

## Enantioselective Baeyer–Villiger Oxidation

Category

Metal-Catalyzed  
Asymmetric  
Synthesis and  
Stereoselective  
Reactions

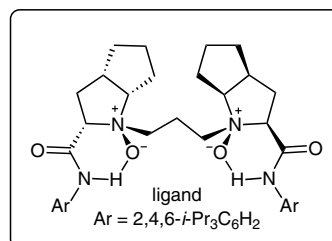
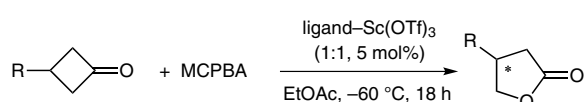
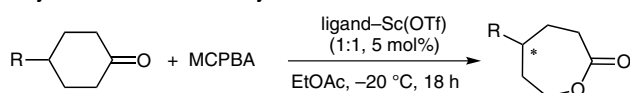
Key words

Baeyer–Villiger  
oxidation

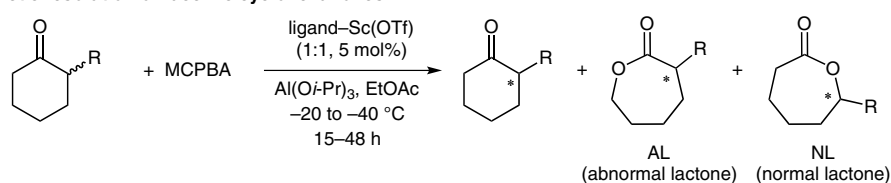
scandium

desymmetrization

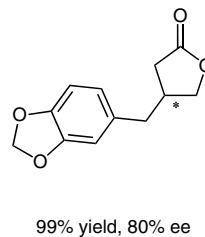
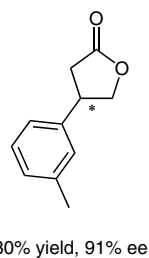
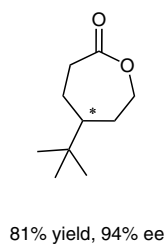
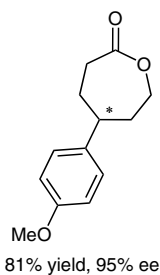
### Desymmetrization of *meso*-cyclic ketones:



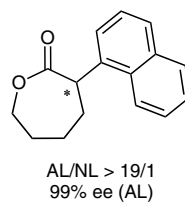
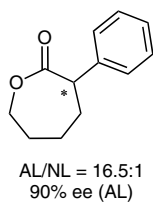
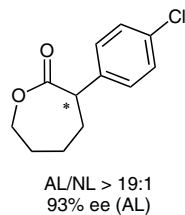
### Kinetic resolution of racemic cyclohexanones:



### Selected examples of desymmetrization:



### Selected examples of kinetic resolution:



**Significance:** The asymmetric Baeyer–Villiger oxidation of prochiral and racemic cyclic ketones effectively synthesized optically active  $\epsilon$ - and  $\gamma$ -lactones. The desymmetrization of racemic cyclohexanones interestingly showed a reversal of migratory aptitude with high levels of enantioselectivity.

**Comment:** The authors continued their use of chiral  $N,N'$ -dioxide-metal catalysts for the Baeyer–Villiger oxidation reaction. During the desymmetrization of *meso*-cyclohexanones and *meso*-cyclobutanones, the electronic and steric nature of the substituents appeared to have no effect on enantioselectivity; the opposite was true for the kinetic resolution of racemic cyclohexanones.

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Synfacts 2013, 9(1), 0049 Published online: 17.12.2012

DOI: 10.1055/s-0032-1317774; Reg-No.: H15412SF