Accounts of Chemical Research	202	Melanie Huttner
ACS Chemical Biology	202	Jessica Vargas
ACS Nano	203	Nancy Benner
Advanced Drug Delivery Reviews	N/A	Xiaoyu Zang (Janice)
Angewandte Chemie International Edition	204	Andrew Raub
Bioconjugate Chemistry	205	Colin McKinlay
Biomacromolecules	206	Colin McKinlay
Bioorganic and Medicinal Chemistry	206	Nancy Benner
Bioorganic and Medicinal Chemistry Letters	207	Nancy Benner
Chemical Communications	207	Katie Near
Chemical & Engineering News	208	Steven Ryckbosch
Chemical Reviews	209	Ryan Quiroz
Chemical Science	209	Jack Sloane
Chemistry, A European Journal	210	Xiaoyu Zang (Janice)
European Journal of Organic Chemistry	N/A	Samanta Capolicchio
Journal of the American Chemical Society	212	Akira Shimizu (odd)
		Hsiao-Tieh Hsu (even)
Journal of Medicinal Chemistry	216	Matthew Stevens
Journal of Organic Chemistry	**MOOK**	Matthew Jeffreys
Molecular Pharmaceutics	218	Colin McKinlay
Natural Product Reports	218	Jack Sloane
Nature	218	Ryan Quiroz
Nature Chemistry	219	Andrew Raub
Nature Chemical Biology	219	Jessica Vargas
The New York Times	220	Melanie Huttner
The Onion	221	Melanie Huttner
Organic Letters	221	Jack Sloane
Organometallics	223	Matthew Stevens
PNAS	224	Melanie Huttner
Science	225	Steven Ryckbosch
Science Translational Medicine	226	Jessica Vargas
Synlett	227	Katie Near
Synthesis	228	Stephen Ho
Tetrahedron	228	Samanta Capolicchio
Tetrahedron Letters	229	Stephen Ho

Next Due Date: Monday, August 17, 2015

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.

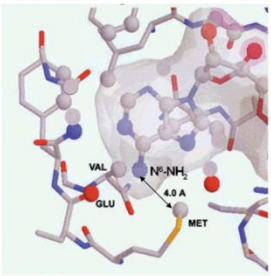
Include a brief textual summary of the article; an example of a completed abstract is shown below. The list of topics and subgroups on the right is useful to highlight which subgroups should pay attention to your abstract and roughly what kind of chemistry the article contains.

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 (1c-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.

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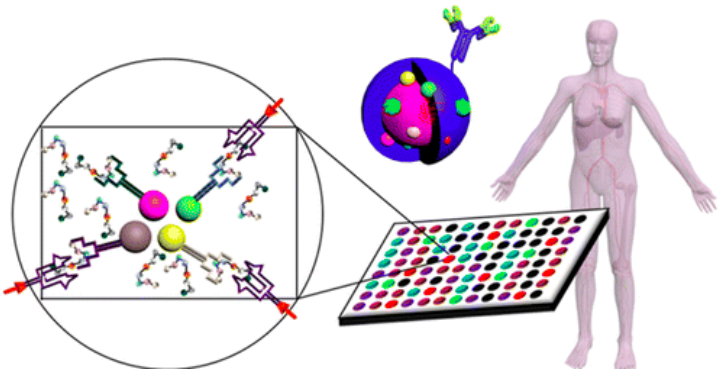
DON'T BE A MOOK!

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: Elsabahy, M.; Wooley, K. L. *Acc. Chem. Res.*, **2015,** *48,* 1620-1630.

Data Mining as a Guide for the Construction of Cross-Linked Nanoparticles with Low Immunotoxicity via Control of Polymer Chemistry and Supramolecular Assembly



Using cytokines to prdict the effect of biotherapeutics on modulation of the immune system and for screening immunotoxicity of nanoparticles while taking into account the effects of chemical structure, morphology, degradability, etc.

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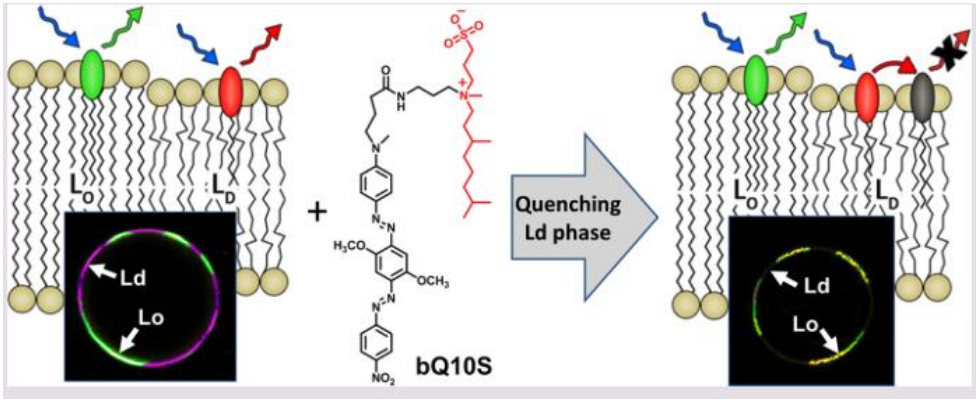
Citation: Kreder et al ACS Chem Biol 2015, 10, 1435

Solvatochromic Nile Red Probes with FRET Quencher Reveal Lipid Order Heterogeneity in Living and Apoptotic Cells



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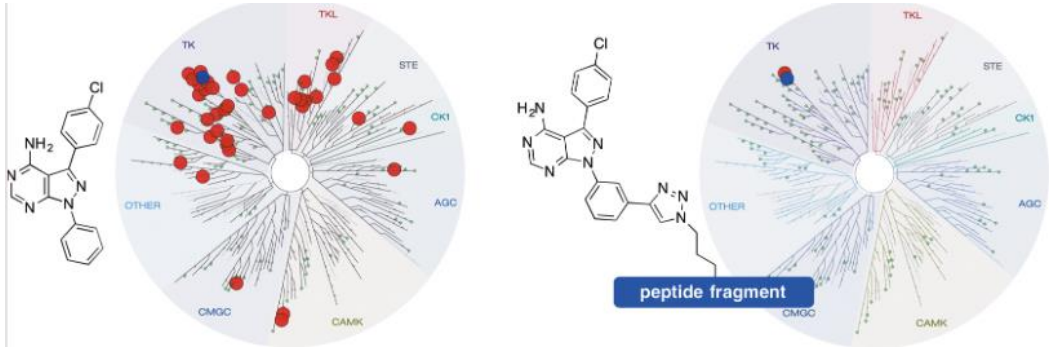
Citation: Brandvold et al. ACS Chem Biol 2015, 10, 1387

Exquisitely Specifc Bisubstrate Inhibitors of c-Src Kinase



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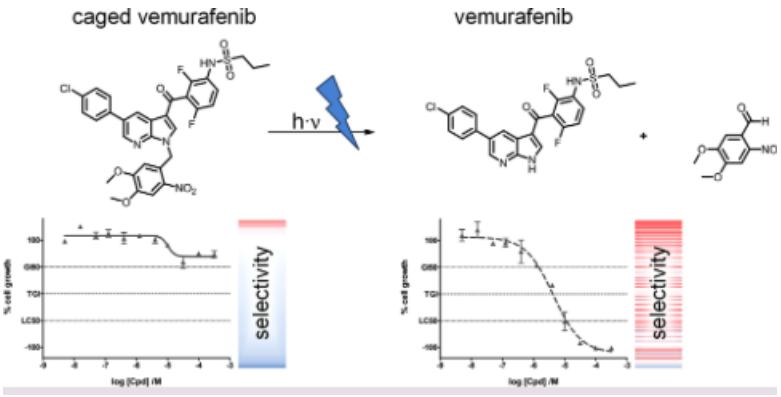
Citation: Horbert et al.ACS Chem Biol 2015,ASAP

Photoactivatable Prodrugs of Antimelanoma Agent Vemurafenib



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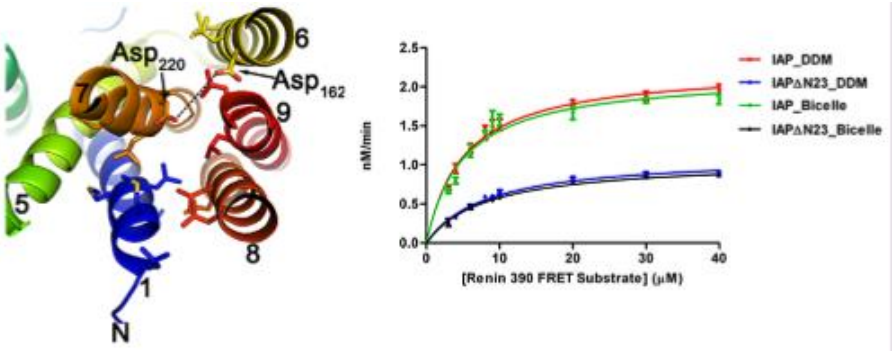
Citation: Naing et al. ACS Chem Biol 2015,ASAP

Catalytic Properties of Intramembrane Aspartyl Protease Substrate Hydrolysis Evaluated Using a FRET Peptide Cleavage Assay



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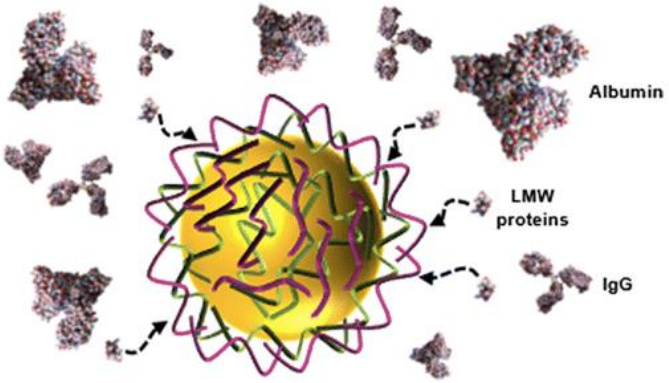
Citation: Khoury, L. R. et. al, *ACS Nano,* **2015**, 9 (6) 5750-5759

Harvesting Low Molecular Weight Biomarkers Using Gold Nanoparticles



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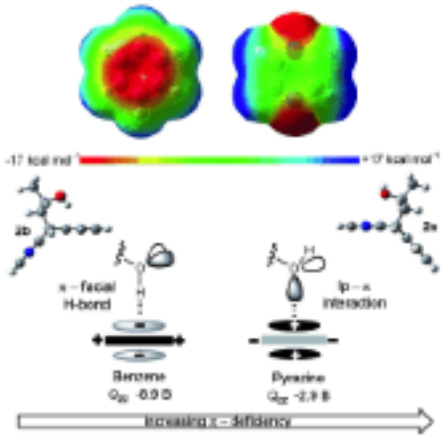
Citation: Citation: Pavlakos, I. et al. *Angew. Chem. Int. Ed.* **2015**, *54*, 8169

Noncovalent Lone Pair ---(No-Pi!)-Heteroarene Interactions: The Janus-Faced Hydroxy Group



Fatal attraction: The noncovalent interaction of a hydroxy group with pyrazines and quinoxalines involves a lone pair (lp)–heteroarene attraction which is stronger and solvent independent when measured relative to the π-facial hydrogen bond to a benzene ring. Organic fluorides also prefer the heteroarene ring over benzene. The attraction between a quinoxaline and a terminal alkyne is stronger than an OH–arene interaction.

