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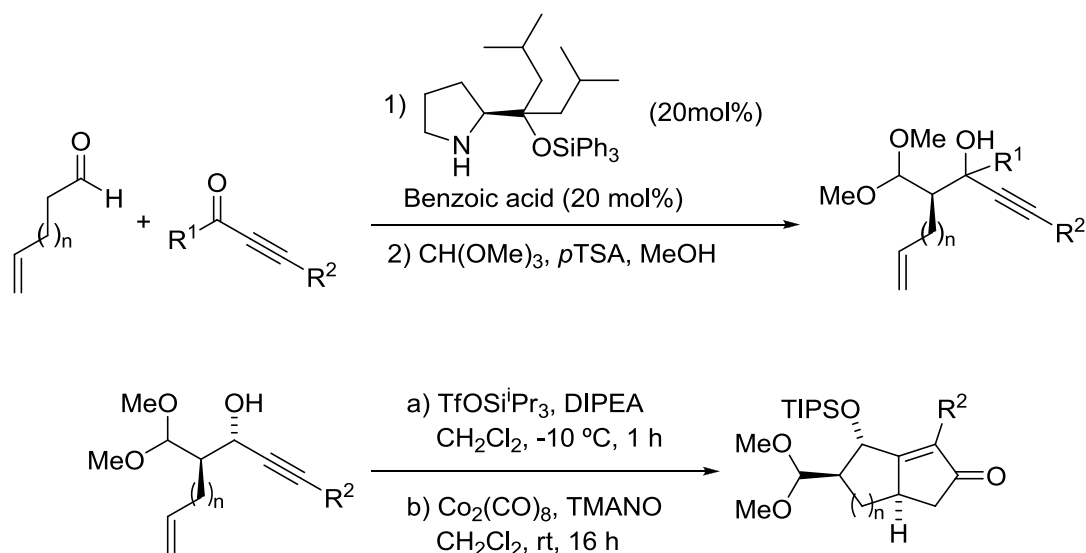
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Catalytic Enantioselective Quick Entry to Aldol-Tethered 1,6- and 1,7-Enynes and Their Synthetic Application

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Herein we present an effective asymmetric route to functionalized 1,6- and 1,7- enynes based on a direct cross-aldol reaction between ω -unsaturated aldehydes and propargylic aldehydes (α,β -ynals) promoted by combined α,α -dialkylprolinol ether/Brønsted acid catalysis. This synergistic activation strategy is a key to access the corresponding aldol adducts with high enantio- and diastereoselectivity.¹ The aldol reaction also proceeds well with propargylic ketones (α,β -ynones) thus enabling a stereocontrolled access to the corresponding tertiary alcohols. The utility of these adducts, which are difficult to prepare through standard methodology, is demonstrated by their transformation into trisubstituted bicyclic enones using standard Pauson-Khand conditions.



R¹: H, CO₂Me
n = 1, 2