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

**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.

**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

SYNFACTS Contributors: Benjamin List, Denis Höfler

SYNFACTS 2017, 13(05), 0537 Published online: 18.04.2017
DOI: 10.1055/s-0036-1590373; Reg-No.: B02517SF