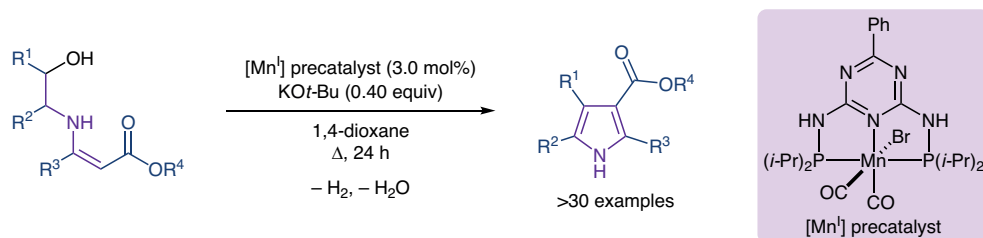
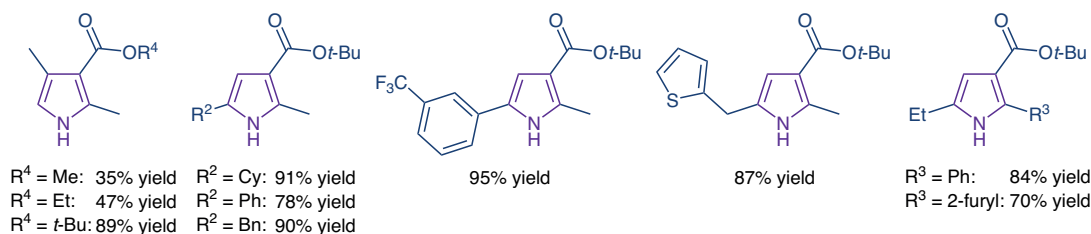


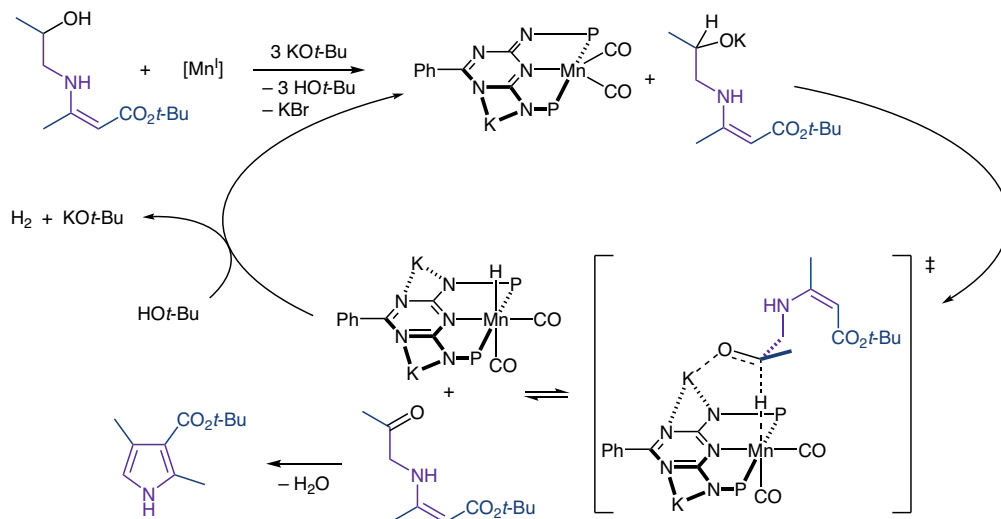
A Manganese-Catalyzed Knorr Pyrrole Synthesis



Selected examples:



Proposed mechanism:



Significance: Kempe and co-workers disclosed a catalytic protocol for the Knorr pyrrole synthesis from 1,2-amino alcohols and β -keto esters under dehydrogenative coupling using a manganese catalyst. This method enables access to highly functionalized pyrroles in good to high yields.

Comment: NMR spectroscopic studies and control experiments support the shown mechanism. The catalytic protocol is also applicable for the synthesis of pyridines using 1,3-amino alcohols and β -keto esters via dihydropyridine intermediates (not shown).