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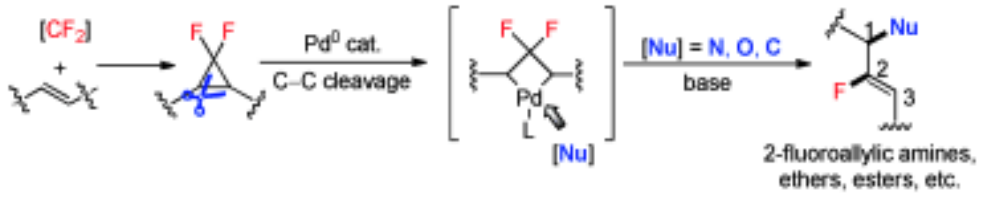
Citation: Xu, J. et al. *Angew. Chem. Int. Ed.* **2015**, *54*, 8231

Pd-Catalyzed Regioselective Activation of gem-Difluorinated Cyclopropanes: A Highly Efficient Approach to 2-Fluorinated Allylic Scaffolds



C[BOND]C bond cleavage under Pd catalysis induces a regioselective activation of gem-difluorinated cyclopropanes. The reaction provides access to a variety of 2-fluoroallylic scaffolds with high Z-selectivity and represents the first general application of gem-difluorinated cyclopropanes as reaction partners in transition-metal-catalyzed cross-coupling reactions.

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Citation: Yoshida, T. et al. *Angew. Chem. Int. Ed.* **2015**, *54*, 8241

Rhodium-Catalyzed [3+2+2] and [2+2+2] Cycloadditions of Two Alkynes with Cyclopropylideneacetamides (pages 8241–8244)

'Cat nap': The cationic RhI/H8-binap complex catalyzes the [3+2+2] cycloaddition of 1,6-diynes with cyclopropylideneacetamides to produce cycloheptadienes. In contrast, the cationic RhI/(S)-binap complex catalyzes the enantioselective [2+2+2] cycloaddition of terminal alkynes, acetylenedicarboxylates, and cyclopropylideneacetamides to produce spiro-cyclohexadienes.

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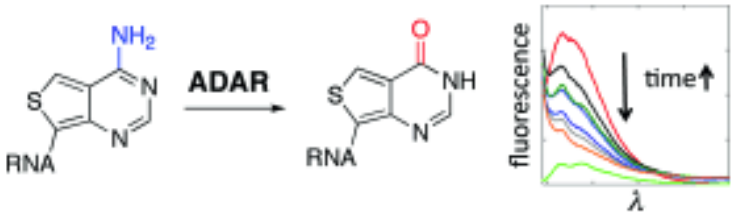
Citation: Mizrahi, R. et al. *Angew. Chem. Int. Ed.* **2015**, *54*, 8713

A Fluorescent Adenosine Analogue as a Substrate for an A-to-I RNA Editing Enzyme



The reactivity of ADAR2 enzyme with RNA containing the emissive adenosine analogue thieno[3,4-d]-6-aminopyrimidine (thA) was investigated. thA is recognized by AMV reverse transcriptase as A, and is deaminated rapidly by human ADAR2 to give thI. The ADAR reaction progress can be monitored by following the deamination-induced change in fluorescence of the thA-modified RNA.

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Citation: Bioconjugate Chem. 2015, 26 (7), 1158–1158.

Linking the Biological and Synthetic Worlds.
(editorial by Amos Smith)

The worlds of biological and synthetic chemistry both offer incredible diversity. Biology provides complex architec- tures including proteins, nucleic acids, and polysaccharides. These biomacromolecules have a wide range of applications in the life sciences, including as therapeutics and imaging agents. Synthetic chemistry, on the other hand, provides a tool for atom-by-atom control over molecular structure that can be used to obtain molecules and materials inaccessible through biology. Synthesis has contributed greatly to the life sciences through creation of an enormous range of drugs, dyes and other tools.

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Citation: Bioconjugate Chem. 2015, 26 (7), 1157–1157.

Biofunctional Biomaterials – The Next Frontier.
(editorial by Ahay Pandit)

Traditional medical devices only partially replicate the structural and biophysical properties of the tissues to be replaced. Clinical data indicate that these systems fail to recapitulate native tissue function, necessitating the develop- ment of new biofunctional tissue equivalents. The driving hypothesis of this research is that these biofunctional biomaterials will positively interact with the host and through their biophysical, biochemical, and/or biological cargo will stimulate the innate reparative machinery, thereby promoting functional repair and regeneration. Thus, biofunctional biomaterials are at the forefront of scientific and technological research and innovation.

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Citation: Biomacromolecules 2015, 16 (7), 1948–1957.	
Carbohydrate-Specific Uptake of Fucosylated Polymeric Micelles by Different Cancer Cell Lines.	bioorganic methods synthesis mechanism review other
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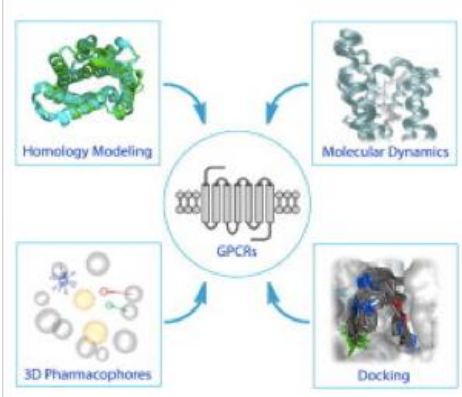
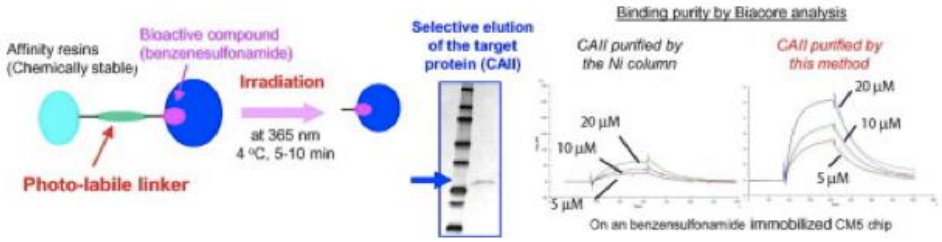
Citation: Biomacromolecules 2015, 16 (7), 2198–2208.	
Alkaline Phosphatase-Mimicking Peptide Nanofibers for Osteogenic Differentiation.	bioorganic methods synthesis mechanism review other
	OM Bryo DDO Hybrid Drug Deliv. Prostratin

Citation: Burmudez, M. et al. *Bioorg. Med. Chem*., 23, (2015) 3907-3912	
Structure versus function—The impact of computational methods on the discovery of specific GPCR–ligands 	**bioorganic** methods synthesis mechanism review other
	OM Bryo DDO Hybrid Drug Deliv. Prostratin

Citation: Mabuchi, M. et al. *Bioorg. Med. Chem. Lett*., 25, (2015) 3373-3377

Identification and purification of target protein using affinity resin bearing a photo-labile linker



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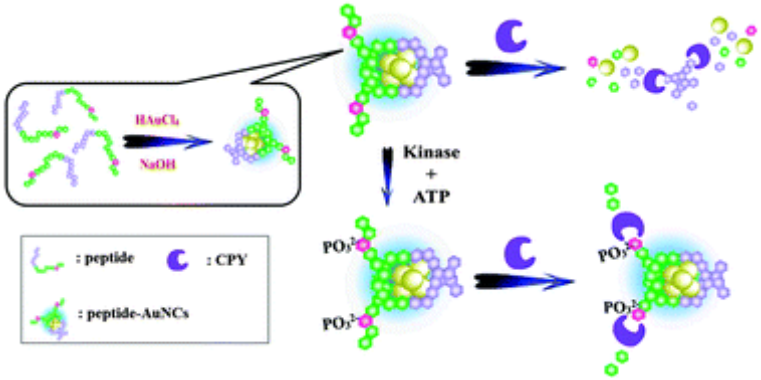
Citation: Song, W.; *et al. Chem. Commun.* **2015**, *51,* 10006.

Green synthesis of peptide-templated gold nanoclusters as novel fluorescence probes for detecting protein kinase activity



A green method was employed for synthesizing peptide-templated nanoclusters without requiring strong reducing agents. Using synthetic peptide–gold nanoclusters as fluorescence probes, a novel assay for detecting protein kinase activity was developed.

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Citation: Thompson, P.; *et al. Chem. Commun.* **2015**, *51,* 10214.

Linear synthesis and immunological properties of a fully synthetic vaccine candidate containing a sialylated MUC1 glycopeptide

A strategy for the linear synthesis of a sialylated glycolipopeptide cancer vaccine candidate has been developed using a strategically designed sialyl-Tn building block and microwave-assisted solid-phase peptide synthesis. The glycolipopeptide elicited potent humoral and cellular immune responses. T-cells primed by such a vaccine candidate could be restimulated by tumor-associated MUC1.

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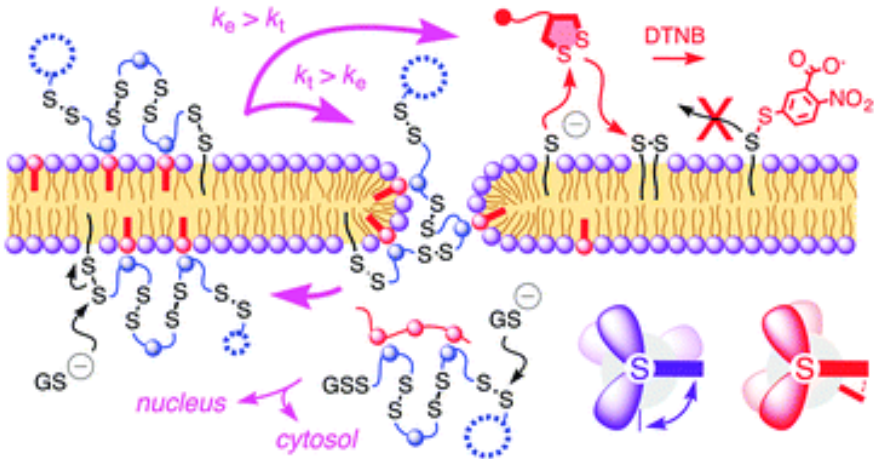
Citation: Gasparini, G.; *et al. Chem. Commun.* **2015**, *51,* 10389.

Cellular uptake: lessons from supramolecular organic chemistry



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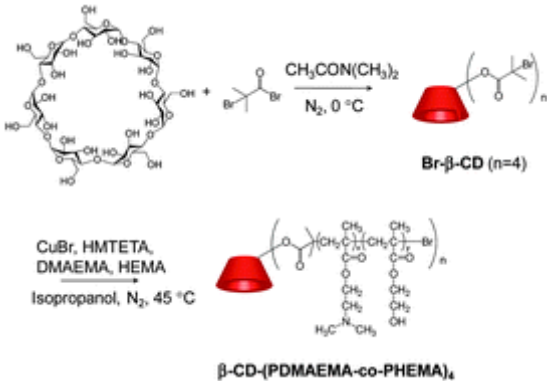
Citation: Loh, X. J.; Wu, Y.-L. *Chem. Commun.* **2015**, *51,* 10815.

