SPOTLIGHTS ...

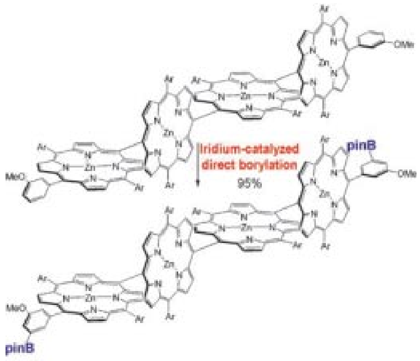
Porphyrins

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 = pinacolboryl.



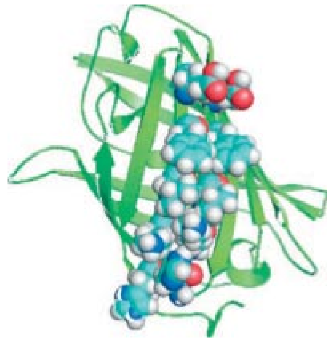
Amyloid β-Peptide

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

Embedding the Amyloid β-Peptide Sequence in Green Fluorescent Protein Inhibits Aβ Oligomerization

ChemBioChem
DOI: **10.1002/cbic.200700108**

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

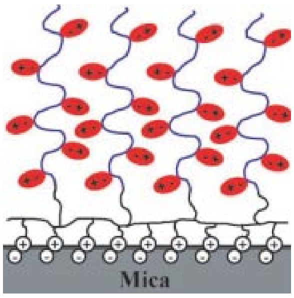


Graft Polymerization

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.

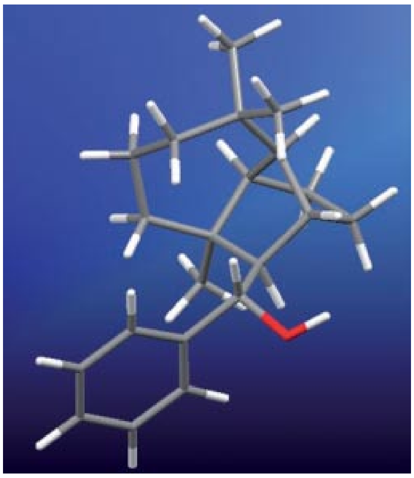
Inhibitor Design

I. Bichlmaier, M. Kurkela, T. Joshi,
A. Siiskonen, T. Rüffer, 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.



… ON OUR SISTER JOURNALS

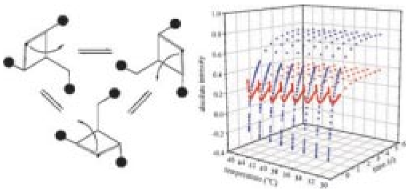
Asymmetric Catalysis

C. Foltz, M. Enders,
S. Bellemin-Laponnaz,*
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(oxazolinyl)ethane (“Trisox”)

Chem. Eur. J.
DOI: **10.1002/chem.200700307**

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.

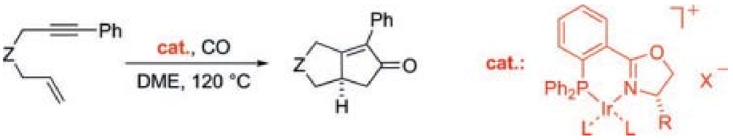


Asymmetric Catalysis

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**



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.

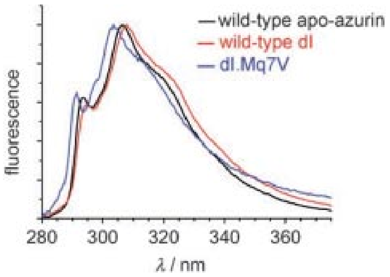
Tryptophan Fluorescence

J. Broos,* K. Tveen-Jensen,
E. de Waal, B. H. Hesp,
J. B. Jackson,* G. W. Canters,
P. R. Callis

The Emitting State of Tryptophan in Proteins with Highly Blue-Shifted Fluorescence

Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200700839**

Kind of blue: Tryptophan residues embedded in rigid and hydrophobic protein matrices, like azurin and domain 1 of a transhydrogenase (dI), yield blue-shifted emission spectra with vibrational fine structure. These features are typical for emission from the ^1L_b state of indole, and not the ^1L_a state. Nevertheless, these proteins are found to emit from ^1L_a, except for a mutant of domain 1 (dI.M97V), which features the most blue-shifted protein emission ever reported.



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