

Porphyrins

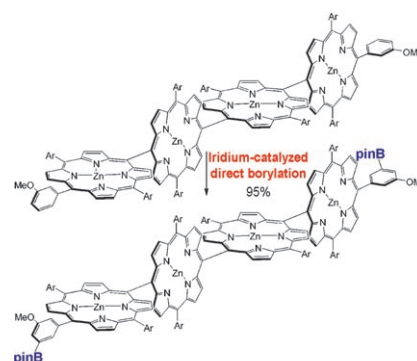
H. Hata, S. Yamaguchi, G. Mori,
S. Nakazono, T. Katoh, K. Takatsu,
S. Hiroto, H. Shinokubo,* A. Osuka*

Regioselective Borylation of Porphyrins
by C–H Bond Activation under Iridium
Catalysis to Afford Useful Building
Blocks for Porphyrin Assemblies

Chem. Asian J.

DOI: 10.1002/asia.200700086

The bor-on the ring: A boryl group can be selectively introduced at sterically uncongested positions in the aryl groups of porphyrin substrates whose peripheral β -positions are sterically hindered. This method can be applied to a variety of monomeric and oligomeric functional porphyrins, hence offering an efficient route to elaborate multiporphyrin-based molecular constructs. pinB = pinacol-boryl.



Amyloid β -Peptide

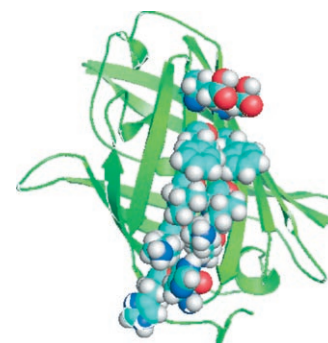
T. Takahashi,* K. Ohta, H. Mihara

Embedding the Amyloid β -Peptide Sequence in Green Fluorescent Protein Inhibits $A\beta$ Oligomerization

ChemBioChem

DOI: 10.1002/cbic.200700108

Against a green background. We have embedded the amyloid β -peptide ($A\beta$) sequence into the green fluorescent protein (GFP) structure to generate a pseudo- $A\beta$ surface on the β -barrel (see figure); this construct was highly active in inhibiting $A\beta$ oligomerization. One GFP variant (P13H), which mimicked the parallel β sheets of $A\beta$, was found to bind $A\beta$ with high affinity and inhibit $A\beta$ oligomerization, even though the concentration of P13H was lower than that of $A\beta$.



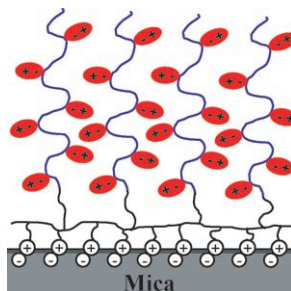
Graft Polymerization

M. Chen, W. H. Briscoe, S. P. Armes,
H. Cohen, J. Klein*

Robust, Biomimetic Polymer Brush Layers Grown Directly from a Planar Mica Surface

ChemPhysChem

DOI: 10.1002/cphc.200700131



Robust polymer brushes are grown from a planar mica surface (see figure) using atom-transfer radical polymerization. The brushes are characterized by X-ray photoelectron spectroscopy, X-ray reflectometry, atomic force microscopy, optical interferometry, and surface forces.

Inhibitor Design

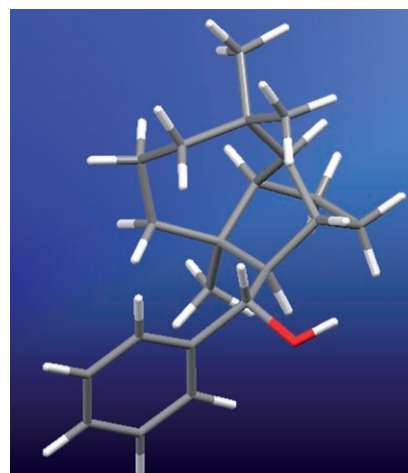
I. Bichlmaier, M. Kurkela, T. Joshi,
A. Siiskonen, T. R uffer, H. Lang,
M. Finel, J. Yli-Kauhaluoma*

