

# SPOTLIGHTS ...

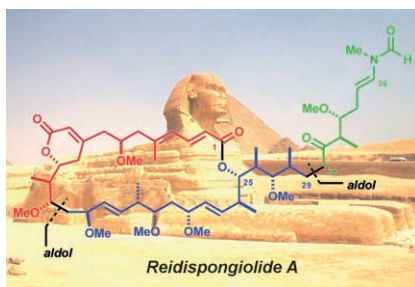
## Natural Products Synthesis

I. Paterson,\* K. Ashton, R. Britton,  
G. Cecere, G. Chouraqui,  
G. J. Florence, H. Knust, J. Stafford

### Total Synthesis of (–)-Reidispongiolide A, an Actin-Targeting Macrolide Isolated from the Marine Sponge *Reidispongia coerulea*

*Chem. Asian J.*

DOI: 10.1002/asia.200700357



**An answer fit for the Sphinx:** The stereocontrolled total synthesis of (–)-reidispongiolide A uses an aldol-based strategy to construct the macrolactone and coupling of a derived aldehyde with an *N*-vinylformamide-containing ketone to install the full side chain. There are two possible routes to introduce the *2E,4E* dienoate, and a fragment coupling by using a Mukaiyama aldol reaction installs the C13 stereo-center.

## Antitumor Agents

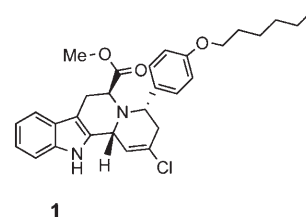
F. Wehner,\* A. Nören-Müller,  
O. Müller, I. Reis-Corrêa, Jr.,  
A. Giannis, H. Waldmann

### Indoloquinolizidine Derivatives as Novel and Potent Apoptosis Inducers and Cell-Cycle Blockers

*ChemBioChem*

DOI: 10.1002/cbic.200700558

**A view to a kill:** 11 000 natural-product-derived and -inspired compounds were screened for potential apoptosis inducers in three human tumour cell lines. Seven indoloquinolizidine derivatives, one of which is shown in the figure, were identified. These compounds had IC<sub>50</sub> values as low as 2 μmol L<sup>–1</sup> for inhibiting cell proliferation. Further analysis indicated that these effects were related to an arrest of cells in the G<sub>2</sub>M phase of the cell cycle.



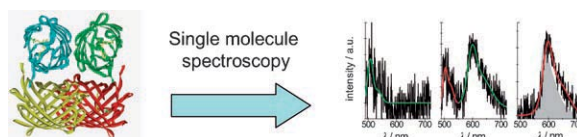
## Fluorescent Proteins

C. Blum,\* A. J. Meixner,  
V. Subramaniam\*

### Spectral Versatility of Single Reef Coral Fluorescent Proteins Detected by Spectrally-Resolved Single Molecule Spectroscopy

*ChemPhysChem*

DOI: 10.1002/cphc.200700784



**Exciting chromophores:** Spectrally resolved single-molecule spectroscopy of members of the DsRed family of fluorescent proteins enables identification and characterization of different spectral forms for all variants (see picture).

The transitions between different spectral forms are also followed, drawing conclusions on the underlying molecular origins of the various spectral species.

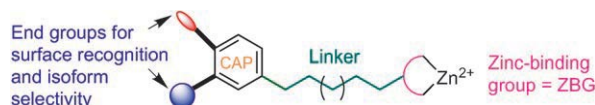
## Drug Design

A. P. Kozikowski,\* Y. Chen,  
A. M. Gaysin, D. N. Savoy,  
D. D. Billadeau, K. H. Kim

### Chemistry, Biology, and QSAR Studies of Substituted Biaryl Hydroxamates and Mercaptoacetamides as HDAC Inhibitors—Nanomolar-Potency Inhibitors of Pancreatic Cancer Cell Growth

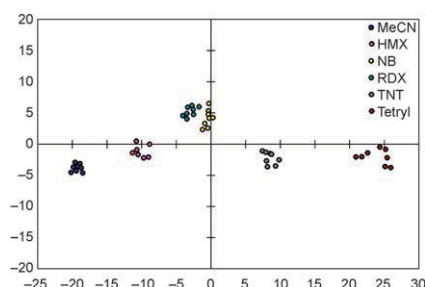
*ChemMedChem*

DOI: 10.1002/cmdc.200700314



**Isoform selectivity:** structurally unique HDAC inhibitors are equipped with an amino acid residue that serves as a potential isoform-differentiating, surface-recognition element. The surface-rec-

ognition group is connected through the usual carbon linker to either a hydroxamate or a mercaptoacetamide group that chelates the catalytic site zinc ion.



