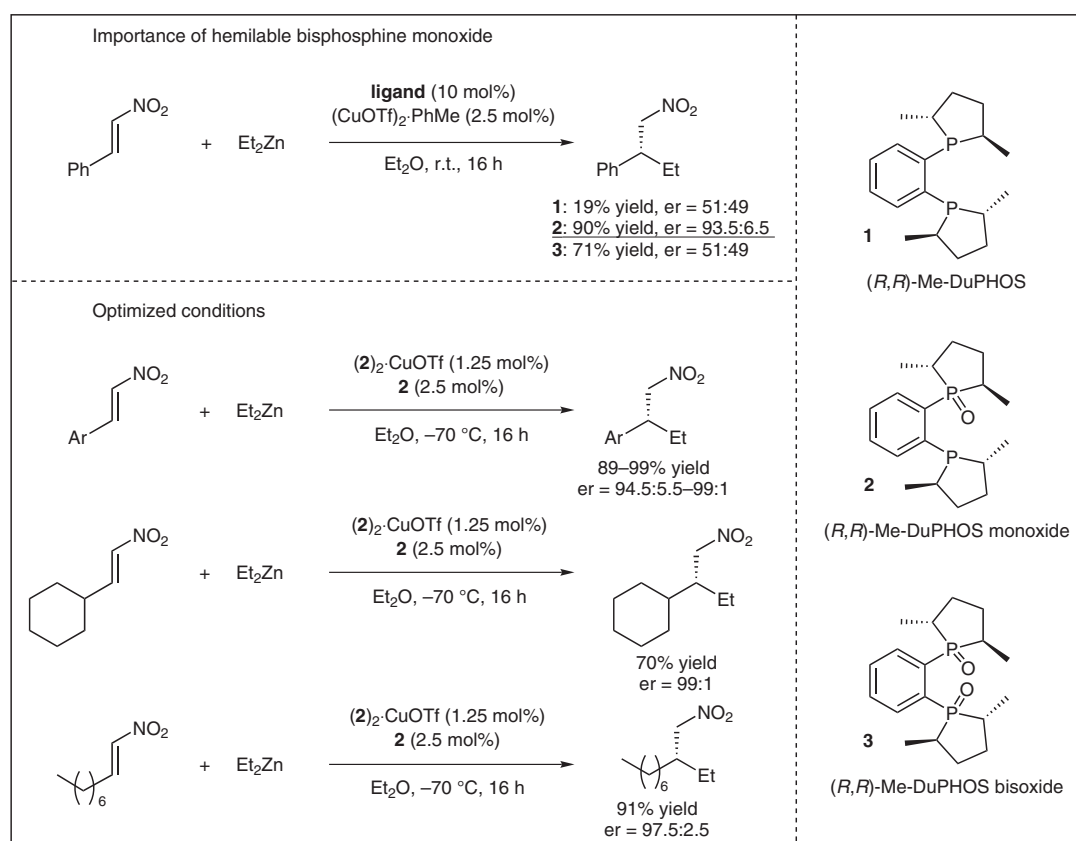


## Bis(phosphine) Monoxide Ligands for Asymmetric Conjugate Addition



**Significance:** This is an interesting contribution to the use of bis(phosphine) monoxides as hemilabile ligands for asymmetric catalysis. *(R,R)*-Me-DuPHOS monoxide (**2**) gave high enantioselectivity for the 1,4-addition of dialkyl zinc to nitroalkenes. Interestingly, **2** gave better selectivities than both the bisphosphine, Me-DuPHOS, and the Me-DuPHOS bisoxide. While most reports use diethyl zinc as nucleophile, dimethyl zinc also succeeds in giving the 1,4-adduct with good selectivity and yield.

**Comment:** While hemilabile ligands have received attention in catalysis, their use in asymmetric catalysis is somewhat new. This group extends the use of these bisphosphine monoxide ligands for 1,2-addition of dialkyl zinc to imines (A. A. Boezio et al. *J. Am. Chem. Soc.* **2003**, *125*, 14260-14261). The idea of using these hemilabile ligands is certainly an important advancement in asymmetric catalysis as shown by the outperforming of the bisphosphine monoxide compared to the bisphosphine and bisphosphine bisoxide. Hopefully, the author will expand this research to include other alkyl and aryl zinc reagents for general use.