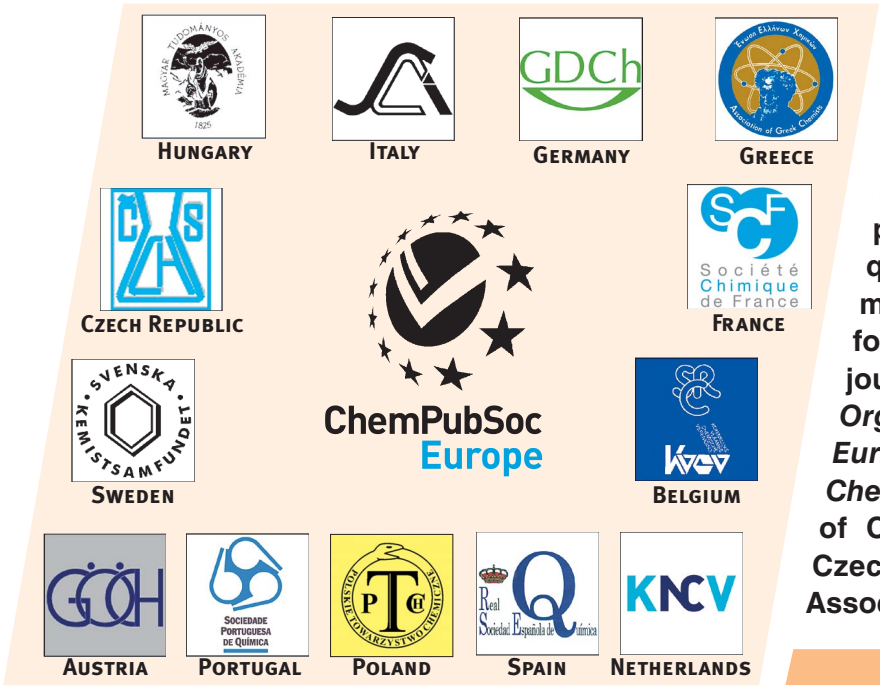
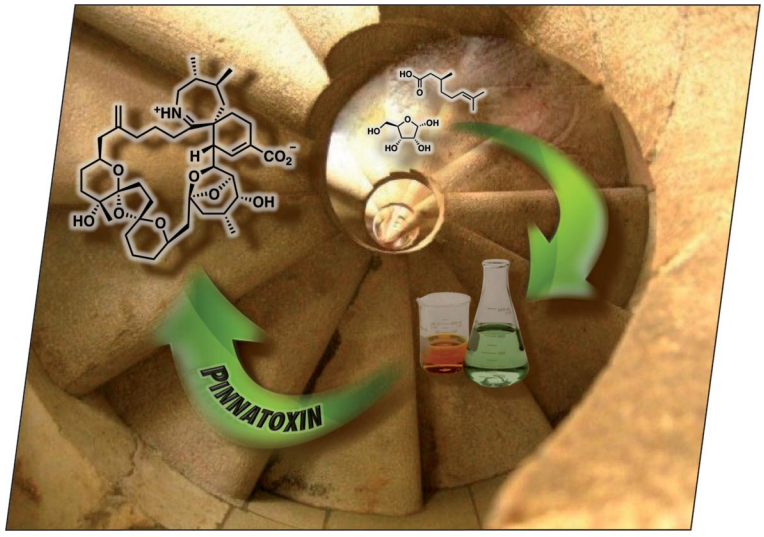


EurJOC is co-owned by 11 societies of ChemPubSoc Europe, a union of European chemical societies for the purpose of publishing high-quality science. All owners merged their national journals to form two leading chemistry journals, the *European Journal of Organic Chemistry* and the *European Journal of Inorganic Chemistry*. Three further members of ChemPubSoc Europe (Austria, Czech Republic and Sweden) are Associates of the two journals.

Other ChemPubSoc Europe journals are *Chemistry – A European Journal*, *ChemBioChem*, *ChemPhysChem*, *ChemMedChem*, *ChemSusChem* and *ChemCatChem*.

COVER PICTURE

The cover picture shows the building blocks for the total synthesis of pinnatoxin A as the focal point, culminating with the marine natural product at the top of the stairs. The background reflects a highlight of the Santa Barbara Mission, located in Santa Barbara, California. Founded by Franciscan Friar Fermin de Lasuen on the Feast of St. Barbara in 1786, the mission is the principal cultural and historic landmark of the city. The spiral symbolizes the universal pattern of growth and evolution, as well as the ongoing process of discovery. Details of the total synthesis of pinnatoxin A are presented in the Microreview by A. Zakarian et al. on p. 3743ff.



