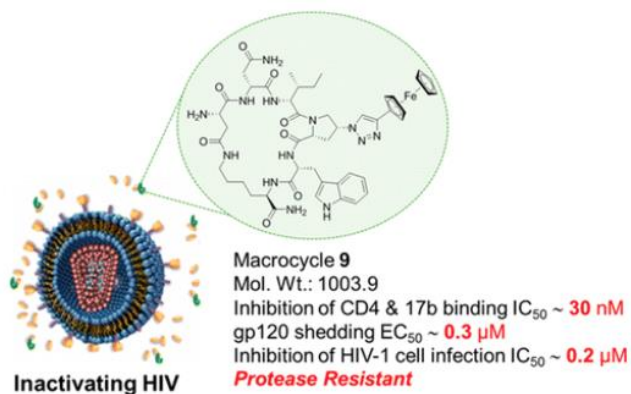


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Citation: Rashad, A. A.; *et al. J. Med. Chem.* **2015**, 58 (18), 7603-7608

Macrocyclic Envelope Glycoprotein Antagonists that Irreversibly Inactivate HIV-1 before Host Cell Encounter

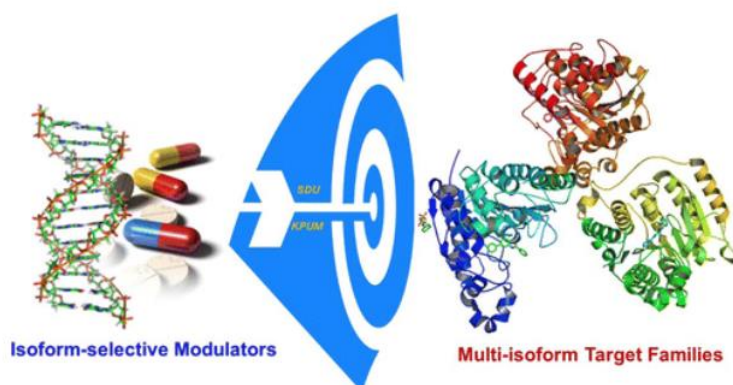


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Citation: Zhan, P.; *et al. J. Med. Chem.* **2015**, 58 (19), 7611-7633

Strategies for the Discovery of Target-Specific or Isoform-Selective Modulators



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Citation: Mol. Pharmaceutics 2015, 12 (9), 3105–3118.

Taming Cell Penetrating Peptides: Never Too Old To Teach Old Dogs New Tricks.

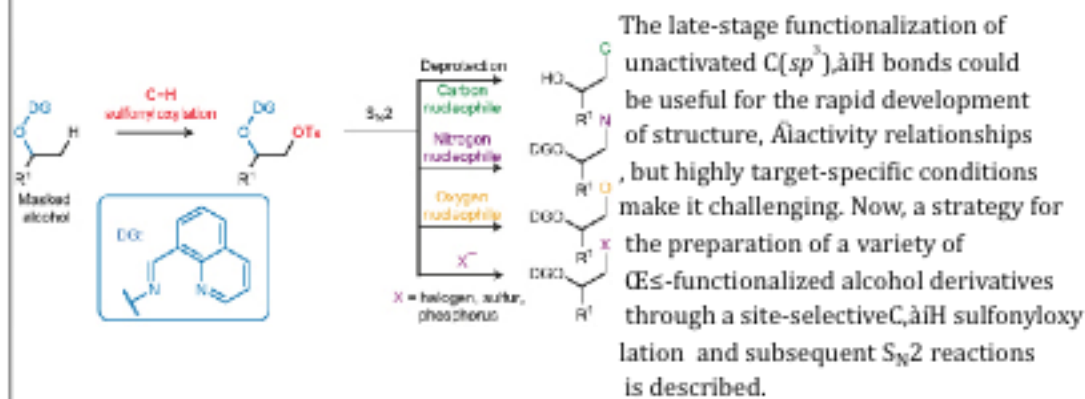


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Citation: Pavlicek, N. et al. *Nat. Chem.* 2015, 7(10), 829

