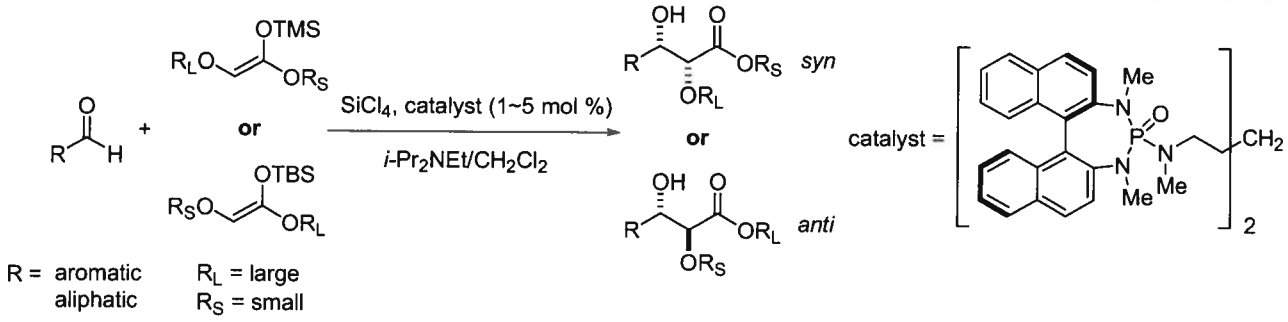
Lewis Base Activation of Lewis Acids. Catalytic, Enantioselective Addition of Glycolate-Derived Silyl Ketene Acetals to Aldehydes

Scott E. Denmark and Won-jin Chung

The catalytic system involving $SiCl_4$ and a chiral bisphosphoramide is effective for the addition of glycolate-derived silyl ketene acetals to aldehydes. The sense of diastereoselectivity can be modulated by changing the size of the substituents on the silyl ketene acetal. Either *syn*- or *anti*-diols can be obtained with high diastereoselectivity and enantioselectivity from the properly substituted silyl ketene acetal.



Rhenium Carbonyl Pyridine Based Complexes Integrated in Estrogen Receptor (ER) Ligands for ER+ Tumor Imaging

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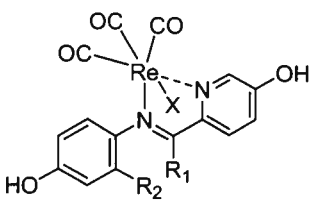
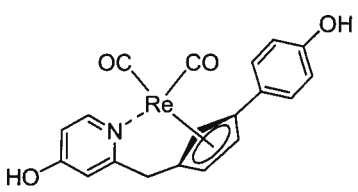
The estrogen receptor (ER), which is over-expressed in numerous cancer cell lines, is a medically relevant target for the imaging of breast cancer. Identification of tumors that respond well to hormone therapy will allow for less-invasive determination of the appropriate treatment regimen. To this end, a number of multi-dentate ligands capable of semi-encapsulating Re(I) carbonyl complexes have been synthesized. These ligands include a substituted pyridine bearing a second coordinating site, either an imine (PIRB, PIRM) or cyclopentadiene (PyCR), which causes the ligand to bend around the metal center. Incorporation of hydroxyl moieties allows for binding to the estrogen receptor. High RBA compounds will be tested in ER+ mouse models using ^{99m}Tc labels in place of the Re congener.



PIRB X = Br
PIRM X = OCH_3



PyCR