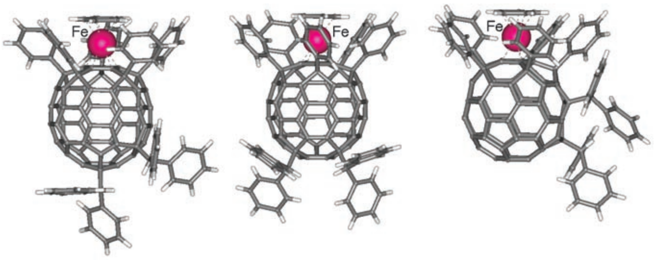
Fullerene Complexes

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

Hoop-Shaped Condensed Aromatic Systems: Synthesis and Structure of Iron– and Ruthenium–Hepta(organo)[60]fullerene Complexes

Chem. Asian J.
DOI: **10.1002/asia.200700124**



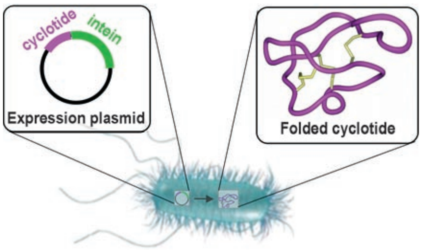
We don't just do balls: Hoop- and bowl-shaped aromatic systems can be synthesized by reductive alkylation of buckyferrocene and ruthenocene with metallic potassium. Physical methods such as X-ray crystallography reveal the structures of these iron– and ruthenium–hepta(organo)[60]fullerenes.

Cyclotide Biosynthesis

J. A. Camarero,* R. H. Kimura, Y.-H. Woo, A. Shekhtman, J. Cantor

Biosynthesis of a Fully Functional Cyclotide inside Living Bacterial Cells

ChemBioChem
DOI: **10.1002/cbic.200700183**



Perfect circle. We report the biosynthesis of a natively folded cyclotide, MCoTI-II, in *E. coli* by intracellular backbone cyclization of a linear cyclotide–intein fusion precursor. The cyclized peptide then spontaneously folds into its native conformation. Biosynthetic access to correctly folded cyclotides allows the possibility of generating cell-based combinatorial libraries that can be screened, inside living cells, for their ability to modulate or inhibit cellular processes.

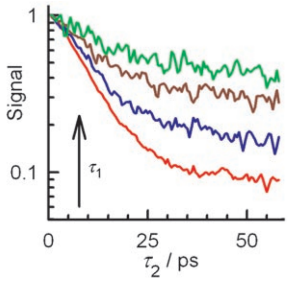
Ultrafast Spectroscopy

E. van Veldhoven, C. Khurmi, X. Zhang, M. A. Berg*

Time-Resolved Optical Spectroscopy with Multiple Population Dimensions: A General Method for Resolving Dynamic Heterogeneity

ChemPhysChem
DOI: **10.1002/cphc.200700088**

Dynamic heterogeneity: A new type of multidimensional experiment is demonstrated that distinguishes between heterogeneous and homogeneous causes of nonexponential relaxation. By varying the duration of an initial time period τ_1, fast-relaxing molecules are removed from the decay during a second period τ_2 (see figure).

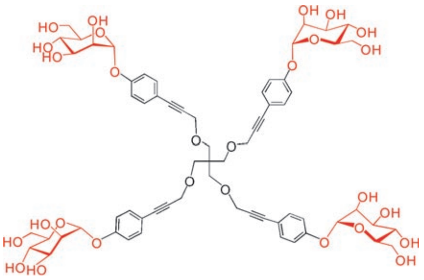


SAR of SERMs

M. Touaibia, A. Wellens, T. C. Shiao, Q. Wang, S. Sirois, J. Bouckaert,* R. Roy*

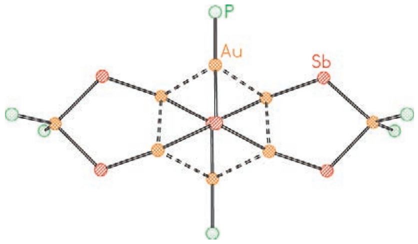
Mannosylated G(0) Dendrimers with Nanomolar Affinities to *Escherichia coli* FimH

ChemMedChem
DOI: **10.1002/cmdc.200700063**



Mannosylated dendrimers: Pentaerythritol and bis-pentaerythritol scaffolds were used for the preparation of first generation glycodendrimers bearing aryl α-D-mannopyranoside residues assembled using Sonogashira and click chemistry. Surface Plasmon Resonance measurements showed these two mannosylated clusters as the best ligands known towards FimH from *Escherichia coli* at subnanomolar concentrations.

Bridging Antimony Ligands



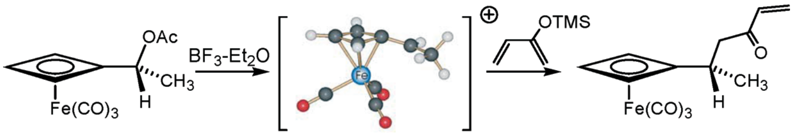
The synthesis and structural characterization of the gold antimony complex $[Au_8(SbPh)_2(SbPh_2)_4(PEt_3)_6]$ is reported. The Au^I ions show weak aurophilic interactions and are bridged by $[SbPh]^{2-}$ and $[SbPh_2]^-$ anions.

D. Fenske,* A. Rothenberger, S. Wieber

Synthesis and Characterization of a Gold Complex Containing $[SbPh]^{2-}$ and $[SbPh_2]^-$ Anions as Bridging Ligands

Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200700541**

Organoiron Intermediates



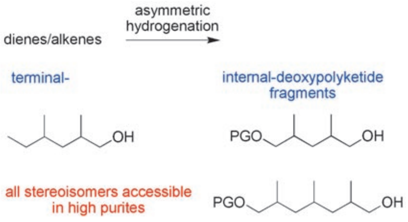
The configurational stability of reactive intermediates derived from ethylcyclobutadiene–$Fe(CO)_3$ by the formal abstraction of a hydride ion, a hydrogen atom or a proton from the pseudobenzylic position was investigated theoretically (DFT, Becke3LYP), and rotational barriers for rotation around the exocyclic C–C bond were probed experimentally.

A. Pfletschinger, U. Schneider, J. Lex, H.-G. Schmalz*

Stereospecific Side Chain Activation in Cyclobutadiene–$Fe(CO)_3$ Chemistry: A Theoretical and Experimental Study on the Structure and Configurational Stability of Cationic, Radical and Anionic Intermediates

Eur. J. Org. Chem.
DOI: **10.1002/ejoc.200700342**

Asymmetric Catalysis



Interplay of catalyst and substrate vectors allow application of asymmetric hydrogenations to facilitate formation of terminal- and internal-deoxypolyketide chirons (see scheme). Two of the tools used to achieve this were: DFT calculations to understand the abnormal mechanism for hydrogenation of α,β-unsaturated esters and double asymmetric syntheses (Horeau's principle) in reduction of dienes.

J. Zhou, J. W. Ogle, Y. Fan, V. Banphavichit(Bee), Y. Zhu, K. Burgess*

Asymmetric Hydrogenation Routes to Deoxypolyketide Chirons

Chem. Eur. J.
DOI: **10.1002/chem.200700390**

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