Diverse sp^3 C-H functionalizations through alcohol sulfonyloxylation



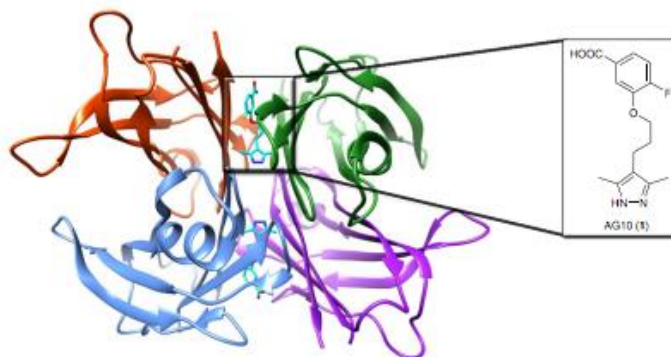
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Citation: nature CHEMICAL BIOLOGY | vol 11 | OCTOBER 2015 | p. 793

A biomimetic approach for enhancing the in vivo half-life of peptides

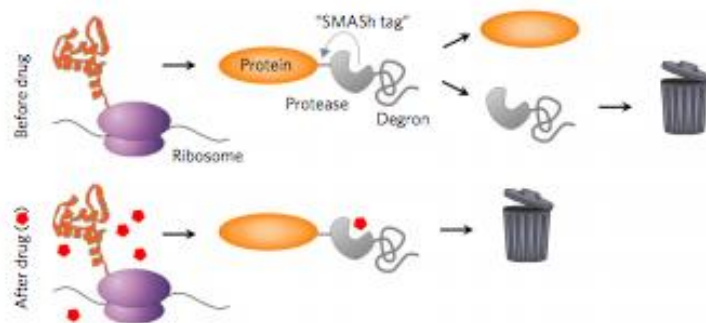
SM promotes reversible binding to serum, which protects the peptide in vivo.



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Tunable and reversible drug control of protein production via a self-excising degron



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Elephants: Large, Long-Living and Less Prone to Cancer

Every time a cell divides, there's a small chance it will gain a mutation that speeds its growth. Cells that accumulate several of these mutations may become cancerous. The bigger an animal is, the more cells it has, and the longer an animal lives, the more times its cells divide. We humans undergo about 10,000 times as many cell divisions as mice — and thus should be far more likely to get cancer. Yet humans and mice have roughly the same lifetime risk of cancer, a circumstance that has come to be known as Peto's paradox. A number of scientists have speculated that large, long-lived animals must evolve extra cancer-fighting weapons. And if that's true, they reason, then the biggest, longest-lived animals should have an especially big arsenal. Otherwise, these species would go extinct. Writing Thursday in *The Journal of the American Medical Association*, Dr. Schiffman and his colleagues report that elephants appear to be exceptional cancer fighters, using a special set of proteins to kill off damaged cells. To understand the elephants' defenses, the scientists investigated a gene that is crucial for preventing cancer, called p53.

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San Francisco Is Changing Face of AIDS Treatment

"I love the San Francisco model," said Dr. Anthony S. Fauci, the director of the National Institute of Allergy and Infectious Diseases. "If it keeps doing what it is doing, I have a strong feeling that they will be successful at ending the epidemic as we know it. Not every last case — we'll never get there — but the overall epidemic. And then there's no excuse for everyone not doing it."

Last week, the World Health Organization essentially agreed. Issuing new guidelines for the treatment and prevention of H.I.V., the agency called on the rest of the world to do much of what San Francisco is already doing: Every H.I.V. patient should start antiretroviral drugs as soon as they test positive rather than waiting for measures of immune system strength to drop, the agency said, and everyone at risk of infection should be offered preventive drugs. San Francisco adopted the first practice — "test and treat" — five years ago and the second in 2013. The results have been striking.

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Citation: <http://www.nytimes.com/2015/09/29/health/children-with-hiv-more-likely-to-die-of-malaria.html>

Children With H.I.V. More Likely to Die of Malaria

Children infected with H.I.V. appear much more likely than those who are not to die with severe malaria, a new study has found. It may make sense to give these children malaria drugs protectively, the authors said.

The research, which looked at 3,000 Malawian children who went into comas with cerebral malaria and included autopsies on more than 100 who had died, partly resolves a question that has long puzzled H.I.V. specialists. Does H.I.V. make malaria more lethal, as it is well-known to do with other diseases — notably tuberculosis?

