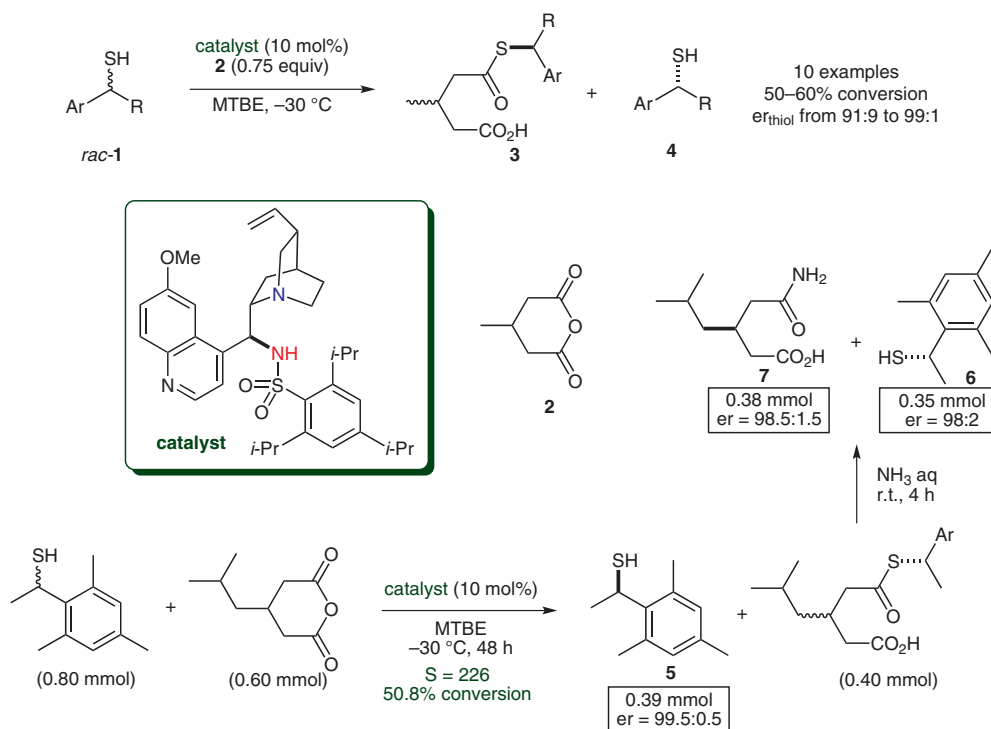


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Synergistic Organocatalysis in the Kinetic Resolution of Secondary Thiols with Concomitant Desymmetrization of an Anhydride

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Kinetic Resolution of Thiols



Significance: An efficient direct acylative kinetic resolution of racemic secondary thiols **1** was reported by the authors, using a novel sulfonamide catalyst derived from a cinchona alkaloid. Under optimal conditions (10 mol% catalyst loading, -30 °C in MTBE), with **2** as the electrophile, various secondary aromatic thiols can be resolved with high er at ~50% conversion. The selectivity ($S = k_{\text{fast}}/k_{\text{slow}}$) of the resolution is in the range of 50–275. In addition, during the kinetic resolution of the thiols, a simultaneous desymmetrization of a *meso*-anhydride electrophile (like **2**) also occurred with excellent enantioselectivity.

Comment: Although the kinetic resolution of alcohols is a well-established process, analogous methods for thiols are rare. This organocatalytic transformation involving a kinetic resolution of a racemic thiol and a simultaneous enantioselective desymmetrization of an achiral anhydride, is quite useful and atom-economic. The preparation of the hemiamide **7** [a precursor for (*R*)-pregabalin] shown in the Scheme is a nice demonstration. Both enantiomers (**5** and **6**) of the thiol and the desymmetrization product **7** can be obtained in high yields and high enantiomeric ratios.