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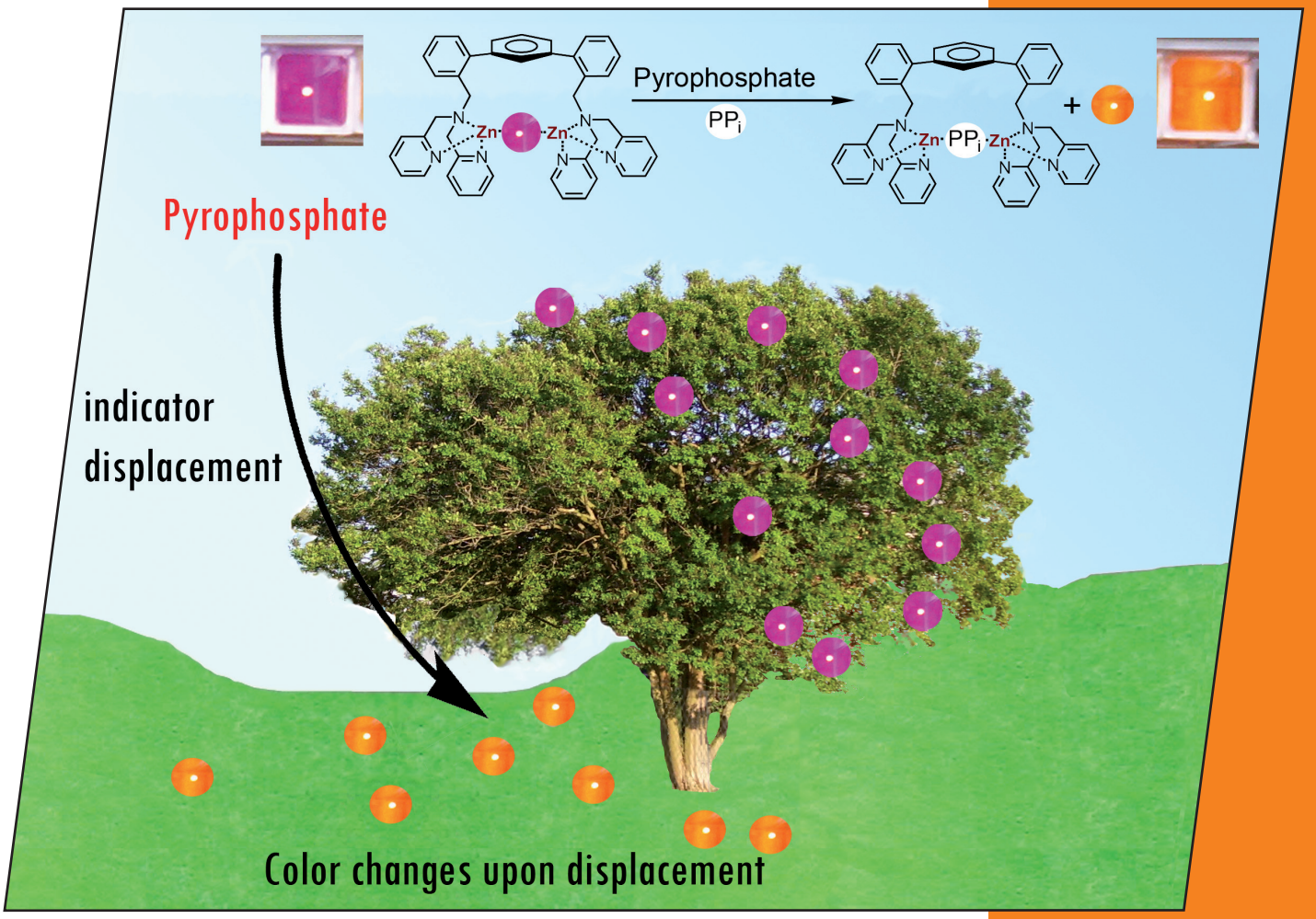
# EurJOC
## European Journal of Organic Chemistry




***Cover Picture***
*Rhett C. Smith et al.*
*Dizinc Phosphohydrolase Model*

***Microreview***
*Štefan Toma, Mária Mečiarová and Radovan Šebesta*
*Are Ionic Liquids Suitable Media for Organocatalytic Reactions?*

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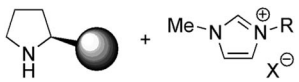
## MICROREVIEW

### Organocatalysis



**Keywords:** Ionic liquids / Organocatalysis / Aldol reaction / Mannich reaction / Michael addition



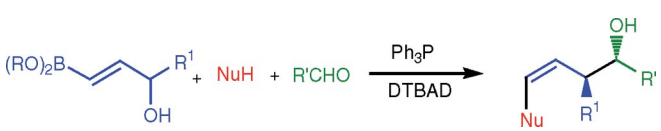

Organocatalyzed reactions carried out in nonclassical solvents such as ionic liquids represent interesting alternatives to established procedures. This combination often leads to improved yields and selectivities, as well as to possible catalyst recycling.