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Citation: <http://www.theonion.com/article/impressive-new-hire-figures-out-bare-minimum-work--51497>

Impressive New Hire Figures Out Bare Minimum of Work Job Requires on First Day

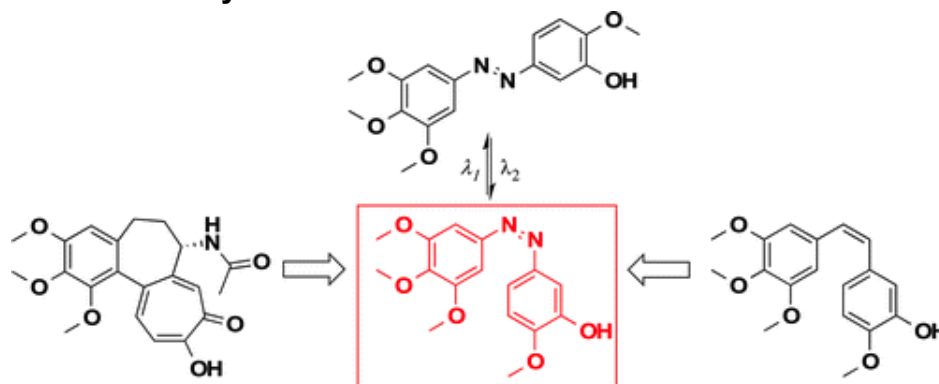
MILWAUKEE—Marveling at his extraordinary ability to learn the ropes at the technology firm and quickly fit right in with the rest of his colleagues, sources at Starpoint Solutions confirmed Thursday that impressive new hire Eric Myers has already figured out the bare minimum of work his job requires on the very first day. “It took me a few months before I had a firm grasp on cutting corners, blowing off tasks, and doing a half-assed job on stuff so I could just kick back most of the day. Eric’s a natural, though; he just has an innate knack for phoning it in.” At press time, several employees were reportedly shaking their heads in surprise and admiration after noticing their new coworker had taken an hour and a half for lunch.

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Citation: Engdahl, A. J. et al. *Org. Lett.* **2015**, 17, 4546-4549

Synthesis, Characterization, and Bioactivity of the Photoisomerizable Tubulin Polymerization Inhibitor azo-Combretastatin A4

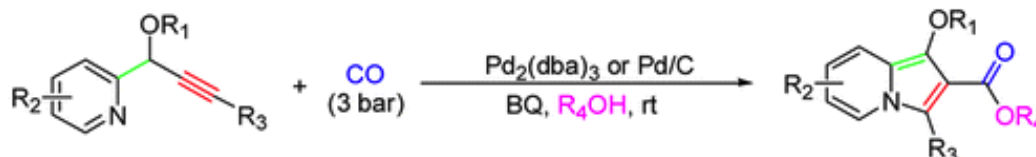


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Citation: Xu, T. et al. *Org. Lett.* **2015**, 17, 4526-4529

Synthesis of Indolizine Derivatives by Pd-Catalyzed Oxidative Carbonylation

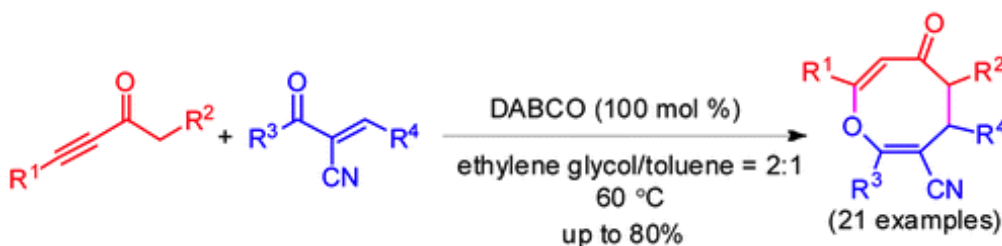


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Citation: Liang, L. et al. *Org. Lett.* **2015**, 17, 4914-4917

DABCO-Mediated [4 + 4]-Domino Annulation: Access to Functionalized Eight-Membered Cyclic Ethers