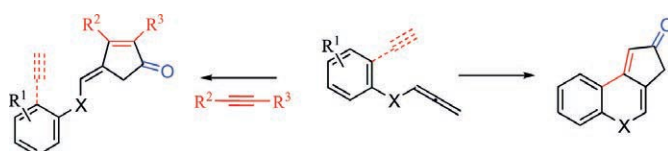
**Sensing with suds:** Using pattern recognition, commercially available fluorophores and surfactants are able to sense nitrated explosives with a detection limit of 19  $\mu\text{M}$  (see figure).

### Explosive Detection

A. D. Hughes, I. C. Glenn,  
A. D. Patrick, A. Ellington,  
E. V. Anslyn\*

**A Pattern Recognition Based  
Fluorescence Quenching Assay for the  
Detection and Identification of  
Nitrated Explosive Analytes**

*Chem. Eur. J.*  
DOI: [10.1002/chem.200701546](https://doi.org/10.1002/chem.200701546)



Pauson-Khand reactions of functionalized allenes with different alkynes give monocyclic cyclopentenones with generally high regio- and stereoselectivities. The allenes react with the external double bonds, giving cyclopentenones

with exocyclic double bonds at their  $\beta$  positions, mainly with *E* stereochemistry. Some intramolecular reactions with allenes connected through aromatic rings are described.

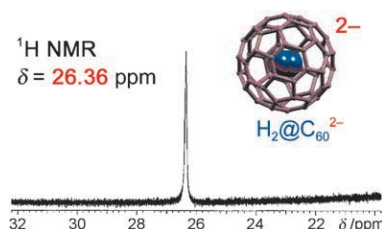
### Allenic Pauson-Khand Reactions

Á. González-Gómez, L. Añorbe,  
A. Poblador, G. Domínguez,  
J. Pérez-Castells\*

**Intermolecular and Intramolecular  
Pauson-Khand Reactions of  
Functionalized Allenes**

*Eur. J. Org. Chem.*  
DOI: [10.1002/ejoc.200701038](https://doi.org/10.1002/ejoc.200701038)

**Inside information:** The NMR signal of the molecular hydrogen in  $\text{H}_2@\text{C}_{60}^{2-}$  appears at extraordinarily low field ( $\delta = 26.36$  ppm) relative to that of neutral  $\text{H}_2@\text{C}_{60}$ . This can be explained by the decrease in aromaticity of the  $\text{C}_{60}$  cage upon 2e reduction. Spherical delocalization of the added two electrons over the  $\pi$  system of the fullerene cage is thought to be responsible for the drastic change in fullerene aromaticity.



### Aromaticity

M. Murata, Y. Ochi, F. Tanabe,  
K. Komatsu,\* Y. Murata\*

**Internal Magnetic Fields of Dianions  
of Fullerene  $\text{C}_{60}$  and Its Cage-Opened  
Derivatives Studied with Encapsulated  
 $\text{H}_2$  as an NMR Probe**

*Angew. Chem. Int. Ed.*  
DOI: [10.1002/anie.200705285](https://doi.org/10.1002/anie.200705285)



**From biomass to tomorrow's biofuels:** Pyrolysis oils, obtained by fast pyrolysis of solid biomass, comprise a wide range of oxygenated compounds. It is proposed that after adequate upgrading, these oils may be fed into large-

scale refinery units to obtain fuels. Thus, the co-feeding of a model hydrocarbon ( $\text{C}_8$ ) and model oxygenated molecules was studied in a fixed-bed catalytic reactor using an industrial fluid catalytic cracking catalyst.

### Sustainable Fuels

M. E. Domine, A. C. van Veen,  
Y. Schuurman,\* C. Mirodatos

**Coprocessing of Oxygenated Biomass  
Compounds and Hydrocarbons for the  
Production of Sustainable Fuel**

*ChemSusChem*  
DOI: [10.1002/cssc.200700049](https://doi.org/10.1002/cssc.200700049)



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