Potent Inhibitors of the Human UDP-Glucuronosyltransferase 2B7 Derived from the Sesquiterpenoid Alcohol Longifolol

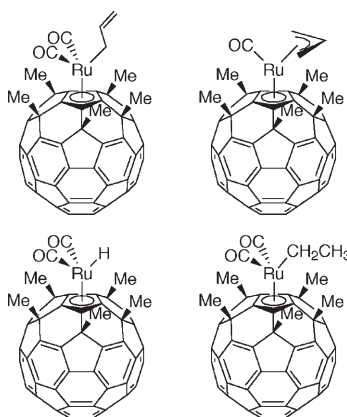
ChemMedChem

DOI: 10.1002/cmdc.200600246

The overlapping substrate selectivities of promiscuous metabolic enzymes such as UGTs make the design of selective inhibitors difficult. The results of this study indicate that the phenyl-substituted longifolol derivate (shown) is a potent and selective inhibitor of UGT2B7, the key enzyme involved in drug glucuronidation. The tricyclic framework is presumably responsible for isoform selectivity, the phenyl group prevents glucuronidation of the hydroxy group, which itself promotes solubility.



η^1 -Allyl and η^3 -allyl, ethyl, and hydrido ruthenium complexes of pentamethyl[60]fullerene, $\text{Ru}(\eta^5\text{-C}_{60}\text{Me}_5)\text{R}(\text{CO})_2$ ($\text{R} = \eta^1$ -allyl, Et, H) and $\text{Ru}(\eta^5\text{-C}_{60}\text{Me}_5)(\eta^3\text{-allyl})(\text{CO})$, were prepared. Conversion of the η^1 -allyl complex to the η^3 -allyl complex and catalytic performance of the hydrido complex in the isomerization of 1-decene to internal decenes are described.



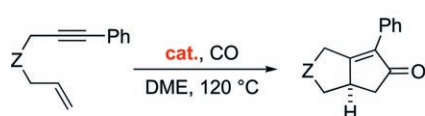
Metal–Fullerene Complexes

Y. Matsuo, T. Uematsu, E. Nakamura*

Synthesis and Catalytic Activity of η^1 -Allyl and η^3 -Allyl, Ethyl, and Hydrido Complexes of Ruthenium–Pentamethyl[60]fullerene

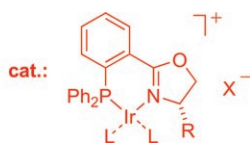
Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.200700013



Iridium complexes derived from chiral phosphane–oxazolines (phox ligands) are efficient catalysts for intramolecular Pauson–Khand reactions. Under optimized conditions high yields and enantioselectivities of > 90% *ee* were

obtained with 2 mol-% of catalyst. The influence of the CO pressure and the anion were studied. The structure of a dicarbonyl(phox)iridium complex was determined by X-ray analysis.



Asymmetric Catalysis

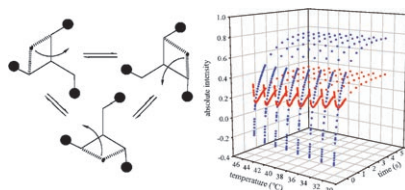
Z.-L. Lu, E. Neumann, A. Pfaltz*

Asymmetric Catalytic Intramolecular Pauson–Khand Reactions with Ir(phox) Catalysts

Eur. J. Org. Chem.

DOI: 10.1002/ejoc.200700330

Dynamic exchange between three symmetry-equivalent binding sites is observed for precatalysts of allylic alkylations (see scheme). The third ligating unit in the C_3 -chiral stereodirecting ligands leads to superior catalyst performance compared to the bisoxazoline analogues.



Asymmetric Catalysis

C. Foltz, M. Enders, S. Bellemin-Lapponnaz,* H. Wadepohl, L. H. Gade*

Using a Tripod as a Chiral Chelating Ligand: Chemical Exchange Between Equivalent Molecular Structures in Palladium Catalysis with 1,1,1-Tris(oxazoliny)ethane (“Trisox”)

Chem. Eur. J.

DOI: 10.1002/chem.200700307



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