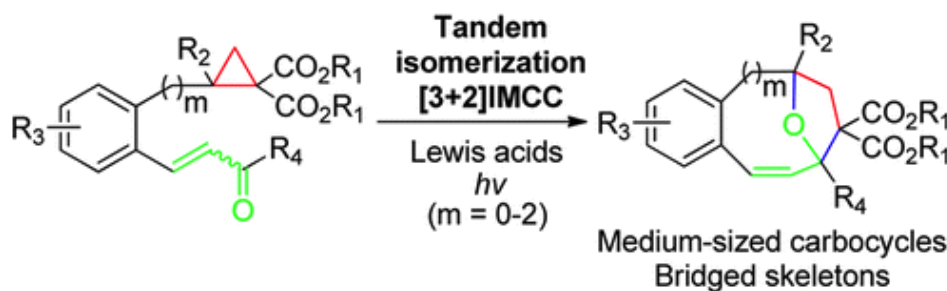


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Citation: Wang, Z., et al. *Org. Lett.* **2015**, 17, 4184-4187

Cooperative Photo-/Lewis Acid Catalyzed Tandem Intramolecular [3+2] Cross-Cycloadditions of Cyclopropane 1,1-Diesters with α,β -Unsaturated Carbonyls for Medium-Sized Carbocycles

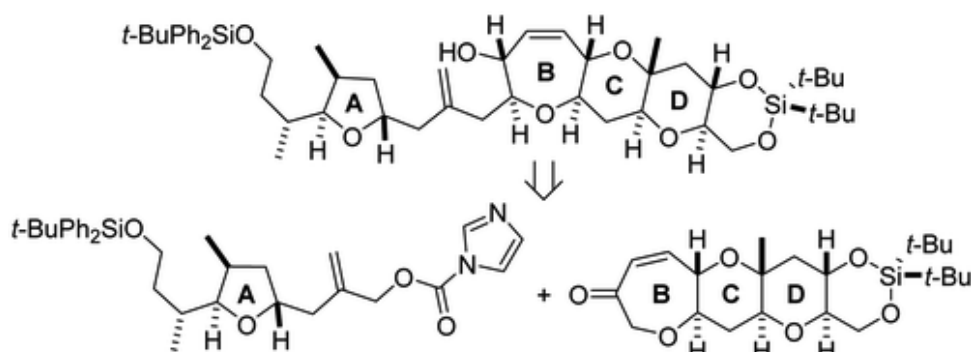


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Citation: Clark, J. S. et al. *Org. Lett.* **2015**, 17, 4694-4697

Synthesis of the A-D Ring System of the Gambieric Acids

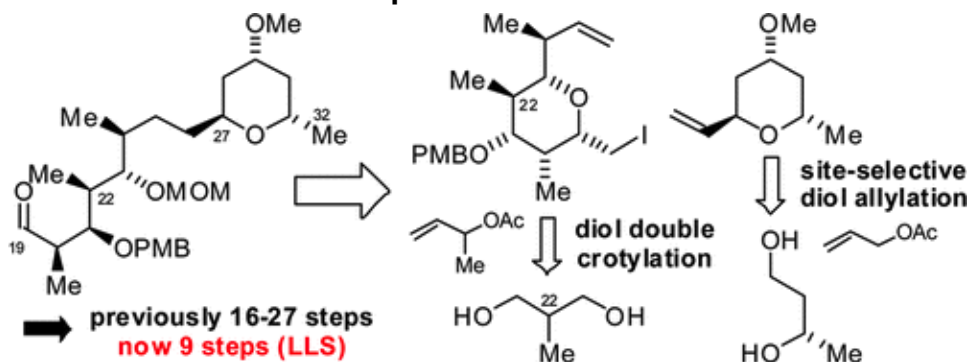


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Citation: Khatri, B. B., et al. *Org. Lett.* **2015**, 17, 4360-4363

Formal Synthesis of Premisakinolide A and C(19)-C(32) of Swinholide A via Site-Selective C-H Allylation and Crotylation of Unprotected Diols

