Palladium-Catalyzed Generation of C1 Ammonium Enolates

**Significance:** The authors disclose a palladium-catalyzed generation of C1 ammonium enolates from readily available halides, carbon monoxide, and catalytic chiral Lewis base. The intermediate participated in asymmetric reactions with ketimines.

**Comment:** The chiral dihydropyridone and β-lactam products were obtained in high yields, high diastereoselectivities, and excellent enantioselectivities. This methodology was employed in the asymmetric synthesis of an antiproliferative agent.

**Selected examples:**

- **C1-ammonium enolate generation:**
  - \[
    \text{ArBr} + \text{CO} \xrightarrow{2 \text{ eq, DIPEA (4 eq), THF, 30 °C}} \text{Catalytic generation of C1-ammonium enolate}
  \]

- **Derivatization:**
  - \[
    \text{ArBr} + \text{CO} \xrightarrow{\text{Pd (cat.), Xantphos, BTM (20 mol%)}} \text{Derivatization, Pd(dba)2 (5 mol%), Xantphos (15 mol%), TsOH, dioxane, 120 °C}
  \]
  - **Antiproliferative agent:** 63% yield, 96% ee, dr > 20:1

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