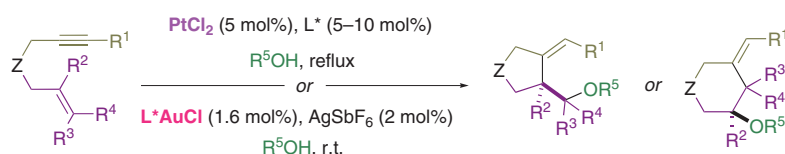


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Ligand Effects in Gold- and Platinum-Catalyzed Cyclization of Enynes: Chiral Gold Complexes for Enantioselective Alkoxylation

Organometallics 2005, 24, 1293–1300, DOI: 10.1021/om0491645.

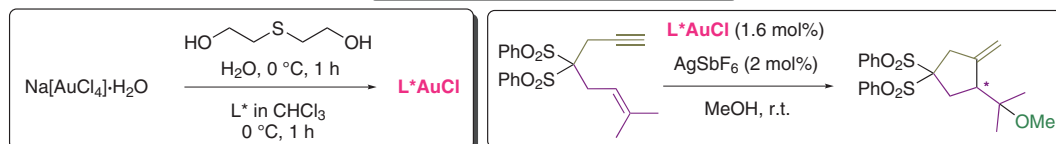
Development of Chiral Gold and Platinum Complexes for Enantioselective Alkoxylation of Enynes



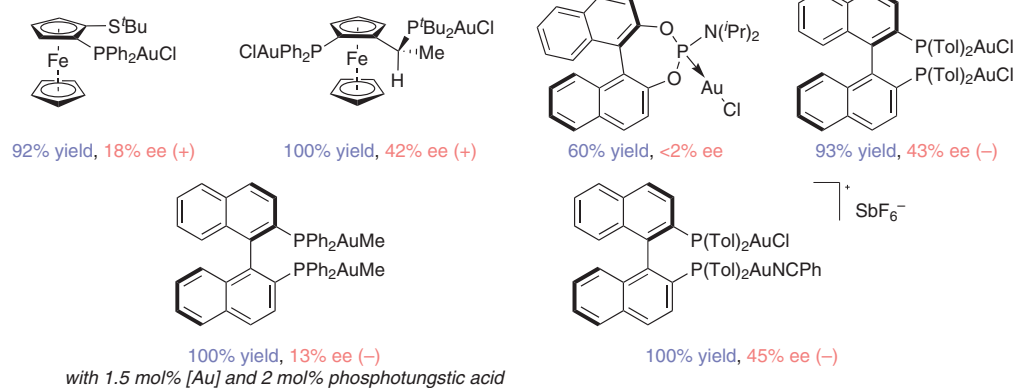
• Cyclization of 1,6-enynes

• First examples of enantioselective [L*Au]-catalyzed alkoxylation

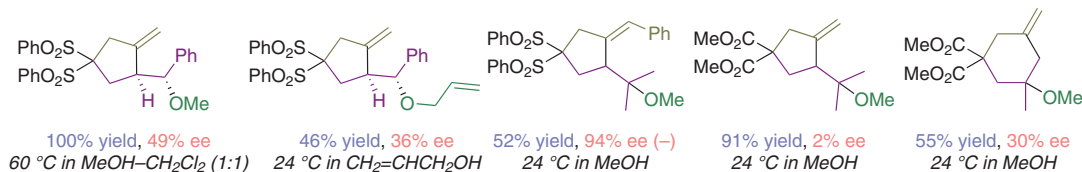
L*AuCl synthesis and ligand screening



Selected examples:



Other enyne alkoxylation



Significance: The group of Echavarren developed an enantioselective gold- and platinum-catalyzed alkoxylation of 1,6-enynes. A ligand study shows that the Alder-ene-type cyclization could be inhibited by using phosphine and bidentate N-N ligands. Under these conditions, the tandem cycloisomerization/alkoxylation reaction is favored. Enantioselectivity is generally modest, but has paved the way for additional studies.

Comment: Gold- and platinum-catalyzed cycloisomerization of 1,6-enynes are well known. Enantioselective reactions using gold(I) complexes are sometimes challenging due to the linear geometry of the complexes. Here, the authors presented the first gold-catalyzed alkoxylation reaction. Numerous chiral gold(I) complexes have been synthesized, isolated and crystallized for X-ray analysis.

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