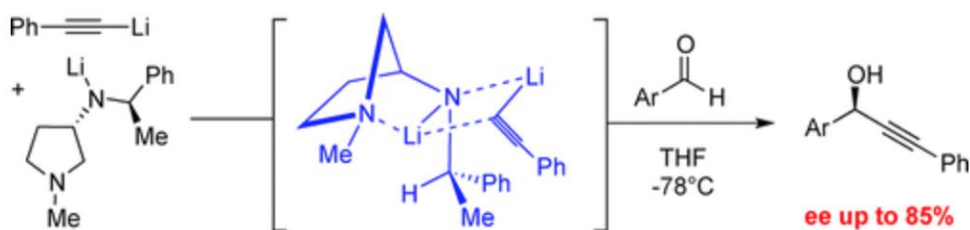


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Citation: Barozzino-Consiglio, G.; et al. *Organometallics* **2015**, 34 (18), 4441-4450

Enantioselective Alkynylation of Aldehydes by Mixed Aggregates of 3-Aminopyrrolidine Lithium Amides and Lithium Acetylides

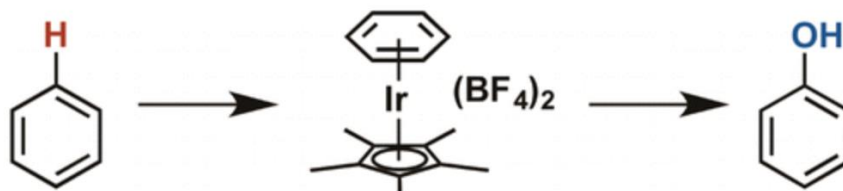


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Citation: D'Amato, E. M.; *et al. Organometallics* **2015**, 34 (18), 4626-4631

Selective Aromatic C-H Hydroxylation Enabled by η^6 -Coordination to Iridium(III)



π -Arene Activation for C-H Functionalization

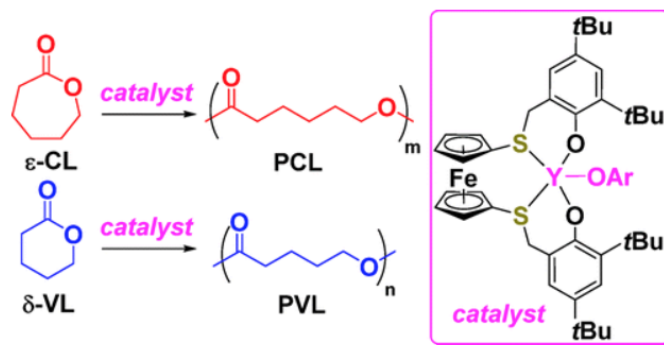
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Citation: Wang, X.; *et al. Organometallics* **2015**, 34 (19), 4700-4706

Highly Active Yttrium Catalysts for the Ring-Opening Polymerization of epsilon-Caprolactone and delta-Valerolactone



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Citation: Lin, Y.-R.; Baker, D. *et al. Proc. Natl. Acad. Sci. U.S.A.* **2015**, E5478-E5485.

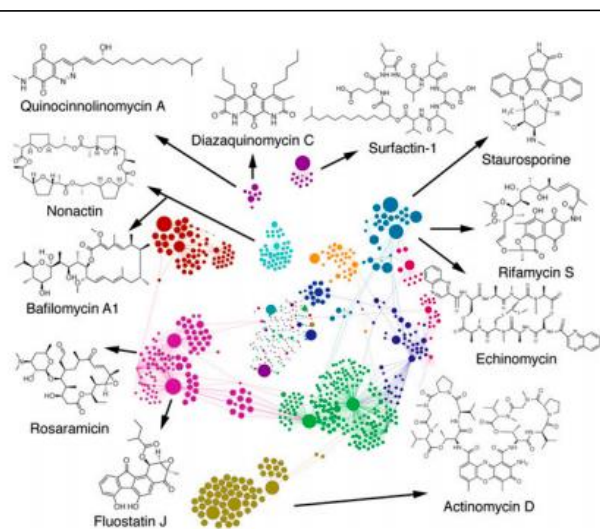
Control over overall shape and size in de novo designed proteins

To achieve fine control over protein shape and size within a particular topology, we have extended the design rules by systematically analyzing the codependencies between the lengths and packing geometry of successive secondary structure elements and the backbone torsion angles of the loop linking them. We demonstrate the control afforded by the resulting extended rule set by designing a series of proteins with the same fold but considerable variation in secondary structure length, loop geometry, beta-strand registry, and overall shape. Solution NMR structures of four designed proteins for two different folds show that protein shape and size can be precisely controlled within a given protein fold. These extended design principles provide the foundation for custom design of protein structures performing desired functions.

