Asymmetric Lithiation Trapping of \( N \)-Boc Heterocycles

Significance: The asymmetric lithiation trapping of various \( N \)-Boc heterocycles is disclosed, using \( s \)-BuLi and chiral diamines such as \((-\) -sparteine and \((+\) -sparteine surrogate at temperatures above \(-78^\circ C\). The corresponding chiral heterocycles are obtained in high yields and with good enantiomeric ratios.

Comment: The experiments can be conveniently performed, since asymmetric lithiation trappings of, for example, \( N \)-Boc pyrrolidine may be conducted at \(-30^\circ C\), still furnishing the chiral heterocycles with a high enantiomeric ration of about 9:1.