Catalytic Asymmetric Cross-Coupling of Styrenyl Aziridines

**Significance:** The metal-catalyzed cross-coupling reaction is one of the most useful reactions for forming C–C bonds. A nickel-catalyzed reductive cross-coupling of racemic styrenyl aziridines with aryl halides in the presence of a new bisoxazoline ligand gave highly enantioenriched 2-arylphenethylamines in good yields and with excellent enantioselectivity.

**Comment:** The method has a broad substrate scope and tolerates various functional groups. Moreover, variation in the enantioselectivity depending on the ligand was well explained by means of multivariate analysis. A detailed ligand study was carried out to determine the origin of the observed selectivity. The present method can be useful in the synthesis of various chiral 2-arylphenethylamine moieties present in bioactive molecules and pharmaceutically important molecules.

**Selected examples:**

- **OMe**
  - NHTs (71% yield, 91% ee)
- **CN**
  - NHTs (66% yield, 78% ee)
- **Ac**
  - NHTs (76% yield, 90% ee)
- **Cl**
  - NHTs (65% yield, 87% ee)
- **CO2Et**
  - NHTs (59% yield, 94% ee)
- **OMe**
  - NHTs (65% yield, 94% ee)
- **F**
  - NHTs (71% yield, 92% ee)
- **F**
  - NHTs (67% yield, 90% ee)
- **AcO**
  - NHTs (78% yield, 90% ee)
- **MeO2C**
  - NHTs (47% yield, 88% ee)
- **F3C**
  - NHTs (67% yield, 85% ee)
- **F**
  - NHTs (45% yield, 91% ee)