Cationic star copolymers based on ß-cyclodextrins for efficient gene delivery to mouse embryonic stem cell colonies



A cationic star copolymer with a ß-cyclodextrin core was developed for nonviral gene transfer to mouse embryonic stem cells (mESCs). The copolymer comprises poly(2-dimethyl aminoethyl methacrylate) as the cationic component and poly(2-hydroxyethyl methacrylate) as the non-toxic stealth component. These materials have very low toxicity and show highly efficient transfection to mESC colonies.

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Citation: *C&E News*, http://goo.gl/LKuQO5

Chemists Increasingly Consider Residence Time in Drug Design

In drug discovery, researchers think a lot about how tightly a small molecule binds to its target. For a long time, drug developers have considered tightly binding compounds better, more promising drug candidates than molecules that interact weakly with their targets. So improving binding affinities is a critical aspect of medicinal chemistry and drug design.

Recently, an alternative parameter called residence time—how long a drug remains bound to its target—has been attracting growing interest. Although it isn't as well recognized or as widely used as binding affinity, some researchers think residence time may represent an equally important parameter to consider for predicting compounds' therapeutic potential and optimizing their properties. In fact, studies have shown that highly potent marketed drugs remain on their targets longer than those with lower efficacy.

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Citation: *C&E News*, http://goo.gl/ICKsi5

Trans Fat On Its Way Out

Food manufacturers must remove partially hydrogenated oils, the primary source of artery-clogging trans fat in foods, from the U.S. food supply by 2018, the Food & Drug Administration announced this week. Ridding partially hydrogenated oils from the food supply could prevent thousands of deaths from heart disease each year, the agency says.

(actual picture in C&E News)

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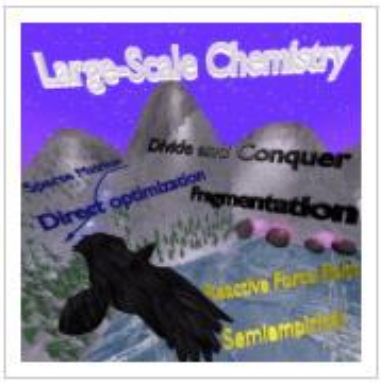
Citation: Akimov, A. V.; Prezhdo, O. V. *Chem. Rev*. **2015**, *115*, 5797.

Large-Scale Computations in Chemistry: A Bird's Eye View of a Vibrant Field



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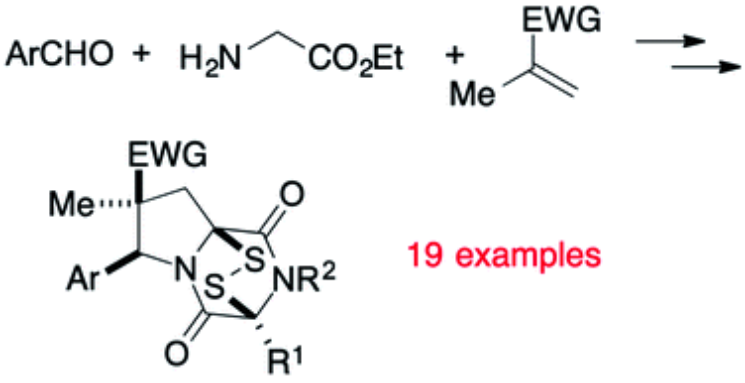
Citation: Baumann, M., et al. *Chem. Sci.* **2015**, 6, 4451-4457

Tricyclic analogues of epidithiodioxopiperazine alkaloids with promising *in vitro* and *in vivo* antitumor activity



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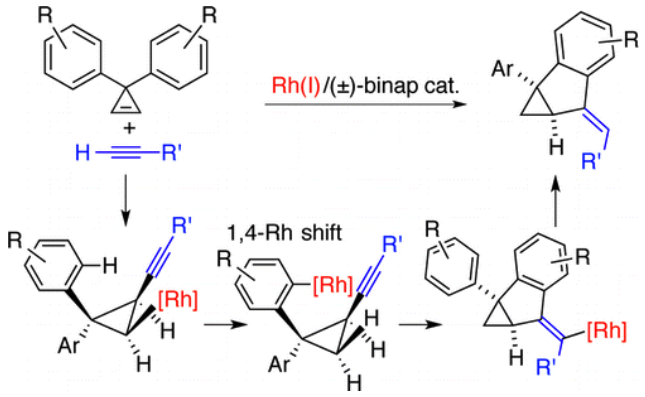
Citation: Mercado-Marin, E. V., et al. *Chem. Sci.* **2015**, 6, 5048-5052

Unified approach to prenylated indole alkaloids: total synthesis of (-)-17-hydroxy-citrinalin B, (+)-stephacidin A, and (+)-notoamide I



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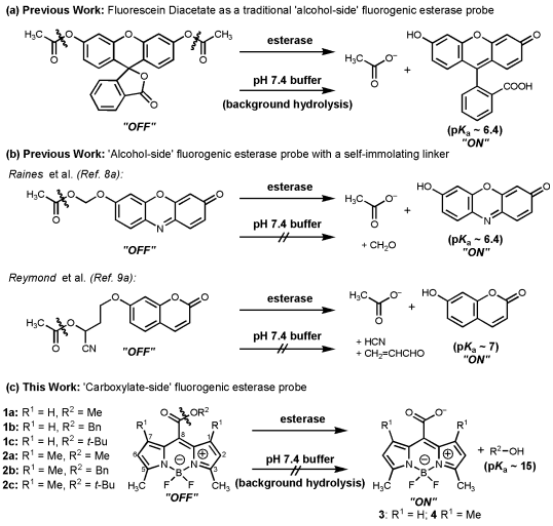
Citation: Kim, *et al. Chem. Eur. J.* **2015,** 21, 9645-9649.

A New Strategy for Fluorogenic Esterase Probes Displaying Low Levels of Non-specific Hydrolysis

Because the design relies on the enzyme-catalyzed hydrolysis of an ester group that is not electronically activated, these probes exhibit a stability to background hydrolysis that is far superior to classical alcohol-side profluorophore-based probes, large signal-to-noise ratios, reduced sensitivity to pH variations, and high enzymatic reactivity. The utility of probe 1a was established with a real-time fluorescence imaging experiment of endogenous esterase activity that does not require washing of the extracellular medium.



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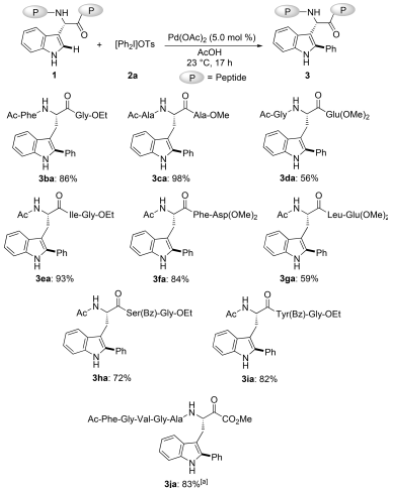
Citation: Zhu, *et al. Chem. Eur. J.* **2015,** 21, 9980-9983.

Late-Stage Peptide Diversification by Bioorthogonal Catalytic C-H Arylation at 23C in H2O

This group reported on the efficient late-stage C[BOND]H arylation of tryptophan-containing peptides by palladium catalysis under exceedingly mild reaction conditions.22 The operationally simple C-H functionalization protocol featured excellent site- and chemoselectivities, along with high catalytic efficacy at catalyst loading as low as 0.5mol%, and good functional-group tolerance. The strategy avoids any peptide prefunctionalization and bears great potential for peptide ligation and fluorescence labeling in aqueous media at ambient temperature.



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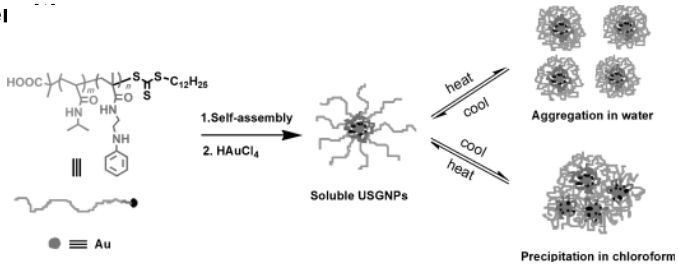
Citation: He, *et al. Chem. Eur. J.* **2015,** *21*, 10220-10225.

In Situ Formation of Dual-Phase Thermosel Ultrasmall Gold Nanoparticles



A novel method for the in situ synthesis of dual-phase thermosensitive ultrasmall gold nanoparticles (USGNPs) with diameters in the range of 1~3nm was developed by using poly(N-isopropylacrylamide)-block-poly(N-phenylethylenediamine methacrylamide) (PNIPAM-b-PNPEDMA) amphiphilic diblock copolymers as ligands. The PNPEDMA promotes the in situ reduction of gold precursors to zero-valent gold and subsequently binds to the surface of gold nanoparticles, while PNIPAM acts as a stabilizing and thermosensitive block. The USGNPs stabilized by a thermosensitive PNIPAM layer exhibit a sharp, reversible, clear-opaque transition in aqueous solution between 30 and 38C. An unprecedented finding is that these USGNPs also show a reversible soluble-precipitate transition in nonpolar organic solvents such as chloroform at around 0C under acidic conditions.

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Citation: Jud, *et al. Chem. Eur. J.* **2015,** 21, 10400-0407.

Expanding the Scope of 2'-SCF3 Modified RNA

So far, only RNA with 2'-SCF3 modified pyrimidine nucleosides has been accessible by chemical synthesis. The syntheses of the novel 2'-SCF3 purine nucleoside phosphoramidites and the corresponding RNAs has been demonstrated in this work and significantly expands the scope of applications for this modification. Their excellent behavior in 19FNMR probing of structure preformation and ligand binding was exemplified for the preQ1 class-I riboswitch and for melting of an RNA duplex. Moreover, all 2'-SCF3-modified nucleosides cause thermodynamic destabilization when they reside in double helices. Since this property is reminiscent of unlocked nucleic acid" (UNA) which is widely used for siRNA technologies to minimize off-target effects, we have highlighted the principal potential of 2-SCF3 RNAs for siRNA design as a promising novel application of this modification.

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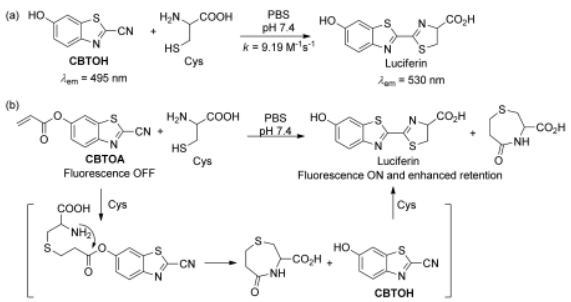
Citation: Zheng, *et al. Chem. Eur. J.* **2015,** 21, 10506-10512.

Cysteine-Mediated Intracellular Building of Luciferin to Enhance Probe Retention and Fluorescence Turn-On



This group reports a Cys-specific probe, 2-cyanobenzothiazol-6-yl acrylate (CBTOA), that shows not only fluorescence turn-on for sensitive detection of endogenous Cys but also enhanced probe retention inside cells for real-time monitoring of Cys levels upon external stimulation. CBTOA showed fast response to Cys in living cells and liver tissue slices with high sensitivity and selectivity. By using CBTOA as a real-time probe, we were able to monitor the change in Cys levels in living HeLa cells under ROS-induced oxidative stress as well as in human mesenchymal stem cells during adipogenic differentiation.

