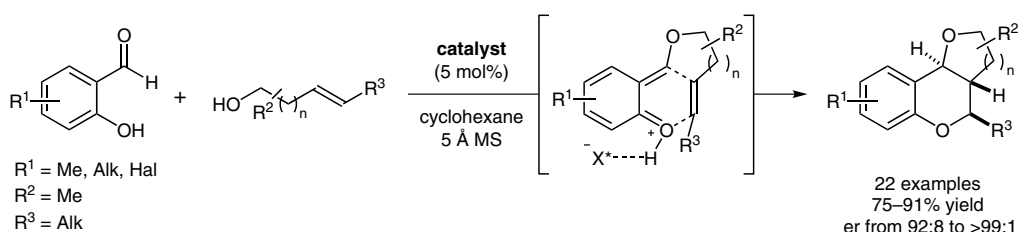


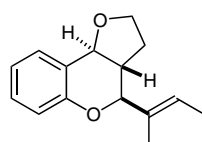
Y. XIE, B. LIST* (MAX-PLANCK-INSTITUT FÜR KOHLENFORSCHUNG, MÜLHEIM AN DER RUHR, GERMANY)

Catalytic Asymmetric Intramolecular [4+2] Cycloaddition of In Situ Generated *ortho*-Quinone Methides
Angew. Chem. Int. Ed. **2017**, DOI: 10.1002/anie.201612149.

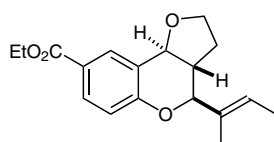
Intramolecular [4+2] Cycloaddition of *ortho*-Quinone Methides Generated In Situ



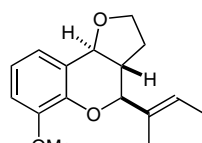
Selected examples:



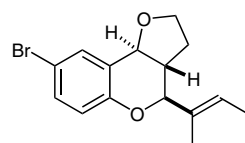
84% yield
er = 99:1



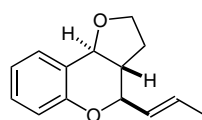
86% yield
er = 98.5:1.5



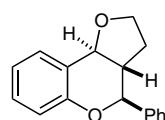
81% yield
er = 92:8



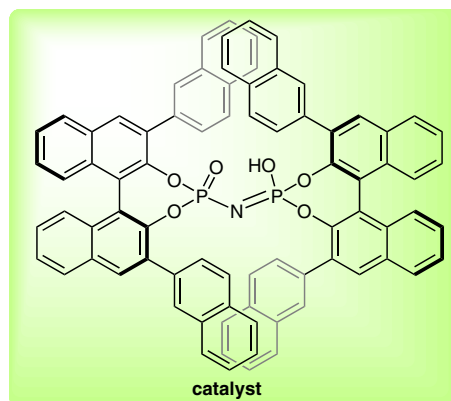
80% yield
er = 99:1



78% yield
er = 98:2



83% yield
er = 98.5:1.5



catalyst

Significance: The List group has developed a catalytic, asymmetric, intramolecular [4+2] cycloaddition of in situ generated *ortho*-quinone methide. A variety of salicylaldehydes were treated with dienols in the presence of a confined, chiral imidodiphosphoric acid catalyst to provide the desired furanochromanes with excellent enantioselectivities and good yields.

Comment: The chromane moiety is frequently found in natural products. The obtained furanochromane products have highly functionalized tricyclic frameworks. This acid-catalyzed reaction may be suitable for natural product synthesis, as two rings and three consecutive stereocenters are formed in a single step.

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