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Dynamic Kinetic Resolution and Desymmetrization of Enantiotopic Groups by Cyclodehydration of Racemic or Prochiral d-Oxoesters with (*R*)-Phenylglycinol. Enantioselective Synthesis of Piperidines.

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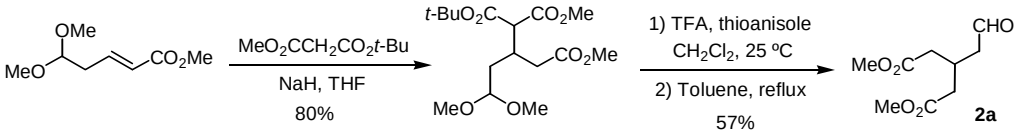
Compounds **1a-c** were prepared by conjugate addition of the piperidine or pyrrolidine enamine of the appropriate aldehyde to methyl acrylate (Stork's method): **1a** (60%): M. H. Norman, C. H. Heathcock, *J. Org. Chem.* **1988**, *53*, 3370-3371; **1b** (62%): 4-(2-methyl-1,3-dithian-2-yl)butanal was prepared as described by M. Schultz, H. Waldmann, H. Kunz, W. Vogt, *Liebigs Ann. Chem.* **1990**, 1019-1024; **1c** (50%):

variable amounts of 2,4-diphenyl-2-butenal were also isolated.

Compounds **1d-f** were prepared from methyl acrylate and the benzyl imine of 2-pentanone, followed by saponification (**1d**, 50%), the sodium enolate of 1-(*p*-methoxyphenyl)-2-propanone (**1e**, 58%), and the pyrrolidine enamine of cyclohexanone, followed by saponification (**1f**, 80%).

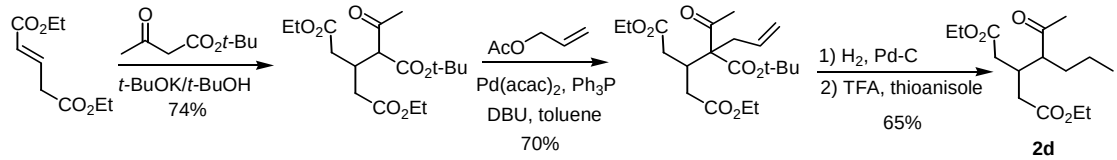
Compound **2a** was prepared as depicted in the following Scheme. Methyl 5,5-dimethoxy-2-pentenoate was prepared as described by: H.-F. Chow, I. Fleming, *J. Chem. Soc., Perkin Trans. 1* **1998**, 2651-2662.



Compound **2b** was prepared as previously reported: M. Amat, E. Sanfeliu, J. Bonjoch, J. Bosch, *Tetrahedron Lett.* **1989**, *30*, 3841-3844.

Compound **2c** was prepared (57% yield) by Raney-Nickel reduction of diethyl 3-(1-cyanopropyl)glutarate: E. E. van Tamelen, J. B. Hester, *J. Am. Chem. Soc.* **1969**, *91*, 7342-7349.

Compound **2d** was prepared as depicted in the following Scheme:



Compound **3a** was prepared in 60% yield by conjugate addition of the pyrrolidine enamine of methyl 5-oxopentanoate to methyl acrylate.

Compound **3b** was prepared as previously reported: M. E. Kuehne, *J. Am. Chem. Soc.* **1964**, *86*, 2946.