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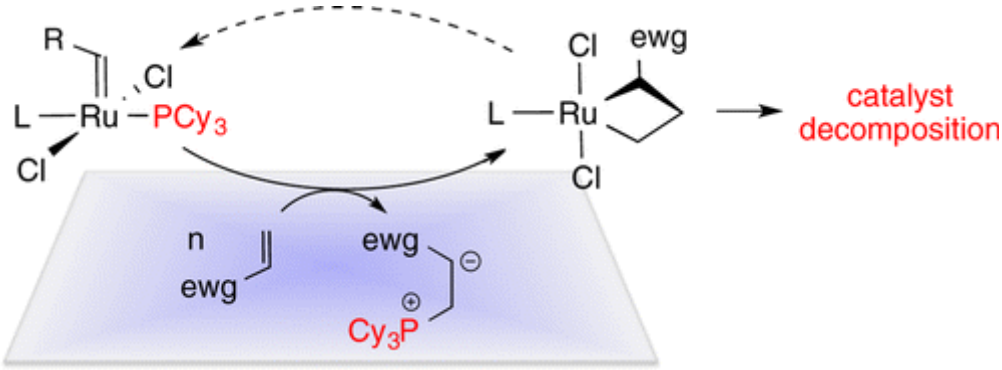
Citation: Gwendolyn A. Bailey and Deryn E. Fogg. *Journal of the American Chemical Society,* **2015,** 137 (23), 7318-7321

Acrylate Metathesis via the Second-Generation Grubbs Catalyst: Unexpected Pathways Enabled by a PCy3-Generated Enolate



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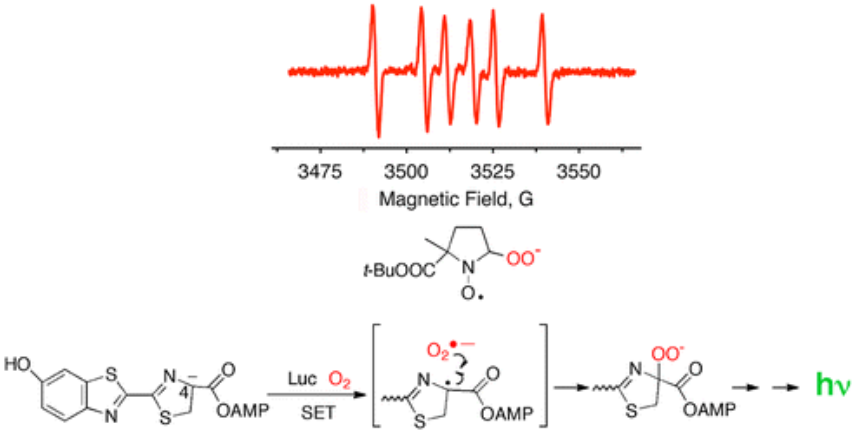
Citation: Branchini, B. R. et al. J. Am. Chem. Soc., 2015, 137 (24), pp 7592–7595

Experimental Support for a Single Electron-Transfer Oxidation Mechanism in Firefly Bioluminescence



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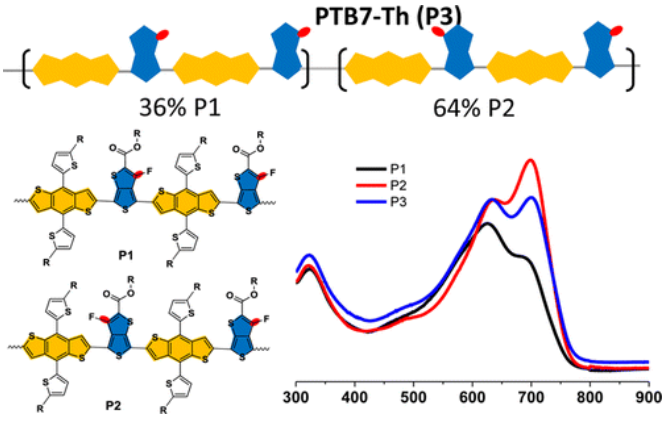
Citation: Zhong, H. et al. J. Am. Chem. Soc., 2015, 137 (24), pp 7616–7619

Influence of Regio- and Chemoselectivity on the Properties of Fluoro-Substituted Thienothiophene and Benzodithiophene Copolymers



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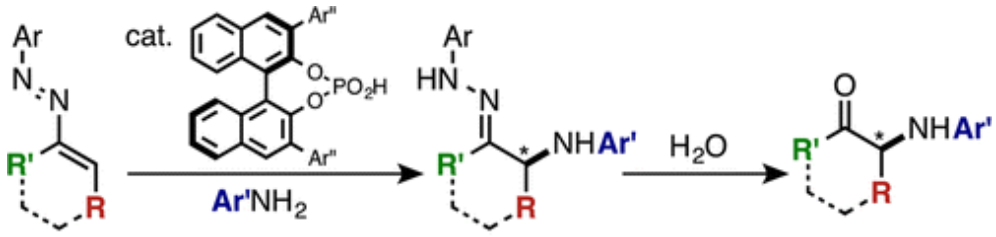
Citation: Miles, D. H. et al. J. Am. Chem. Soc., 2015, 137 (24), pp 7632–7635

A Nucleophilic Strategy for Enantioselective Intermolecular a-Amination: Access to Enantioenriched a-Arylamino Ketones



49-93% yield; 89-95% ee

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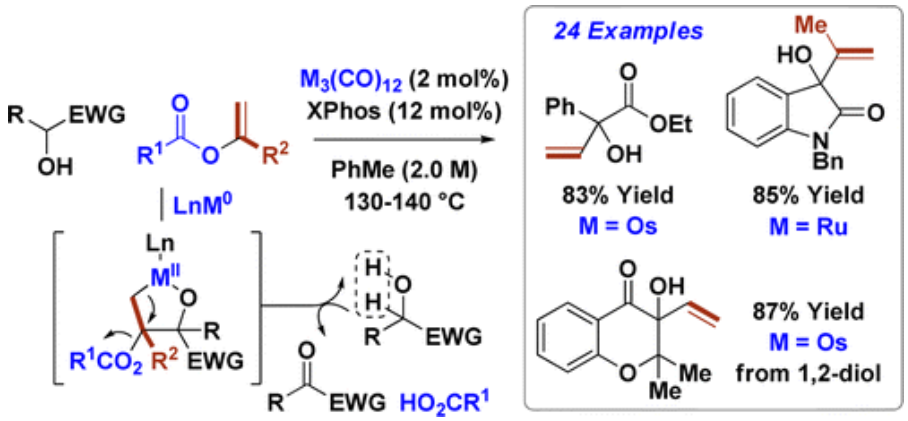
Citation: Park, B. Y. et al. J. Am. Chem. Soc., 2015, 137 (24), pp 7652–7655

A Metallacycle Fragmentation Strategy for Vinyl Transfer from Enol Carboxylates to Secondary Alcohol C–H Bonds via Osmium- or Ruthenium-Catalyzed Transfer Hydrogenation



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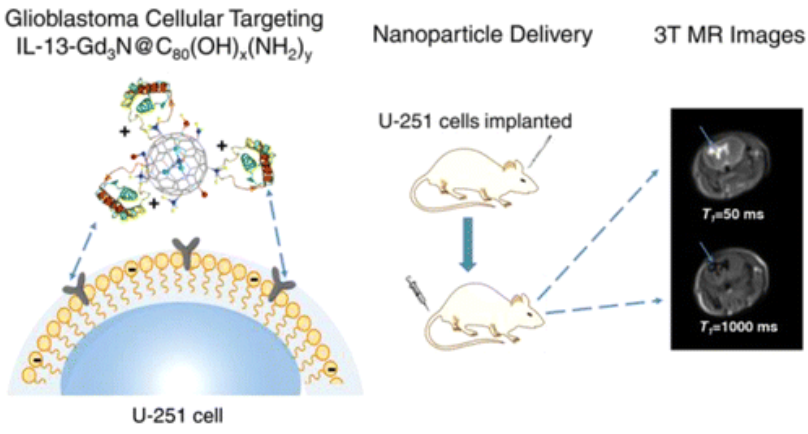
Citation: Li, T. et al. J. Am. Chem. Soc., 2015, 137 (24), pp 7881–7888

A New Interleukin-13 Amino-Coated Gadolinium Metallofullerene Nanoparticle for Targeted MRI Detection of Glioblastoma Tumor Cells



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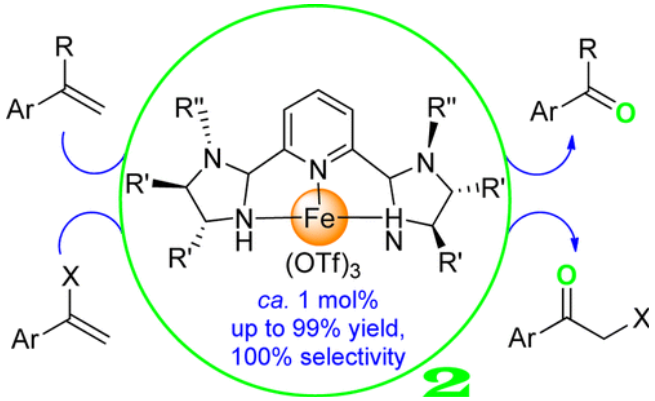
Citation: Angela Gonzalez-de-Castro and Jianliang Xiao, *Journal of the American Chemical Society,* **2015,** 137 (25), 8206-8218

Green and Efficient: Iron-Catalyzed Selective Oxidation of Olefins to Carbonyls with O2



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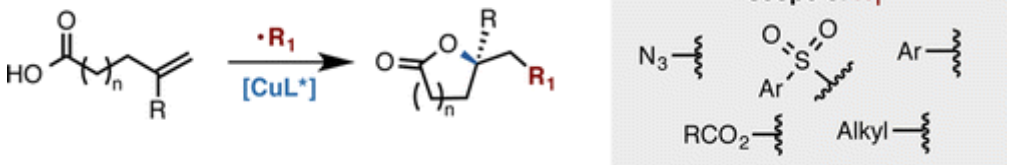
Citation: Rong Zhu and Stephen L. Buchwald. *Journal of the American Chemical Society,* **2015,** 137 (25), 8069-8077

Versatile Enantioselective Synthesis of Functionalized Lactones via Copper-Catalyzed Radical Oxyfunctionalization of Alkenes



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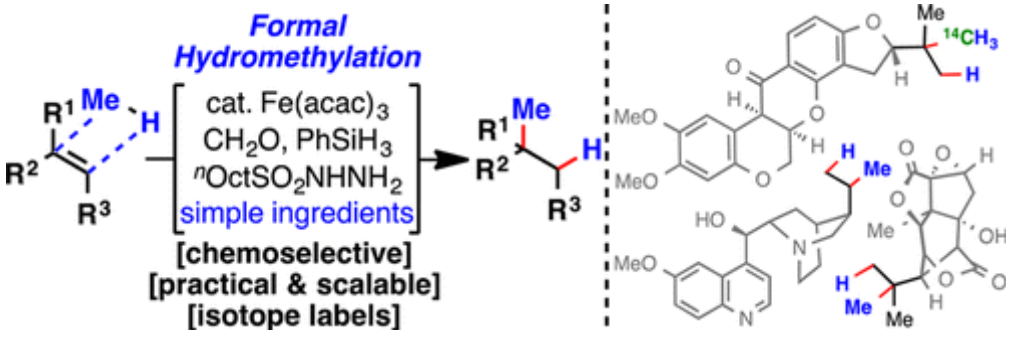
Citation: Hai T. Dao, Chao Li, Quentin Michaudel, Brad D. Maxwell, and Phil S. Baran. *Journal of the American Chemical Society*, **2015**, 137 (25), 8046-8049