## SHORT COMMUNICATIONS

### Boron-Mediated Mitsunobu Reactions



**Keywords:** Mitsunobu reaction / Boronic esters / Nucleophilic substitution / Allylboration

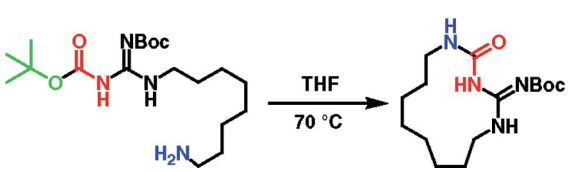



Substituted enamides and enol benzoates are readily prepared with a high diastereoselectivity in a one-pot procedure consisting of a regiocontrolled Mitsunobu reaction with convenient nucleophiles, followed by allylboration of aldehydes.

### Innovative Macrocycles



**Keywords:** Macrocyclization / Amidinourea / Aminoguanidine




Innovative macrocyclic amidinoureas were synthesised from linear di-Boc-guanidinoalkylamines related to guazatine. Macrocyclization proceeds under mild conditions affording 11- to 16-membered rings with a new and previously undescribed structure in good yields. The synthesis of enantiomerically pure macrocyclic amidinoureas was also accomplished.

A short, enantioselective Lewis acid catalyzed synthesis of some 3,4-benzo-5-oxacephams is reported. The absolute configuration of the title compounds was established by CD spectroscopy.

# FULL PAPERS



The dizinc complex of a dinucleating ligand built on a *m*-terphenyl scaffold was tested for binding to anions and complexometric indicators under physiological conditions. Colorimetric and fluorescence-based indicator displacement assays with selectivity for pyrophosphate over other anions were achieved with $Zn_2$**L2** as the receptor component.



Serine-based amino-functionalized neoglycolipids were prepared by solid-phase synthesis using a carbamate-linker strategy and monitoring with gel-phase $^{19}$F NMR spectroscopy. The terminal amine obtained after cleavage was conjugated to amino-functionalized microtiter plates using didecyl squarate and the array was successfully probed with a galactose-binding lectin.

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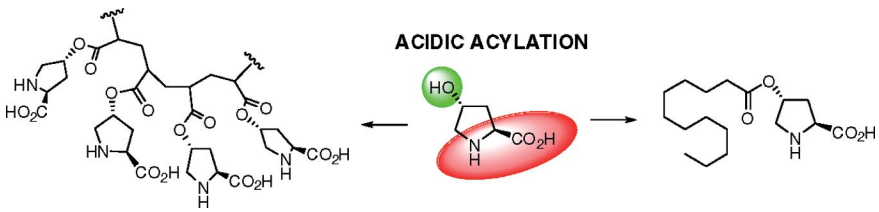
## Organocatalysis

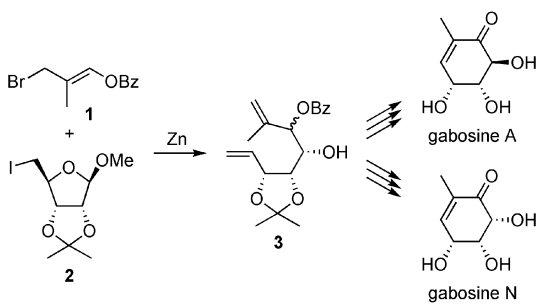





**Keywords:** Acylation / Polymerization / Amphiphiles / Amino acids / Immobilization

A selective *O*-acylation of hydroxyproline in $CF_3CO_2H$ makes a range of proline derivatives available on large-scale without any use of chromatographic purification or protecting groups, both catalytically active proline amphiphiles and an interesting new high-load proline polymer.

## Natural Products

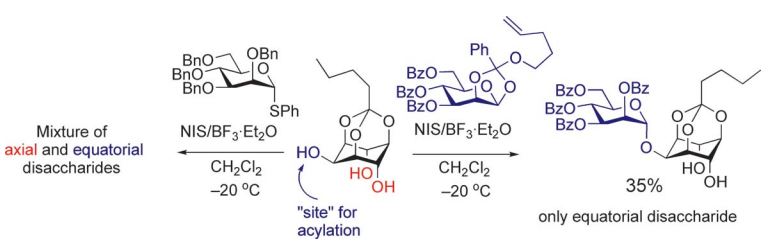





**Keywords:** Carbohydrates / Cyclitols / Metathesis / Natural products / Total synthesis

Gabosine A and N were prepared in 8–9 steps from ribose. The key step is a zinc-mediated tandem reaction between **1** and **2** to afford diene **3**. Subsequent ring-closing metathesis yields the corresponding cyclohexene which is then converted into the two natural products.

