

# Asymmetric Autocatalysis Using Cryptochiral Saturated Quaternary Hydrocarbons

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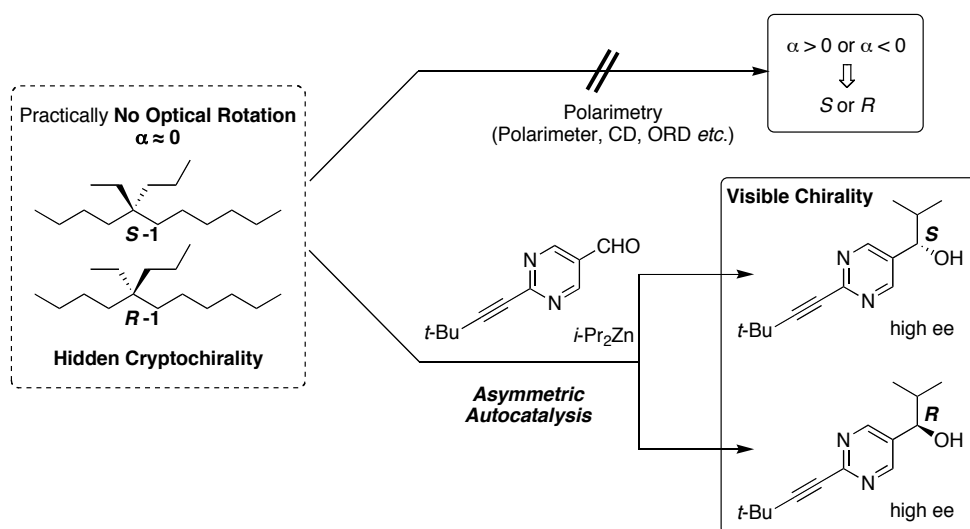
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5-Ethyl-5-propylundecane **1**<sup>[1]</sup> is known as “cryptochiral” compound that doesn't show any optical rotation despite the existence of chiral carbon center.<sup>[2]</sup> The interactions between quaternary alkane and other molecules should be very small because of the absence of heteroatoms and  $\pi$ -electrons. So the chiral discrimination of cryptochiral quaternary alkane is a challenging problem.

We report here the highly sensitive chiral discrimination of 5-ethyl-5-propylundecane using asymmetric autocatalysis. Addition of *i*-Pr<sub>2</sub>Zn to 2-alkynylpyrimidinecarbaldehyde was performed in the presence of chiral 5-ethyl-5-propylundecane. Since the initial reaction of the aldehyde and *i*-Pr<sub>2</sub>Zn are influenced by the cryptochiral quaternary alkane, small enantiomeric excess was induced. Then, the subsequent asymmetric autocatalysis with an amplification of the ee afforded alkanol (as zinc alkoxide) with high ee, which showed the absolute configuration corresponding to the cryptochirality of the alkane. This result shows that the asymmetric autocatalysis is a useful method to discriminate the cryptochirality of alkanes.



[1] Wynberg, H.; Hekkert, G. L.; Houbiers, J. P. M.; Bosch, H. M. *J. Am. Chem. Soc.* **1985**, *87*, 2635–2639.

[2] Mislow, K.; Bickart, P. *Isr. J. Chem.* **1976**, *15*, 1–6.