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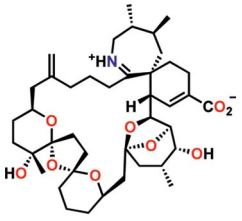
MICROREVIEW

Natural Product Synthesis

Keywords: Natural products / Total synthesis / Marine toxins / Spiroimine natural products / Pinnatoxin / Spiro compounds

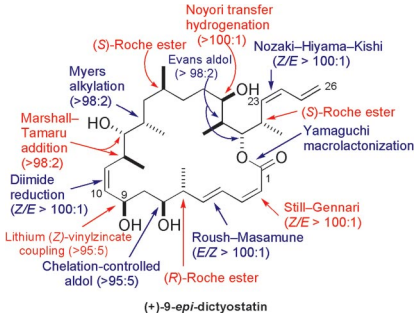


This microreview provides a compilation of synthetic approaches and total syntheses of pinnatoxin A, a single representative member of a fascinating group of potent marine toxins that share a spiroimine subunit as a unifying structural element. The literature is surveyed up to early 2010.

SHORT COMMUNICATIONS

Asymmetric Total Synthesis

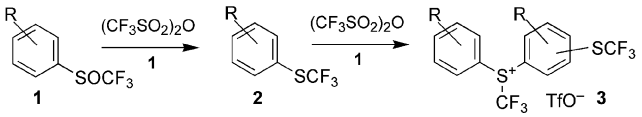
Keywords: Antitumor agents / Asymmetric synthesis / Macrocycles / Natural products / Total synthesis



Eleven stereogenic centers and four stereogenic double bonds were obtained with a high level of stereocontrol in the total synthesis of (+)-9-*epi*-dictyostatin, a diastereomer of the antimitotic marine-sponge-derived macrolide (−)-dictyostatin.

Trifluoromethyl Sulfoxide Reduction

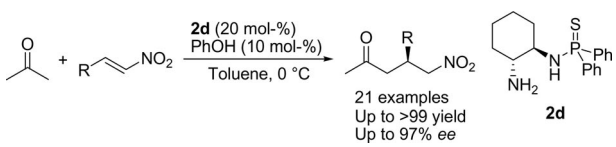
Keywords: Reduction / Anhydrides / Fluorine / Reaction mechanisms / Sulfur



Trifluoromethanesulfonic anhydride acts twice as a promoter for the conversion of aryl trifluoromethyl sulfoxides **1** into sulfonium salts **3**. We showed that this reaction occurs by prior reduction of sulfoxide **1** to its corresponding sulfane induced by sulfoxide **1** itself. Further reaction of sulfane with sulfoxide **1** activated again by the anhydride gave rise to sulfonium salt **3**.

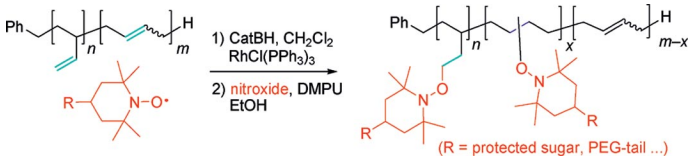
Asymmetric Michael Addition

Keywords: Enantioselectivity / Michael addition / Nitro olefins / Chiral thiophosphoramide



A novel chiral phosphoramide functions well as an efficient bifunctional organocatalyst for the asymmetric Michael addition of acetone, one of the most challenge substrate in Michael addition, to nitro olefins to afford the corresponding synthetic valuable γ-nitro ketones in good to excellent yield with high levels of enantioselectivities (up to 97% *ee*, respectively).

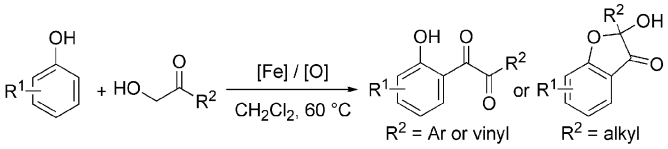
Polymer Modification



Functionalized poly(butadiene)s can be prepared by a reaction sequence comprising olefin hydroboration and nitroxide induced oxidation to give poly(alkoxyamines). If the nitroxide is charged with an interesting functional moiety such as a sugar derivative or a polyethylene glycol tail, the trapping process delivers the corresponding functionalized chemically modified poly(olefins) in a one-pot process.