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Citation: Kurita, K. L.; Glassey, E.; Lington, R. G. *Proc. Natl. Acad. Sci. U.S.A.*; **2015**, *112*, 11999.



Integration of high-content screening and untargeted metabolomics for comprehensive functional annotation of natural product libraries

The detailed structural and functional annotation offered by this tool may help to improve the integration of natural products with modern high-content, high-throughput screening and provide an additional strategy for the discovery of the next generation of natural product-inspired drug leads and chemical probes.

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Citation: Megchelenbrink, W.; *et al. Proc. Natl. Acad. Sci. U.S.A.* **2015**, *112*, 12217-12222.

Synthetic dosage lethality in the human metabolic network is highly predictive of tumor growth and cancer patient survival

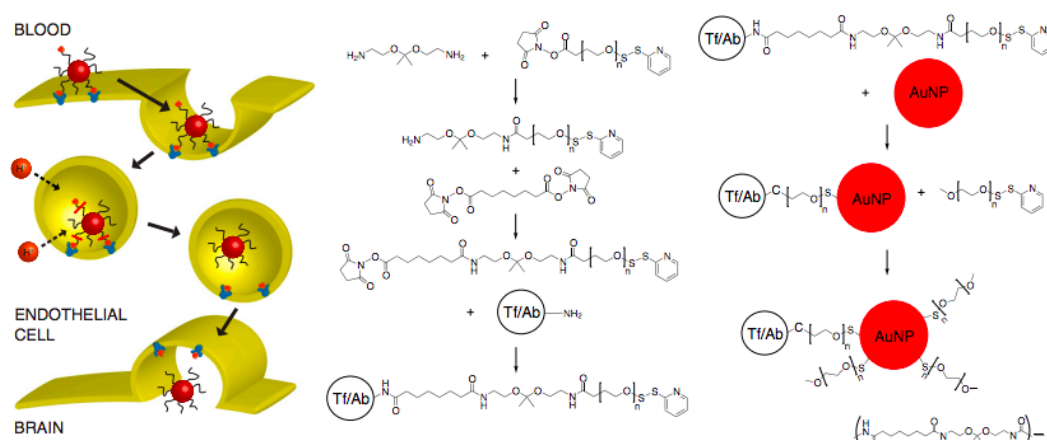
Synthetic dosage lethality (SDL) denotes a genetic interaction whereby an underexpression of gene A combined with an overexpression of gene B kills the cell. Although many overexpressed oncogenes driving tumor growth are difficult to target directly, targeting their SDL partners may kill cancer cells. We present what is, to our knowledge, the first networklevel modeling approach that is able to predict metabolic SDLs. As expected, we find that the predicted SDLs are less frequently active in tumors to avoid lethality. Cancer tumors with more and stronger SDLs have smaller tumor size and lead to increased patient survival. Beyond facilitating the development of novel anticancer therapies, model-based identification of metabolic SDLs can be used to model pathogenic bacteria and provide leads to new antibiotic targets.

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Citation: Clark, A. J.; Davis, M. E. *Proc. Natl. Acad. Sci. U.S.A.* **2015**, *112*, 12486-12491.

Increased brain uptake of targeted nanoparticles by adding an acid-cleavable linkage between transferrin and the nanoparticle core



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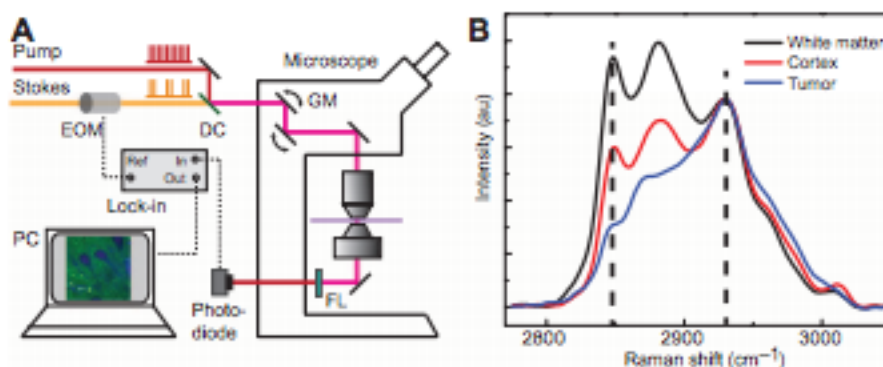
Antioxidants can increase melanoma metastasis in mice

Data contradicts popular notions about antioxidants.

