Enantioselective Synthesis of Homoallylic Azides and Nitriles via Palladium-Catalyzed Decarboxylicative Allylation

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**Significance:** Homoallylic azides and cyanides are synthesized in enantioenriched form through a palladium-catalyzed decarboxylicative allylation on indanones. These functional groups had seen little (CN) to no (N₃) reported use in the title reaction.

**Comment:** The products are obtained in very good yield and mostly with high enantioselectivity. The starting materials can be synthesized in one step from the corresponding β-keto esters using hypervalent iodine reagents developed in the authors’ laboratories.

**Selected examples:**

- **X = N₃:**
  - MeO
  - 86% yield, 87% ee
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  - 86% yield, 97% ee
  - 77% yield, 95% ee
  - 89% yield, 50% ee
  - 50% yield, 78% ee
  - 85% yield, 87% ee
  - 51% yield, 95% ee
  - 92% yield, 89% ee
  - 96% yield, 85% ee
  - 81% yield, 78% ee

- **X = CN:**
  - Br
  - 85% yield, 78% ee
  - MeO
  - 86% yield, 87% ee
  - MeO
  - 94% yield, 53% ee

**Modifications of the obtained products:**

- **CuSO₄·5H₂O (20 mol%)**
  - 94% yield
  - 53% yield