## Regioselective Glycosylation

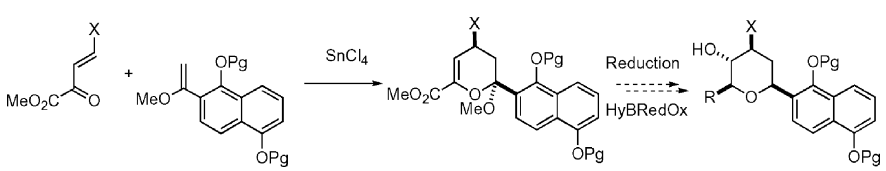





**Keywords:** Carbohydrates / Glycosides / Regioselectivity / Glycosylation / *myo*-Inositol / *n*-Pentenyl orthoester / Thioglycoside / Donor-acceptor systems

A mannose *n*-pentenyl orthoester (NPOE) glycosylates regioselectively *myo*-inositol orthopentenoate at the equatorial OH, whereas phenyl tetra-*O*-benzyl-D-mannose thioglycoside was less discriminant giving mixtures of axial and equatorial disaccharides. As noted previously, the preferred site for glycosylation of NPOEs coincides with that of selective acylation with the system RCOCl/pyridine.

## *C*-Aryl Glycosides






**Keywords:** Tin / Cycloaddition / Dienophiles / Glycosides / Heterocycles

The de novo access to "projuglone" *C*-naphthyl glycosides has been investigated through a [4+2] heterocycloaddition route. Two original dienophiles, conveniently protected at phenolic positions, were synthesized and stereoselectively led to the expected heteroadducts. This work presents the first attempts to apply the HyBRedOx sequence to the synthesis of projuglone *C*-naphthyl glycosides.

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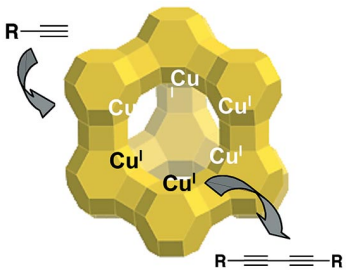
## Metal–Zeolites in Organic Synthesis



**Keywords:** Zeolites / Copper / Alkynes / Diynes / Glycosides

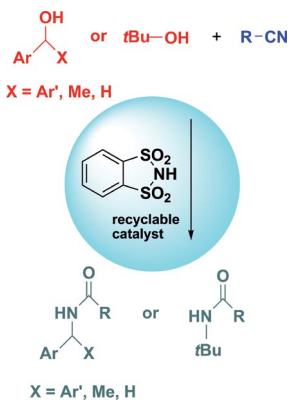



$Cu^{I}$-modified zeolites were used for the first time as catalysts for the synthesis of diynes by homocoupling of terminal alkynes. Zeolites exhibiting internal large cage frames, $Cu^{I}$–USY and $Cu^{I}$–Y, proved to be the best catalysts. High and usually quantitative yields were obtained with a large variety of alkynes, including carbohydrate derivatives.

## Homogeneous Catalysis



**Keywords:** Homogeneous catalysis / Amides / Nitriles / Ritter reaction / Brønsted acid

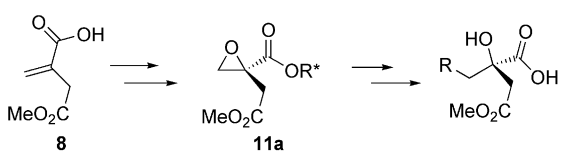



Reactions between benzyl alcohols or *tert*-butyl alcohol and nitriles carried out in the presence of catalytic amounts of *o*-benzenedisulfonimide are described. The catalyst was recovered with economic and ecological benefits.

## *Cephalotaxus* Alkaloid Side-Chains



**Keywords:** Alkaloids / Esters / Epoxides / Ring-opening / Chirality




Enantiopure monoacid side-chains of esters of cephalotaxine have been prepared. The strategy used as key intermediate the chiral nonracemic epoxide **11a** prepared from monomethyl itaconate (**8**). Ring-opening of epoxide **11a** by using different organocuprate nucleophiles followed by hydrogenolysis gave the monoacid side-chains of the corresponding esters of cephalotaxine in moderate to good overall yields.

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Supporting information on the WWW (see article for access details).

**If not otherwise indicated in the article, papers in issue 2 were published online on December 23, 2008**

  