Azotide Ligands for Hetero-Diels–Alder Reactions

**Significance:** Azotides, which are abundantly found as scaffolds in natural products, are known to coordinate metal ions. The author report new azotide ligands for enantioselective Lewis acid catalysis.

**Comment:** The ligands were readily prepared from the chiral pool of amino acids and demonstrated enantioselectivity when used as ligands in a cobalt(II)-catalyzed hetero-Diels–Alder reaction.

**Synthesis of the azotide ligands:**

1. Lawesson’s reagent
2. Br\(\text{CH}_2\text{CO}_2\text{Et}\), KHCO\(_3\), then (CF\(_3\)CO\(_2\))\(_2\)O, 2,6-lutidine
3. NaOH (aq), THF

**Selected examples:**

- >95% conversion, 82% ee
- 55% conversion, enantiomeric purity 12% ee
- 88% conversion, 64% ee
- 80% conversion, 48% ee
- >95% conversion, 61% ee
- >95% conversion, 57% ee