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Detection of human brain tumor infiltration with quantitative stimulated Raman scattering microscopy



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The Achmatowicz Rearrangement – Oxidative Ring Expansion of Furfuryl Alcohols

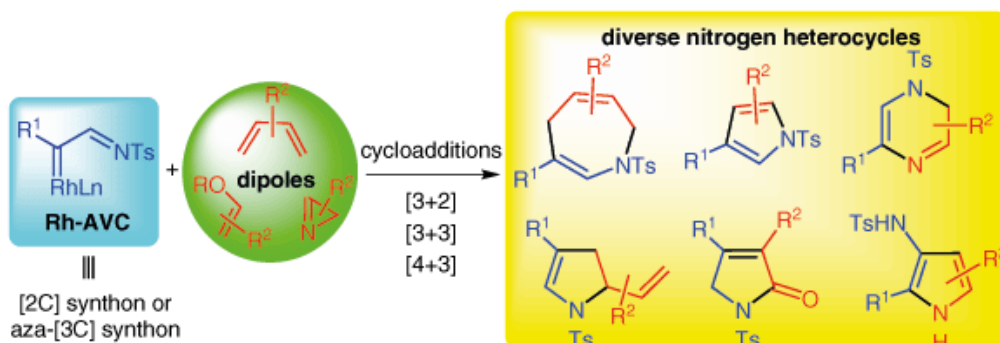


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Citation: Wang, Y.; Lei, X.; Tang, Y. *Synlett* **2015**, 26(15), 2051.

Rhodium-Azavinylcarbene: A Versatile Synthron-Enabling Divergent Synthesis of Nitrogen Heterocycles

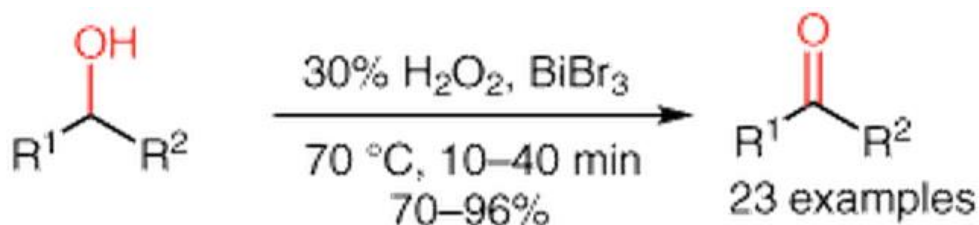


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Citation: Han, M.-K.; *et al.* *Synlett* **2015**, 26(17), 2434.

Bismuth Tribromide Catalyzed Oxidation of Alcohols with Aqueous Hydrogen Peroxide

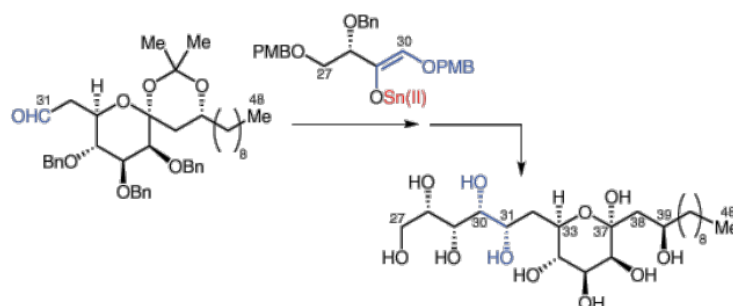


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Citation: Sawato Murakoshi, Seijiro Hosokawa. *Synlett* **2015**, 26, 2437

Stereoselective Synthesis of the C27–C48 Moiety of Aflastatin A by a Carbohydrate Strategy Using a Tin(II)-Mediated Aldol Reaction

