Azides and Nitriles in Palladium-Catalyzed Decarboxylative Allylation

**Significance:** Homoallylic azides and cyanides are synthesized in enantioenriched form through a palladium-catalyzed decarboxylative 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, R₁ = MeO, R₂ = R₃ = Ph: 86% yield, 87% ee
- X = N₃, R₁ = Ph, R₂ = MeO, R₃ = Ph: 77% yield, 95% ee
- X = N₃, R₁ = Br, R₂ = MeO, R₃ = Ph: 89% yield, 90% ee
- X = N₃, R₁ = F₃C, R₂ = MeO, R₃ = Ph: 92% yield, 78% ee
- X = CN, R₁ = MeO, R₂ = Br: 96% yield, 85% ee
- X = CN, R₁ = TBSO, R₂ = Ph: 51% yield, 95% ee
- X = N₃, R₁ = Ph₃P, R₂ = MeO: 96% yield, 81% ee

**Modifications of the obtained products:**
- CuSO₄·5H₂O (20 mol%) and sodium ascorbate, THF/CH₂Cl₂/H₂O (1:2:1): 94% yield
- Ph₃P, THF, 0 °C then H₂O: 53% yield

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