**Homo-aldol Reactions of Unsaturated Carbamates**

Significance: In 1989, Hoppe and co-workers reported the highly stereoselective homoaldol reaction of lithiated (E)-but-2-en-1-yl diisopropylcarbamates with carbonyl electrophiles leading to optically pure enol carbamates in high yields and good to excellent optical purity. After further transformation of the chiral products, the authors were able to prepare diastereomerically pure γ-lactones in high yields.

Comment: In the decades since its discovery, the enantioselective synthesis with lithium/(−)-sparteine carbamion pairs has attracted considerable interest within the scientific community and has been applied in numerous natural product syntheses.


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**Selected examples:**

- R1 = Alk, R2 = H, Me
  - 95% yield, 83% ee
  - 90% yield, 80% ee
  - 79% yield, 95% ee
  - 90% yield, 95% ee
  - 93% yield, 84% ee