Hydromethylation of Unactivated Olefins



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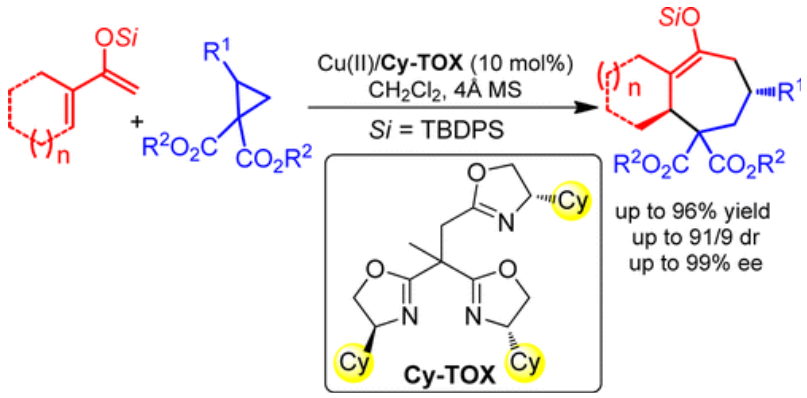
Citation: Hao Xu, Jiang-Lin Hu, Lijia Wang, Saihu Liao, and Yong Tang. *Journal of the American Chemical Society,* **2015**, 137 (25), 8006-8009

Asymmetric Annulation of Donor–Acceptor Cyclopropanes with Dienes



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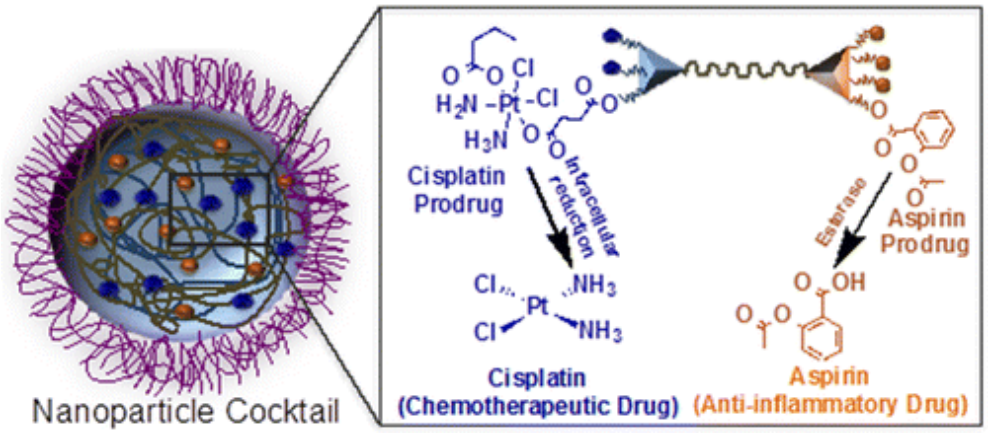
Citation: Pathak, R. K. et al. J. Am. Chem. Soc., 2015, 137 (26), pp 8324–8327

A Nanoparticle Cocktail: Temporal Release of Predefined Drug Combinations



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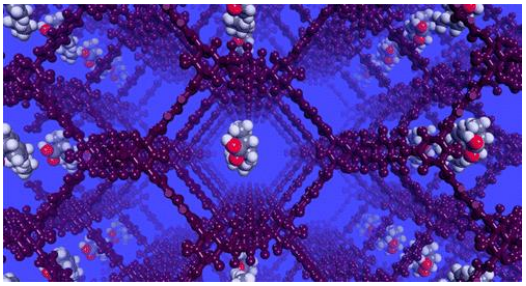
Citation: Fang, Q. et al. J. Am. Chem. Soc., 2015, 137 (26), pp 8352–8355

3D Porous Crystalline Polyimide Covalent Organic Frameworks for Drug Delivery



Three-dimensional porous crystalline polyimide covalent organic frameworks (termed PI-COFs) have been synthesized. These PI-COFs feature non- or interpenetrated structures that can be obtained by choosing tetrahedral building units of different sizes. Both PI-COFs show high thermal stability (>450 °C) and surface area (up to 2403 m2 g–1). They also show high loading and good release control for drug delivery applications.

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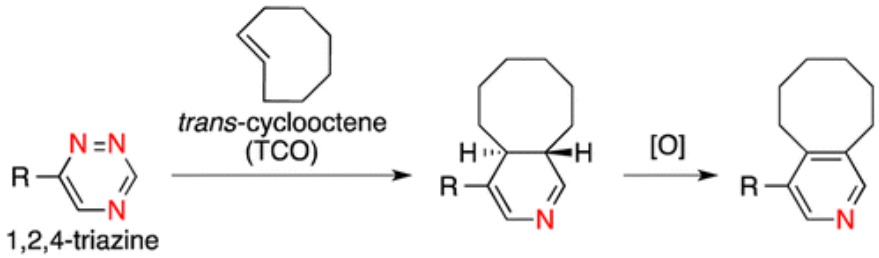
Citation: Kamber, D. A. et al. J. Am. Chem. Soc., 2015, 137 (26), pp 8388–8391

1,2,4-Triazines Are Versatile Bioorthogonal Reagents



- inert to cysteine
- reacts selectively with TCO
- suitable for recombinant protein production

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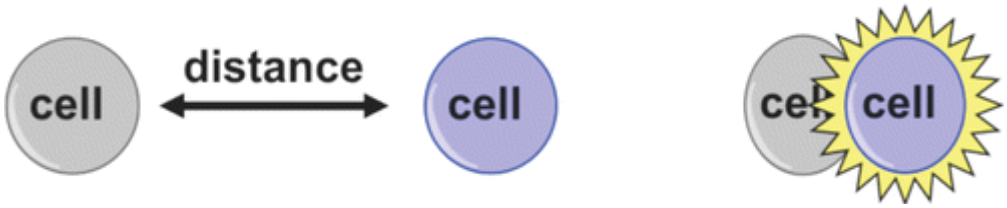
Citation: William B. Porterfield, Krysten A. Jones, David C. McCutcheon, and Jennifer A. Prescher. *Journal of the American Chemical Society*, **2015**, 137 (27), 8656-8659

A "Caged" Luciferin for Imaging Cell–Cell Contacts



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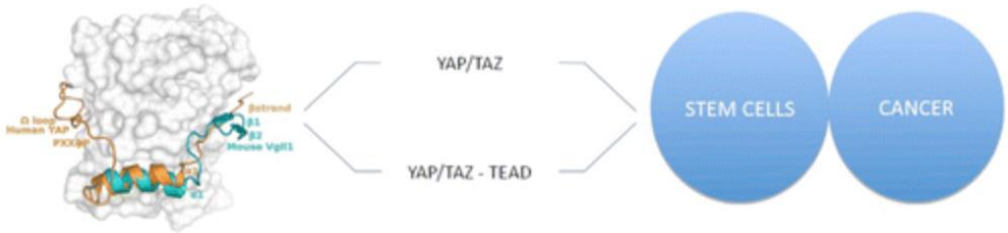
Citation: Santucci, M.; *et al. J. Med. Chem.* **2015**, 58 (12), 4857-4873.

The Hippo Pathway and YAP/TAZ-TEAD Protein-Protein Interaction as Targets for Regenerative Medicine and Cancer Treatment



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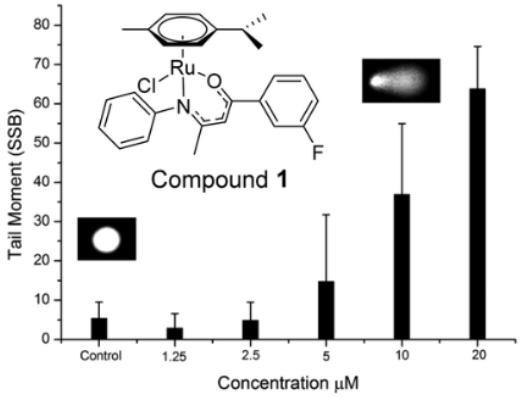
Citation: Lord, R. M.; *et al. J. Med. Chem.* **2015**, 58 (12), 4940-4953

Hypoxia-Sensitive Metal B-Ketoiminato Complexes Showing Induced Single-Strand DNA Breaks and Cancer Cell Death by Apoptosis



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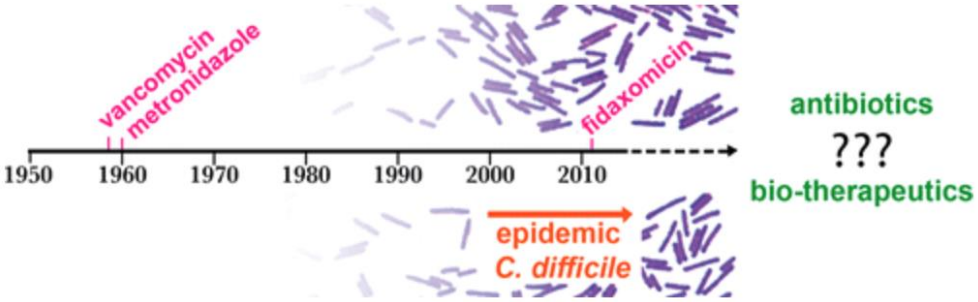
Citation: Jarrad, A. M.; *et al. J. Med. Chem.* **2015**, 58 (13), 5164-1585

***Clostridium difficile* Drug Pipeline: Challenges in Discovery and Development of New Agents**



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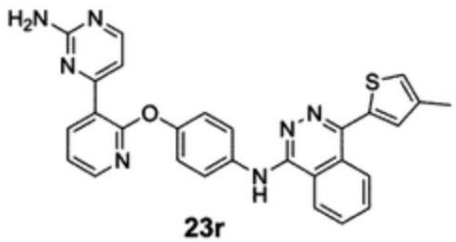
Citation: Geuns-Meyer, S.; *et al. J. Med. Chem.* **2015**, 58 (13), 5189-5207

Discovery of *N*-(4-(3-(2-Aminopyrimidin-4-yl)pyridin-2-yloxy)phenyl)-4-(4-methylthiophen-2-yl)phthalazin-1-amine (AMG 900), A Highly Selective, Orally Bioavailable Inhibitor of Aurora Kinases with Activity against Multidrug-Resistant Cancer Cell Lines



23r

Cell Line	EC_{50} (nM)
CAL51 (Non-MDR)	2
MES-SA Dx5 (MDR)	1
HCT15 (MDR)	2
SNU449 (MDR)	2
769P (MDR)	2

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Citation: Mol. Pharmaceutics 2015, 12 (7), 2352–2364.