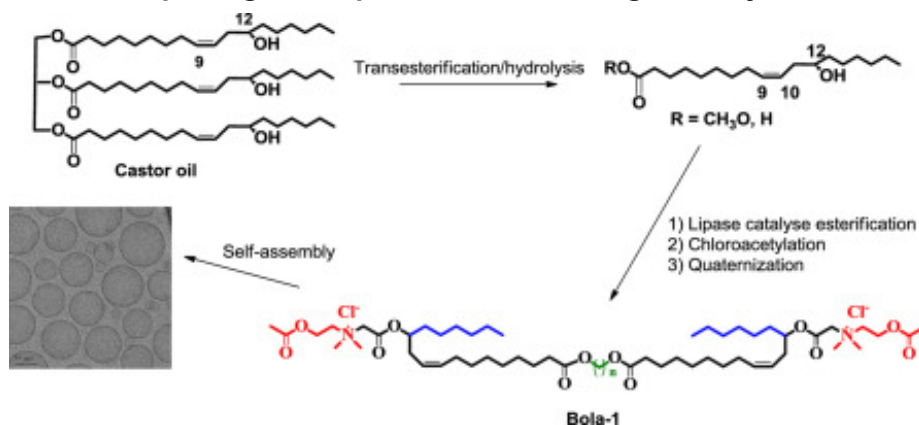


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Citation: Ewonkem, M. B. et al. *Tetrahedron* **2015**, *71*, 8557-8571.

Newly synthesized bolaamphiphiles from castor oil and their aggregated morphologies for potential use in drug delivery

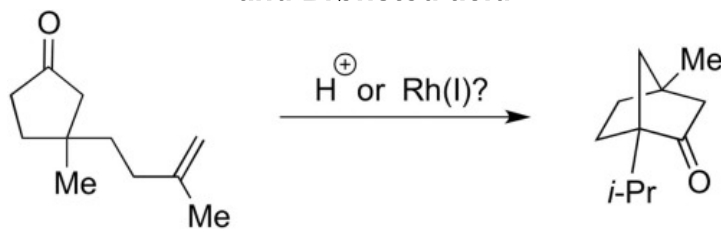


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Citation: Jiang, X.; Pan, Z.; Douglas, C. J. *Tet. Lett.* **2015**, *56*, 5324.

Cyclization of an alkene-bearing cyclopentanone: The role of rhodium and Brønsted acid



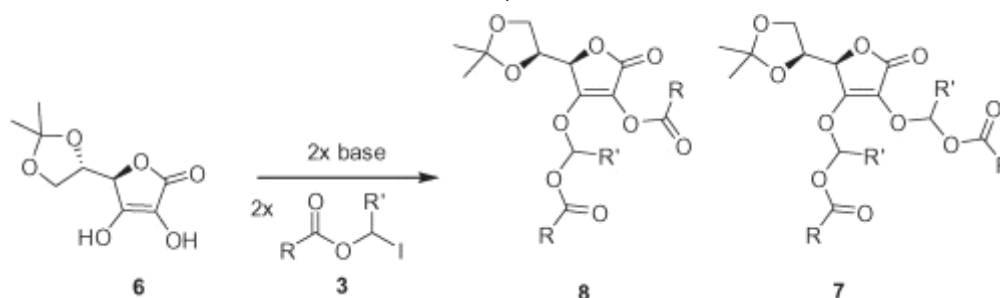
The cyclization of an alkene-bearing cyclopentanone to a [2.2.1]-norcamphor ring system is described. The reaction is catalyzed by a combination of rhodium and Brønsted acid. Control experiments indicate that both are needed for acceptable yield. Control experiments with bulky base additives show that rhodium promotes alkene isomerization, likely the first step of this cascade reaction, and that rhodium alone does not promote cyclization. Cyclization is promoted by Brønsted acid in a Prins-type cyclization and carbocation rearrangement process.

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Citation: McGowan, J.; Thiele, N.; Sloan, K. B. *Tet. Lett.* **2015**, *56*, 5441.

Prodrugs of vitamin C: the reaction of 1-acyloxyalkyl-1-iodides with vitamin C 5,6-acetonide



The reaction of 2 equiv of 1-acyloxyalkyl-1-iodides with vitamin C 5,6-acetonide gave mixtures of products that were O-alkylated on the 3-position and either O-alkylated, 7, or O-acylated, 8, on the 2-position. The 3-alkylated-2-acylated prodrugs, 8, hydrolyzed to vitamin C 5,6-acetonide chemically at pH 7.4 with half-lives of 6–12 h.

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