Keywords: Polymers / Hydroboration / Polymer modification / Boron / Radicals / Nitroxides

Synthetic Methods



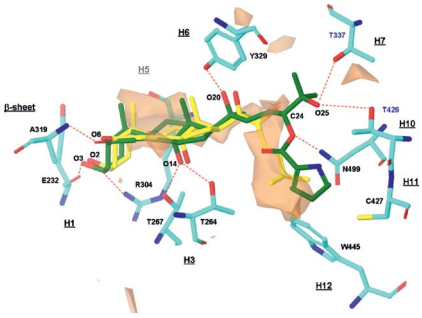
An iron-catalyzed *ortho*-functionalization of phenols was developed. The reactions of simple phenols with α-hydroxy ketones provide a novel and efficient method to construct 2′-hydroxyphenyl-1,2-dione derivatives.

Keywords: Iron / C-H activation / Ketones / Fused-ring systems / Phenols

FULL PAPERS

Ecdysteroid Receptor Selectivity

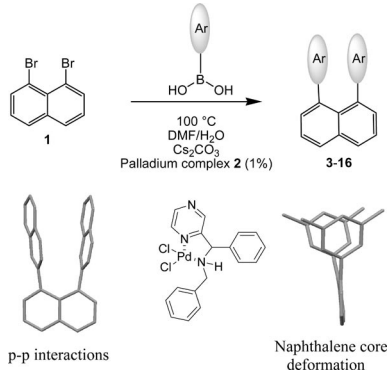
Plant-derived ecdysteroids are chemically related to insect steroid hormones, which are generally non-selective towards ecdysteroid receptors (EcRs) from different species. In contrast, the phytoecdysteroid canescensterone shows a remarkable selectivity towards non-lepidopteran EcRs. The full stereochemical assignment of canescensterone was determined using 1D and 2D solution NMR experiments, leading to a better understanding of the molecular basis of its receptor selectivity



Keywords: Steroids / Receptors / NMR spectroscopy / Structure–activity relationships / Molecular docking

Pd-Catalyzed Reactions

The synthesis of substituted 1,8-diarylnaphthalenes using bis-Suzuki coupling of 1,8-dibromonaphathalene is described. Molecular structures in the solid state for six new compounds were analyzed. The influence of several parameters on naphthalene core deformation are described.



Keywords: Conformation analysis / N ligands / Palladium / Stacking interactions / Structure elucidation

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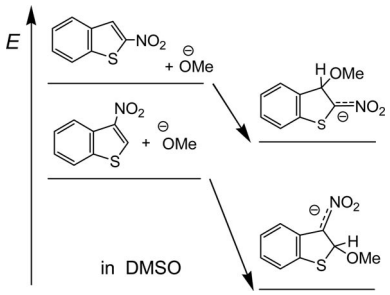
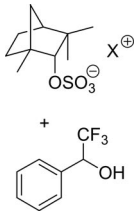
Nucleophilic Aromatic Substitution



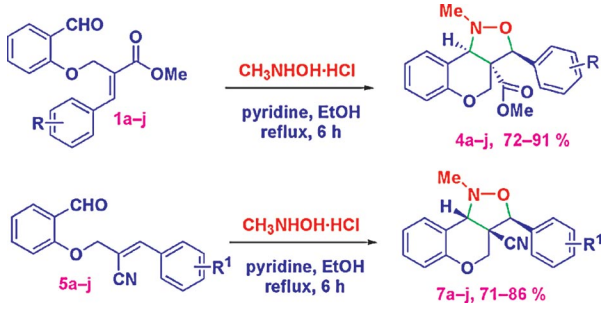
^{13}C NMR chemical shifts can contribute to evaluations of whether or not steric effects are important in S_NAr reactions. Provided that electronic effects prevail, Meisenheimer-type adducts at the C atom in α position to S also exhibit the larger stability constants when the thiophene ring is benzo[*b*]-fused. Benzo[*b*]-condensation causes a dramatic decrease in the aromatic character of the thiophene ring.