Evaluation of Histidylated Arginine-Grafted Bioreducible Polymer To Enhance Transfection Efficiency for Use as a Gene Carrier

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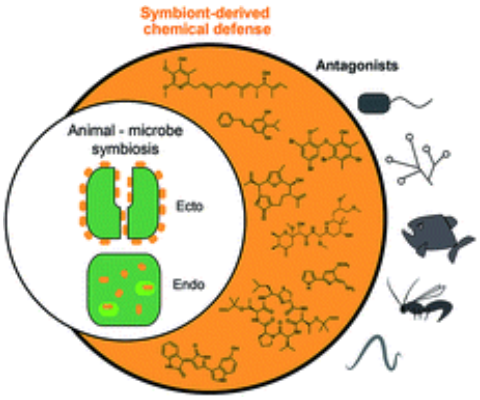
Citation: Floréz, L. B. et al. *Nat. Prod. Rep.* **2015**, 32, 904-936

Defensive symbioses of animals with prokaryotic and eukaryotic microorganisms



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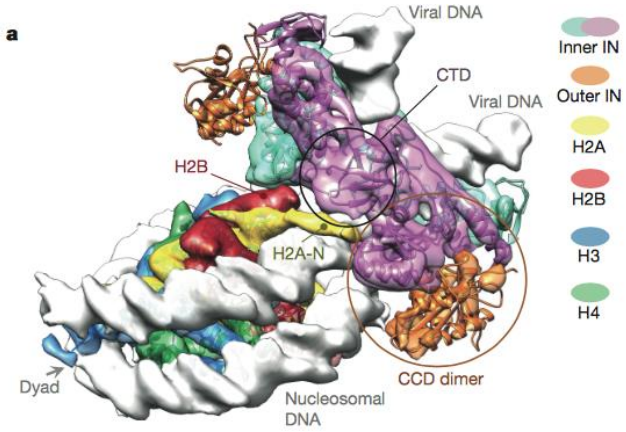
Citation: Maskell, D. P. et al. *Nature*. **2015**, *523*, 366.

Structural basis for retroviral integration into nucleosomes



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Citation: Caskey, M. et al. *Nature*. **2015**, *522*, 487.

Viraemia suppressed in HIV-1-infected humans by broadly neutralizing antibody 3BNC117

HIV-1 immunotherapy with a combination of first generation monoclonal antibodies was largely ineffective in pre-clinical and clinical settings and was therefore abandoned[1, 2, 3]. However, recently developed single-cell-based antibody cloning methods have uncovered a new generation of far more potent broadly neutralizing antibodies to HIV-1 (refs 4, 5). These antibodies can prevent infection and suppress viraemia in humanized mice and nonhuman primates, but their potential for human HIV-1 immunotherapy has not been evaluated[6, 7, 8, 9, 10]. Here we report the results of a first-in-man dose escalation phase 1 clinical trial of 3BNC117, a potent human CD4 binding site antibody[11], in uninfected and HIV-1-infected individuals.

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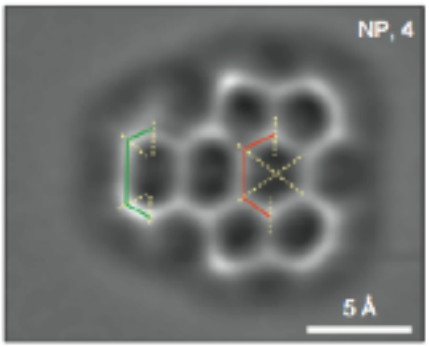
Citation: Pavlicek, N. et al. *Nat. Chem.* **2015** (July 13) ADVANCE ONLINE PUBLICATION

On-surface generation and imaging of arynes by atomic force microscopy



Here, we demonstrate the generation and characterization of individual polycyclic aryne molecules on an ultrathin insulating film by means of low-temperature scanning tunnelling microscopy and atomic force microscopy. Bond-order analysis suggests that a cumulene resonance structure is the dominant one, and the aryne reactivity is preserved at cryogenic temperatures. Our results provide important insights into the chemistry of these elusive intermediates and their potential application in the field of on-surface synthesis.

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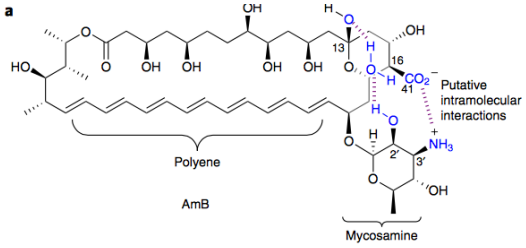
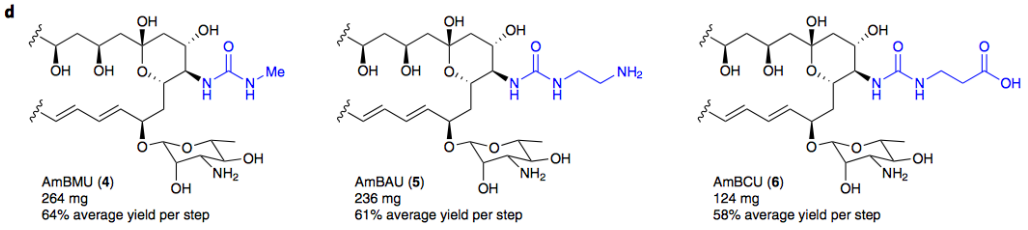
Citation: Burke, M.D., et al. nature CHeMICaL BIOLOGY | vol 11 | JUlY 2015, 481.

nontoxic antimicrobials that evade drug resistance





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Citation: Yang, et al. nature CHeMICaL BIOLOGY | vol 11 | JUlY 2015, 518

structural mechanism underlying capsaicin binding and activation of the trpV1 ion channel

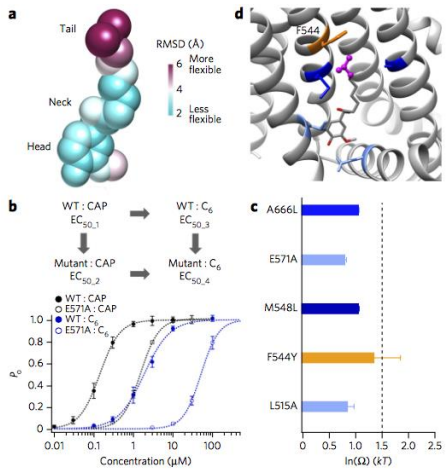

Figure 3 | The tail is flexible and forms nonspecific interactions with the channel. (**a**) Structural flexibility of capsaicin docked inside its binding

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Citation: http://www.nytimes.com/2015/07/06/opinion/bring-back-prostate-screening.html?_r=0

Bring Back Prostate Screening

Rather than use the historical arbitrary cutoff of a 4.0 PSA reading to define abnormal, we now have tools to adjust our interpretation of readings for age (PSA levels normally rise with age); for race (this, too, affects what is considered normal); and for the size of a man's prostate, which affects how much PSA he produces. We can test for how fast PSA levels rise over time. And we can analyze how PSA circulates in the bloodstream (free or bound to serum proteins), which can predict prostate cancer risk.

When we use these markers together, these varied interpretations of PSA levels give us a clearer picture of who does, or doesn't, need further testing.

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Citation: http://www.nytimes.com/2015/07/01/health/who-certifies-end-of-mother-to-child-transmission-of-hiv-in-cuba.html

Cuba Wins W.H.O. Certification It Ended Mother-to-Child H.I.V. Transmission

Cuba became the world's first country on Tuesday to win World Health Organization certification that it had eliminated mother-to-child transmission of both H.I.V. and syphilis. Despite its poverty, Cuba provides basic health care to all citizens. Since the 1980s it has successfully suppressed its H.I.V. epidemic, initially through forced quarantine and, since 1993, by widespread testing and treatment.

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Citation: http://www.nytimes.com/2015/06/12/business/dealbook/shares-of-axovant-alzheimers-drug-developer-surge-on-trading-debut.html

Shares of Axovant, Alzheimer's Drug Developer, Surge on Trading Debut

A 29-year-old former hedge fund manager has pulled off what is perhaps the largest initial public stock offering ever in the biotechnology industry, creating a company with a market value approaching $3 billion on the basis of an unproved drug for Alzheimer's disease that it acquired for $5 million.

The successful market debut of the company, Axovant Sciences, renewed concerns that biotech stocks, which have outperformed the overall markets for several years, are now in a bubble.

Axovant raised $315 million in its offering Wednesday, selling 21 million shares at $15 each. That was 3.1 million more shares than it had expected to sell and at the high end of the expected price range.

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Citation: http://www.theonion.com/article/worlds-frogs-unveil-5-million-year-plan-move-food--50750

World's Frogs Unveil 5-Million-Year Plan to Move Up Food Chain

EARTH—Declaring that they had occupied a low-level rung in the global ecosystem for far too long, the world's frogs revealed Thursday an ambitious 5-million-year plan to move up the food chain.

According to frogs, the long-term, multipronged strategy will include a series of dietary, cognitive, behavioral, and morphological adaptations designed to help them as they evolve to inhabit a higher place in the biosphere's order of predation. Provided they adhere to the developmental benchmarks they set out and run into few obstacles, frogs said they ultimately envision themselves at a tier of the food chain on par with hawks and ocelots.

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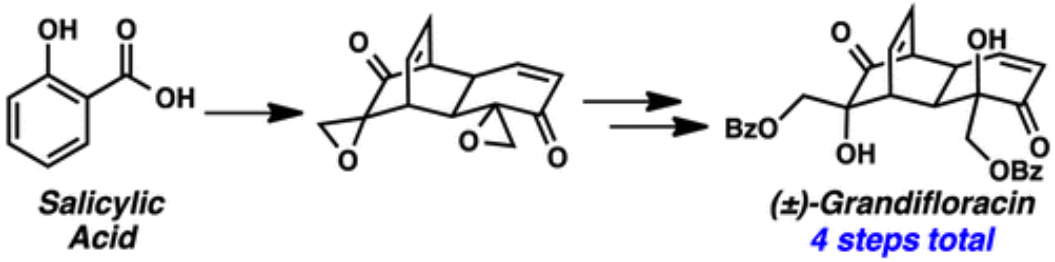
Citation: Bergner, M., et al. *Org. Lett.* **2015**, 17, 3008-3010

Exceedingly Efficient Synthesis of (±)-Grandifloracin and Acylated Analogues



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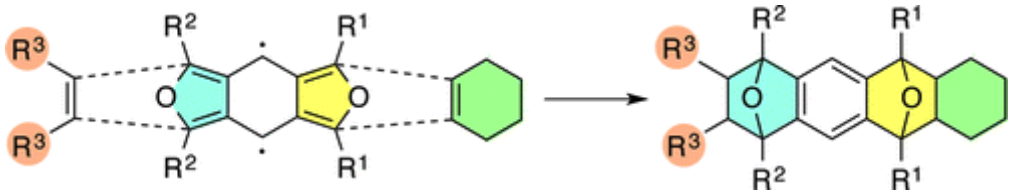
Citation: Akita, R., et al. *Org. Lett.* **2015**, 17, 3094-3097

Ring Selective Generation of Isobenzofuran for Divergent Access to Polycyclic Aromatic Compounds



