

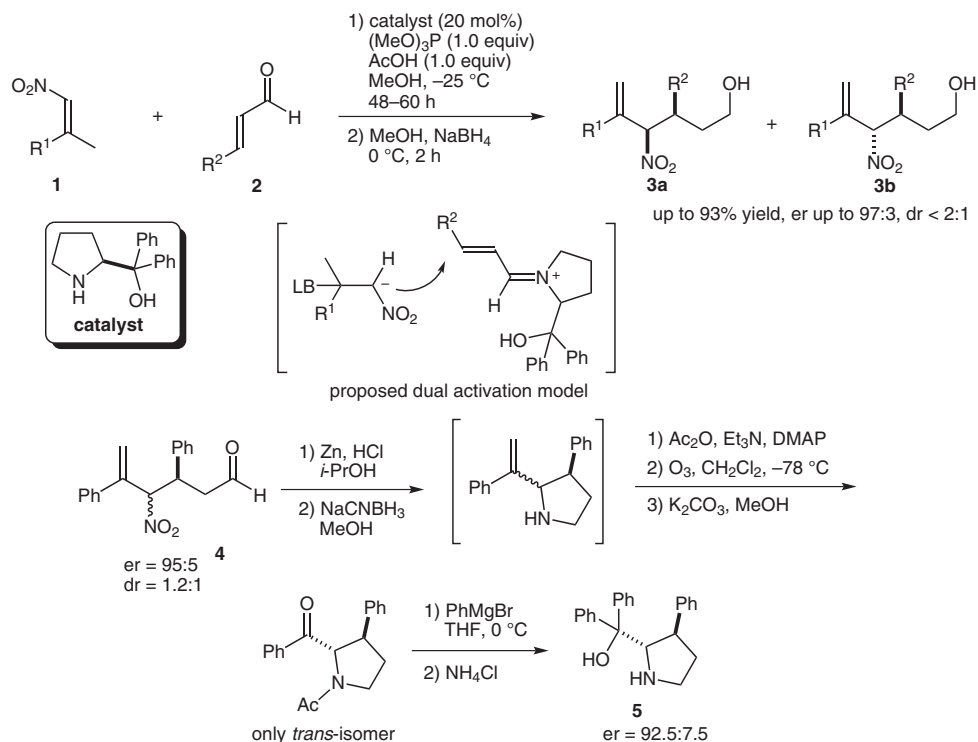
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Enantioselective Intermolecular Crossed-Conjugate Additions between Nitroalkenes and α,β -Enals through a Dual Activation Strategy

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Crossed-Conjugate Additions of Nitroalkenes and α,β -Unsaturated Aldehydes



Significance: The authors present an enantioselective intermolecular crossed-conjugate addition of nitroalkenes and α,β -unsaturated aldehydes through a dual Lewis base (LB) activation strategy. In the presence of 20 mol% of the prolinol catalyst, the crossed-conjugate addition proceeded smoothly with the addition of (OMe)₃P and AcOH, providing the adducts in good yields and high enantioselectivities. A synthetic application was demonstrated by the authors, in which the crossed-conjugate addition product **4** was transformed into the only *trans*-isomer of substituted pyrrolidine **5**.

Comment: Though intermolecular crossed-conjugate addition reactions could be of great importance to prepare highly functionalized products, the inherent problems like competition between homo-crossed addition and hetero-crossed addition, polymerization of the starting materials and stereochemical control makes it a challenging task. Despite low diastereoselectivity, the high yields and enantioselectivities achieved in this work are impressive. Further application of this C–C bond-formation strategy can be expected.

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