Chiral Ionic Liquids



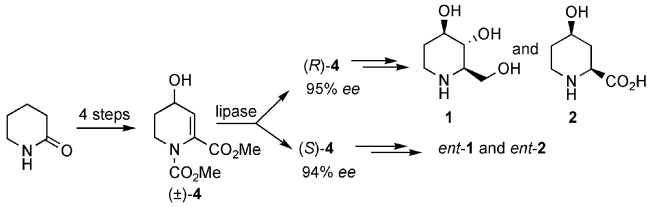
Novel chiral ionic liquids based on chiral anions have been prepared. The new salts were explored as chiral shift reagents with a neutral alcohol.

Nitrone Cycloaddition



The development of a novel synthetic method for the stereoselective synthesis of fused tricyclic chromenoisoxazolidines with angular substitution through a [3+2] nitrone cycloaddition reaction by utilizing Baylis–Hillman derivatives is described.

Chemoenzymatic Synthesis

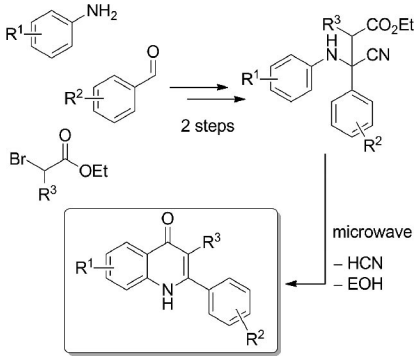


The lipase-catalyzed kinetic resolution of a racemic alcohol, readily obtained from commercial δ-valerolactam, is the key step of an enantiodivergent synthesis of D- and L-fagomine as well as *cis*- and *trans*-4-hydroxypipecolic acid.

Nitrogen Heterocycles

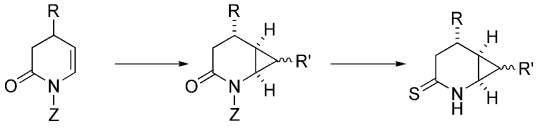
Keywords: Nitrogen heterocycles / Cyclization / Alkylation / Microwave chemistry

The α-alkylation of deprotonated *N*-aryl-α-aminonitriles with α-bromoesters furnishes intermediates that can be cyclized to 4-quinolones upon microwave irradiation. Alternatively, base-induced dehydrocyanation of the alkylation products furnishes enaminoesters, which can, for example, be converted into quinoline-3-carboxylates.



Stereoselective Cyclopropanation

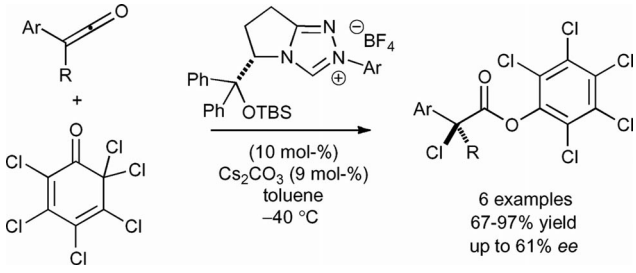
Keywords: Nitrogen heterocycles / Cyclopropanation / Polycycles / Lactams / Diastereoselectivity



Unsaturated δ-lactams are cyclopropanated with the aid of diazo compound decomposition catalysed by metal complexes. A study of the reaction conditions, stereochemical outcome and group protection is reported. Transformation into thiolactams assists in separation of the different isomers obtained and removal of the protecting group.

Asymmetric Catalysis

Keywords: Homogeneous catalysis / Asymmetric synthesis / *N*-Heterocyclic carbene / Ketenes / Chlorination

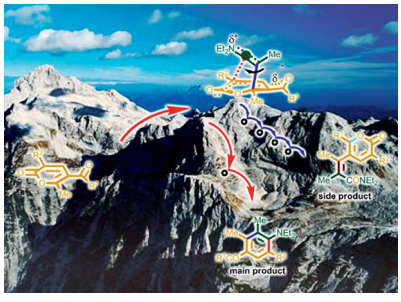


NHCs promote the efficient chlorination of unsymmetrical disubstituted ketenes with up to 61% *ee* observed using 2,3,4,5,6,6-hexachlorocyclohexa-2,4-dienone.

Polar Diels–Alder Reaction

Keywords: Cycloaddition / Density functional calculations / Donor-acceptor systems / Pyranones / Reaction mechanisms

A comprehensive study of the Diels–Alder reaction mechanism of 2*H*-pyran-2-ones and non-symmetrically substituted electron-rich and electron-pure alkynes using both experimental and computational approaches is presented.



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CORRECTION

* Author to whom correspondence should be addressed.

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

If not otherwise indicated in the article, papers in issue 29 were published online on October 5, 2010