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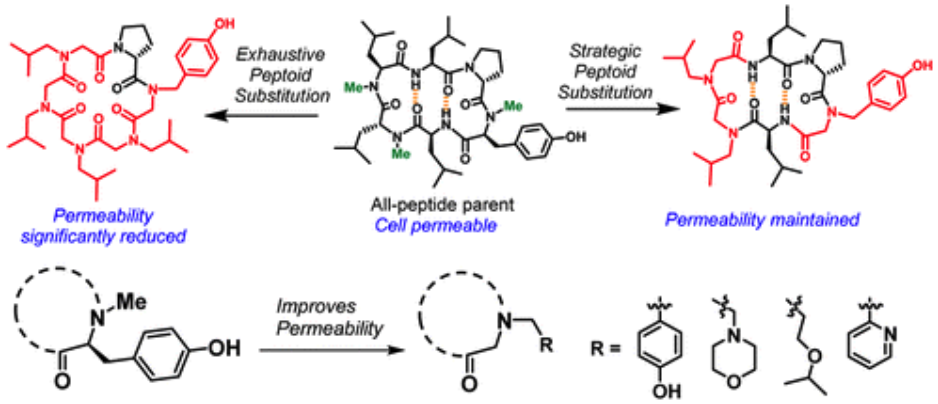
Citation: Schwochert, J., et al. *Org. Lett.* **2015**, 17, 2928-2931

Peptide to Peptoid Substitutions Increase Cell Permeability in Cyclic Hexapeptides



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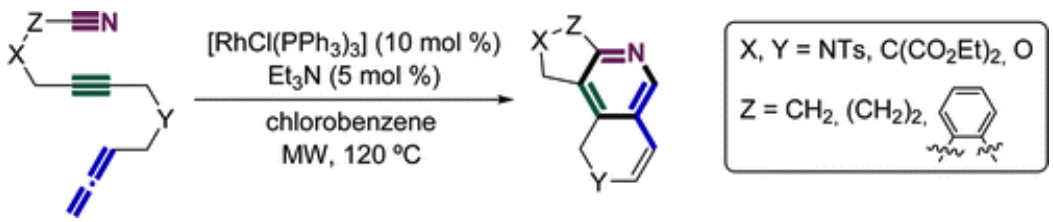
Citation: Haraburda, E., et al. *Org. Lett.* **2015**, 17, 2882-2885

Dehydrogenative [2+2+2] Cycloaddition of Cyano-yne-allene Substrates: Convenient Access to 2,6-Naphthyridine Scaffolds



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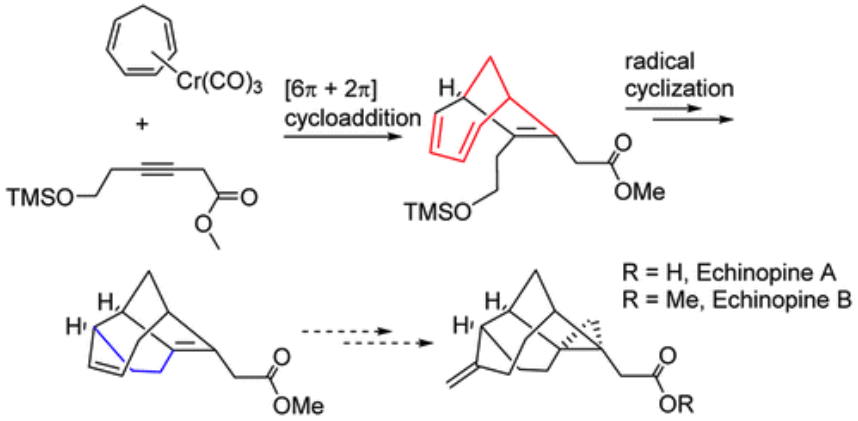
Citation: De, S., et al. *Org. Lett.* **2015**, 17, 3230-3232

Formal Total Synthesis of Echinopines A and B via Cr(0)-Promoted [6π + 2π] Cycloaddition



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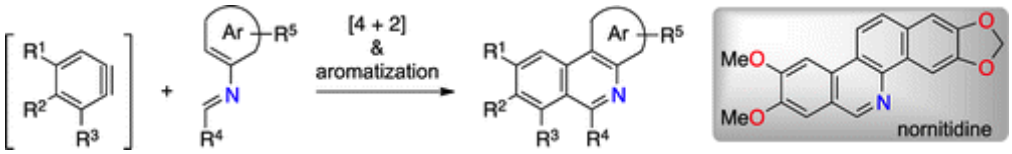
Citation: Castillo, J., et al. *Org. Lett.* **2015**, 17, 3374-3377

The Aryne-aza-Diels-Alder Reaction: Flexible Synthesis of Isoquinolines



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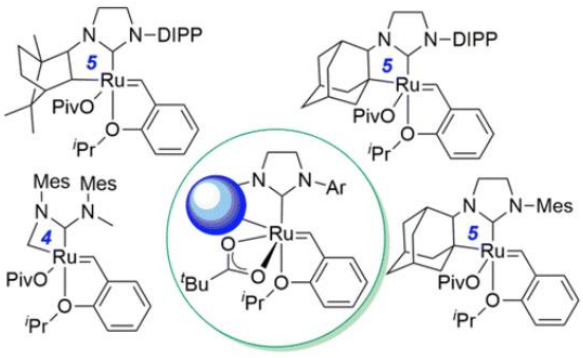
Citation: Herbert, M. B.; *et al*. *Organometallics* **2015**, 34 (12), 2858-2869

Cyclometalated *Z*-Selective Ruthenium Metathesis Catalysts with Modified N-Chelating Groups



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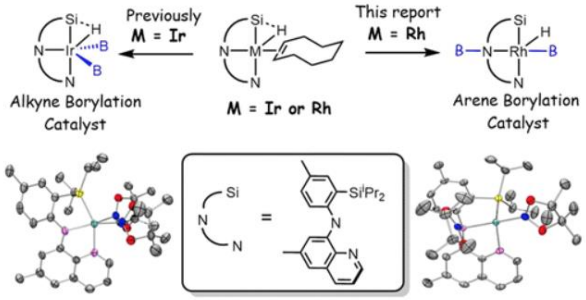
Citation: Lee, C-I.; *et al*. *Organometallics* **2015**, 34 (13), 3099-3102

Adaptability of the SiNN Pincer Ligand in Iridium and Rhodium Complexes Relevant to Borylation Catalysis



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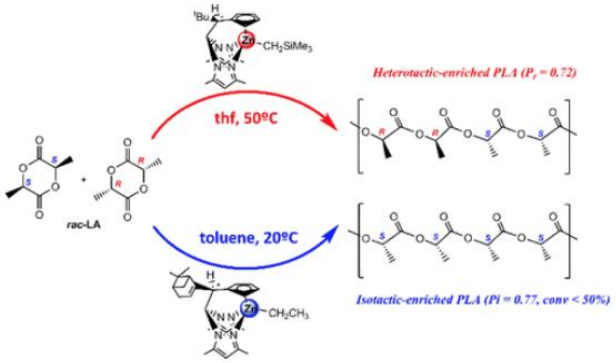
Citation: Honrado, M.; *et al*. *Organometallics* **2015**, 34 (13), 3196-3208

New Racemic and Single Enantiopure Hybrid Scorpionate/Cyclopentadienyl Magnesium and Zinc Initiators for the Stereoselective ROP of Lactides



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Citation: Hunter, T. *Proc. Natl. Acad. Sci. U.S.A.* **2015,** *112,* 7877-7882.

Discovering the first tyrosine kinase

In the middle of the 20th century, animal tumor viruses were heralded as possible models for understanding human cancer. By the mid-1970s, the molecular basis by which tumor viruses transform cells into a malignant state was beginning to emerge as the first viral genomic sequences were reported and the proteins encoded by their transforming genes were identified and characterized. This was a time of great excitement and rapid progress. In 1978, prompted by the discovery from Ray Erikson's group that the Rous sarcoma virus (RSV) v-Src–transforming protein had an associated protein kinase activity specific for threonine, Hunter's group at the Salk Institute set out to determine whether the polyomavirus middle T-transforming protein had a similar kinase activity.

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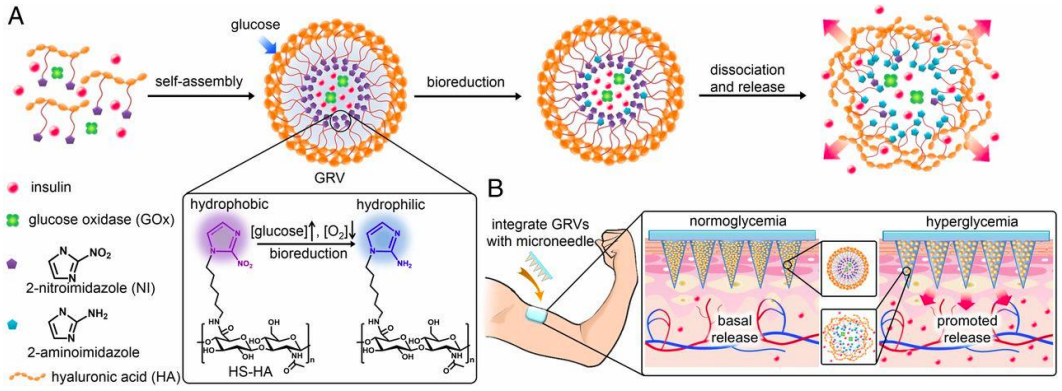
Citation: Yu, J.; *et al. Proc. Natl. Acad. Sci. U.S.A.* **2015,** *112,* 8260-8265.

Microneedle-array patches loaded with hypoxia-sensitive vesicles provide fast glucose-responsive insulin delivery



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Citation: Ke, Q.; Ferrara, E.; Radicchi, R.; Flammini, A. *Proc. Natl. Acad. Sci. U.S.A.* **2015,** *112,* 7426-7431.

Defining and identifying Sleeping Beauties in science

Scientific papers typically have a finite lifetime: their rate to attract citations achieves its maximum a few years after publication, and then steadily declines. Previous studies pointed out the existence of a few blatant exceptions: papers whose relevance has not been recognized for decades, but then suddenly become highly influential and cited. The Einstein, Podolsky, and Rosen "paradox" paper is an exemplar Sleeping Beauty. The authors study how common Sleeping Beauties are in science. The authors introduce a quantity that captures both the recognition intensity and the duration of the "sleeping" period, and show that Sleeping Beauties are far from exceptional.

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Citation: *Science*, **2015**, *349* (6243), 24-27.

Postdocs Reimagined

In April, we asked young scientists if the idea of the postdoc position is obsolete. If so, what should replace it, and if not, how can it be improved? We received a record response of more than 300 submissions. About a third of respondents felt that postdocs are indeed obsolete. The rest deemed them necessary, if imperfect. Many felt that creating a permanent staff scientist position, with full salary and benefits, would help the plight of postdocs, either by replacing the postdoc entirely or by serving as a long-term option after the completion of a postdoc. Others suggested that a system in which postdocs had dedicated funding and were not beholden to a PI would foster more creativity and minimize exploitation. Tailoring postdocs to a broader array of career paths was another common theme. Many responses reflected the feeling that postdocs deserve more respect and recognition. A sample of the responses describing these and other ideas can be found below. To allow for as many voices as possible, in some cases we have printed excerpts of longer submissions (indicated by ellipses) and lightly copyedited original text for clarity. To read the complete versions, as well as many more, go to http://scim.ag/NG15R.

