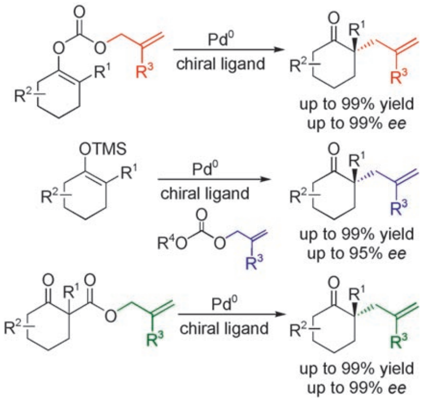
Allylations

J. T. Mohr, B. M. Stoltz*

Enantioselective Tsuji Allylations

Chem. Asian J.
DOI: **10.1002/asia.200700183**



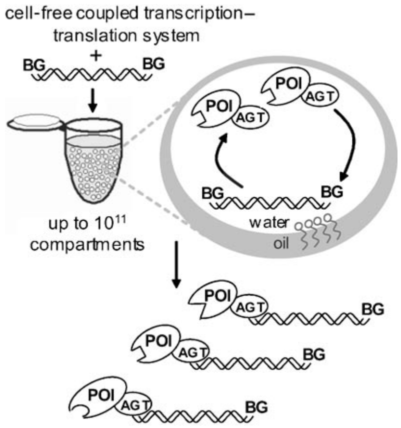
A fresh take: Several variants of the Tsuji allylation reactions have been rendered enantioselective in recent years. These important developments have provided valuable methods for the synthesis of enantioenriched cycloalkanone building blocks. The use of these asymmetric reactions in total synthesis has also been reported. TMS = trimethylsilyl.

Protein Evolution

V. Stein, I. Sielaff, K. Johnsson, F. Hollfelder*

A Covalent Chemical Genotype–Phenotype Linkage for in vitro Protein Evolution

ChemBioChem
DOI: **10.1002/cbic.200700459**



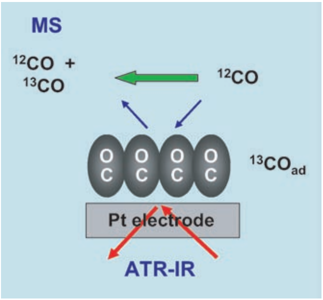
Display model. Proteins fused to O^6-alkylguanine alkyltransferase (AGT) were expressed in vitro and conjugated to their coding DNA via O^6-benzylguanine, a suicide inhibitor of AGT. The potential of this display system is demonstrated for several proteins in model selection experiments. Enrichments of up to 100-fold and DNA recovery rates of up to 2.4% are achieved per round of selection.

CO Adsorption

M. Heinen, Y.-X. Chen, Z. Jusys, R. J. Behm*

Room Temperature CO_{ad} Desorption/Exchange Kinetics on Pt Electrodes—A Combined In Situ IR and Mass Spectrometry Study

ChemPhysChem
DOI: **10.1002/cphc.200700425**



Desorption and exchange of CO: The exchange of a saturated ^{13}CO adlayer by gas-phase ^{12}CO is monitored by in situ attenuated total reflection infrared spectroscopy (ATR–IR) spectroscopy and online mass spectrometry (see figure). First-order exchange and the dependence of the exchange rate on the partial pressure of ^{12}CO indicate CO_{ad} desorption at room temperature and a desorption-controlled exchange mechanism.

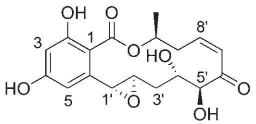
Structure–Activity Relationships

B. R. Hearn,* K. Sundermann, J. Cannoy, D. V. Santi

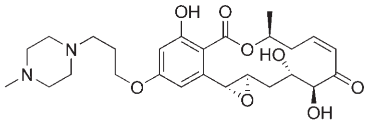
Semisynthesis and Cytotoxicity of Hypothemycin Analogues

ChemMedChem
DOI: **10.1002/cmdc.200700128**

Evaluation of the hypothemycin cytotoxicity SAR identifies the C4′–C8′ region of the macrocyclic lactone as relatively intolerant of structural modifications. Manipulation of the 4-position of the resorcylic acid, however, provides new opportunities to improve solubility and pharmacokinetic properties as this site may be modified without negatively impacting cytotoxicity.



4-*O*-Demethylhypothemycin
5, IC_{50} = 43 nM (COLO829)



25, IC_{50} = 42 nM (COLO829)

Amorphous coordination polymers, formed by the linkage of [bis(catechol)salen]Mn^{III} units, function as recyclable heterogeneous asymmetric epoxidation catalysts.

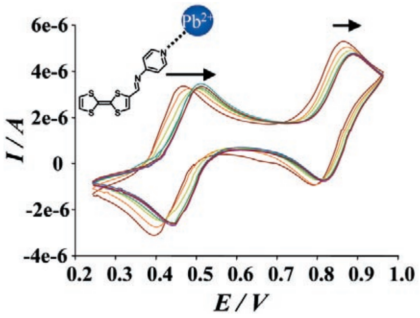
Heterogeneous Asymmetric Catalysts

S.-H. Cho, T. Gadzikwa, M. Afshari, S. T. Nguyen,* J. T. Hupp*

[Bis(catechol)salen]Mn^{III} Coordination Polymers as Support-Free Heterogeneous Asymmetric Catalysts for Epoxidation

Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200700302**

Tetrathiafulvalene–imine–pyridine assemblies have been synthesized and shown to generate both electrochemical and colorimetric responses upon lead binding.

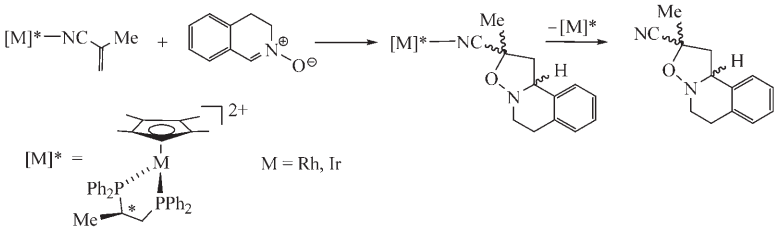


Responsive Ligands

J.-Y. Balandier, A. Belyasmine, M. Sallé*

Tetrathiafulvalene–Imine–Pyridine Assemblies for Pb^{2+} Recognition

Eur. J. Org. Chem.
DOI: **10.1002/ejoc.200700705**



Performance enhancement: By taking advantage of the knowledge of the relative abundance and stereochemistry of the active metallic intermediates present in the catalytic system (see scheme), a moderate enantioselectivity can be improved to achieve an excellent level of selection. In addition, such studies provide explanations for unexpected trends, the relationship between the configuration at the metal to the stereochemical outcome, and the efficient reutilization of the catalyst.

Asymmetric Catalysis

D. Carmona,* M. P. Lamata, F. Viguri, R. Rodríguez, F. J. Lahoz, L. A. Oro

Half-Sandwich Rhodium (and Iridium) Complexes as Enantioselective Catalysts for the 1,3-Dipolar Cycloaddition of 3,4-Dihydroisoquinoline *N*-Oxide to Methacrylonitrile

Chem. Eur. J.
DOI: **10.1002/chem.200701140**

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