Asymmetric Reduction of α-Amino Ketones Catalyzed by Lewis Acids

**Significance:** The authors developed a metal-catalyzed asymmetric reduction of α-amino ketones using KBH₄ as hydride source. Under mild conditions, desired amino alcohols are obtained with high enantioselectivities.

**Comment:** β-Amino alcohols are important structural motifs in natural or pharmaceutical compounds. The authors also presented a gram-scale version of this reaction and its possible transition state.

**Selected examples:**

- 98% yield 88% ee (with 12 mol% of catalyst)
- 95% yield 92% ee
- 92% yield 96% ee
- 90% yield 97% ee
- 80% yield 85% ee
- 65% yield 90% ee
- 90% yield 77% ee
- 90% yield 74% ee

**Possible transition state:**

![Possible transition state diagram]