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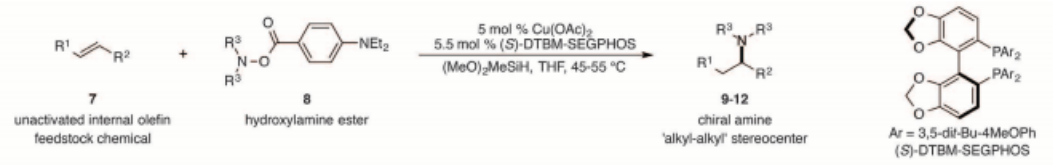
Citation: Yang, Y.; Shi, S.-L.; Niu, D.; Liu, P.; Buchwald, S.L. *Science*, **2015**, *349* (6243), 62-66.

Catalytic asymmetric hydroamination of unactivated internal olefins to aliphatic amines



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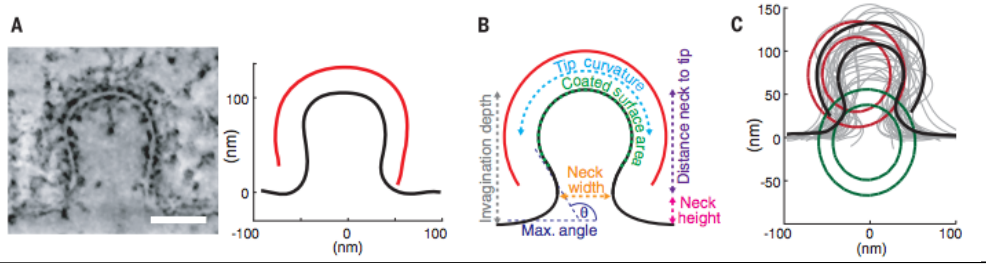
Citation: Avinoam, O.; Schorb, M.; Beese, C.J.; Briggs, J.A.G.; Kaksonen, M. *Science*, **2015**, *348* (6241), 1369-1372.

Endocytotic sites mature by continuous bending and remodeling of the clathrin coat

During clathrin-mediated endocytosis (CME), plasma membrane regions are internalized to retrieve extracellular molecules and cell surface components. Whether endocytosis occurs by direct clathrin assembly into curved lattices on the budding vesicle or by initial recruitment to flat membranes and subsequent reshaping has been controversial



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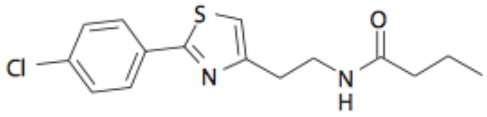
Citation: Fu et al. Science Trns Medicine. June 2015 Vol 7 Issue 292 292ra98

Phenotypic assays identify azoramide as a small-molecule modulator of the unfolded protein response with antidiabetic activity



Azoramide:
N-[2-[2-(4-chlorophenyl)
thiazol-4-y]ethyl]butanamide
MW: 308

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Citation: Hasanali et al. Science Trns Medicine. 2015, Vol 7 Issue 293 293ra102

Epigenetic therapy overcomes treatment resistance in T cell prolymphocytic leukemia

We present a case series of eight T-PLL patients who were treated with cladribine, vorinostat/romidepsin/valproic acid, and alemtuzumab. We report overcoming alemtuzumab resistance with these epigenetic drugs in T cell prolymphocytic leukemia. Our findings demonstrate activity of combination epigenetic and immunotherapy in the incurable illness T-PLL, particularly in the setting of previous alemtuzumab therapy.

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Citation: S*cience Translational Medicine* 01 Jul 2015: Vol. 7, Issue 294, pp. 294ec112

EPR or no EPR? The billion-dollar question

This is just an editor's choice that highlights the original research article in ACS Nano (*ACS Nano* 10.1021/acsnano.5b01324), but I couldn't resist including it here because I feel like we have this debate every DD seminar.

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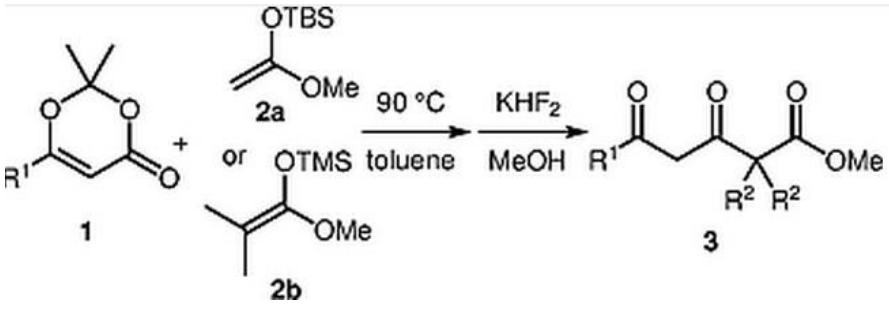
Citation: Wang, Q.; List, B. *Synlett* **2015**, *26*(11), 1525.

A Mukaiyama–Claisen Approach to 3,5-Diketo Esters



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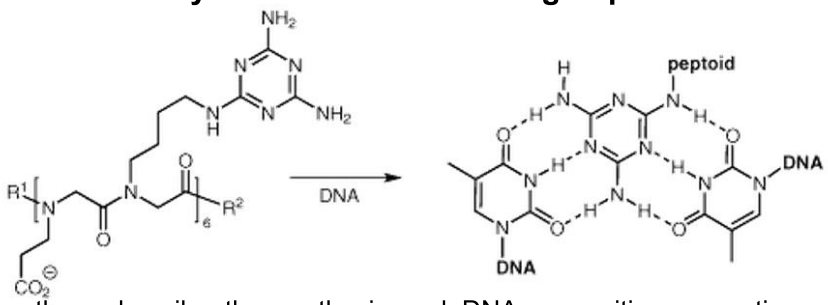
Citation: Mao, J.; Bong, D. *Synlett* **2015**, *26*(11), 1581.

Synthesis of DNA-Binding Peptoids



The authors describe the synthesis and DNA recognition properties of peptoid backbones bearing the bifacial synthetic nucleobase melamine. These 'peptoid nucleic acids' hybridize with thymine-rich DNA, like their peptide cognate (bPNA). DNA complexation is highly sensitive to peptoid side-chain length and overall charge. Peptoids isomeric with peptide bPNA were less efficient at DNA recognition, possibly due to conformational and steric differences.

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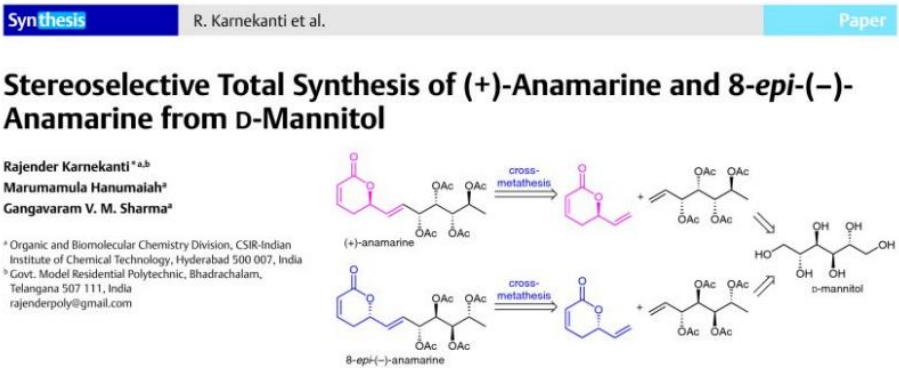
Citation: **Synthesis 2015, 47, A-L**



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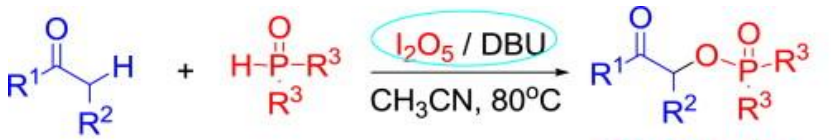
Citation: Liu, C. et al. *Tetrahedron* **2015**, In Press.

I_2O_5/DBU mediated direct α-phosphoryloxylation of ketones with H-phosphonates leading to α-hydroxyketone phosphates



20 examples
up to 80% yields

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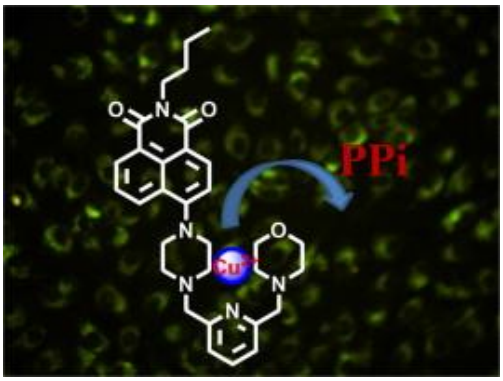
Citation: Xu, Z. et al. *Tetrahedron* **2015**, *71*, 5055-5058.

A naphthalimide-based fluorescent probe for highly selective detection of pyrophosphate in aqueous solution and living cells



A naphthalimide-based fluorescent ensemble probe NPM-Cu for selectively detecting PPi in aqueous solution (10 mM HEPES, pH 7.4) has been developed. Moreover, the application of NPM-Cu in living cells fluorescence imaging was carried out as well.

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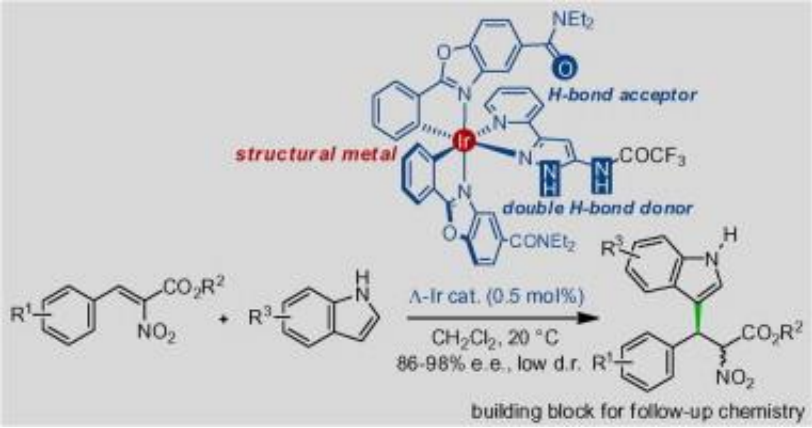
Citation: **J Liu, L Gong, E Meggers. Tetrahedron Lett. 2015, 56, 4653**

Asymmetric Friedel–Crafts alkylation of indoles with 2-nitro-3-arylacrylates catalyzed by a metal-templated hydrogen bonding catalyst



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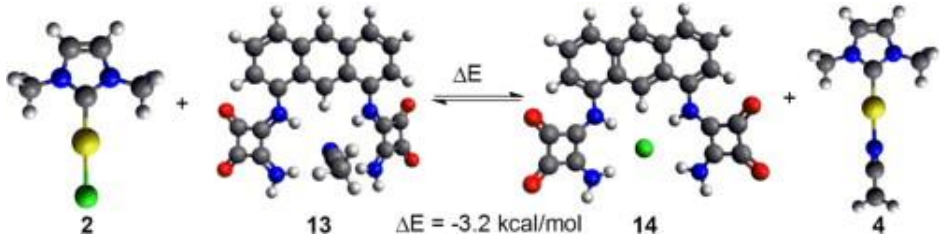
Citation: **BW Gung, SC Schlitzer. Tetrahedron Letters. In Press, Accepted Manuscript.**

Can Hydrogen-Bonding Donors Abstract Chloride from LAu(I)Cl Complexes: A Computational Study



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