Cobalt-Catalyzed Hydroboration of Alkynes

**Significance:** Chirik and co-workers report a bis(imino)pyridine cobalt-catalyzed hydroboration of terminal alkynes using HBpin to afford various vinylboronate esters with high Z-selectivity.

**Comment:** Selective insertion of an alkynylboronate ester into a Co–H bond via syn-hydrometallation generates a pro-(Z) cobalt alkenyl intermediate to yield the corresponding (Z)-vinylboronate ester.

\[ \text{Proposed mechanism:} \]

\[ \text{R} = \text{Alk, Ph, substituted Ar} \]

\[ \text{Selected examples:} \]

- 76% yield \( Z/E = 92:8 \)
- 72% yield \( Z/E = 98:2 \)
- 79% yield \( Z/E = 97:3 \)
- 59% yield \( Z/E = 92:8 \)
- 50% yield \( Z/E = 97:3 \)
- 56% yield \( Z/E = 56:44 \)
- 76% yield \( Z/E = 95:5 \)
- 69% yield \( Z/E > 98:2 \)

**Cobalt-Catalyzed Hydroboration of Terminal Alkynes and Elucidation of the Origin of Selectivity**