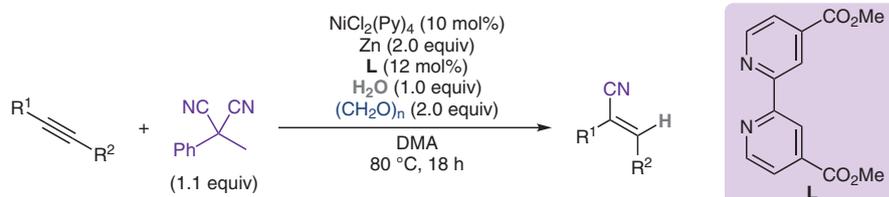


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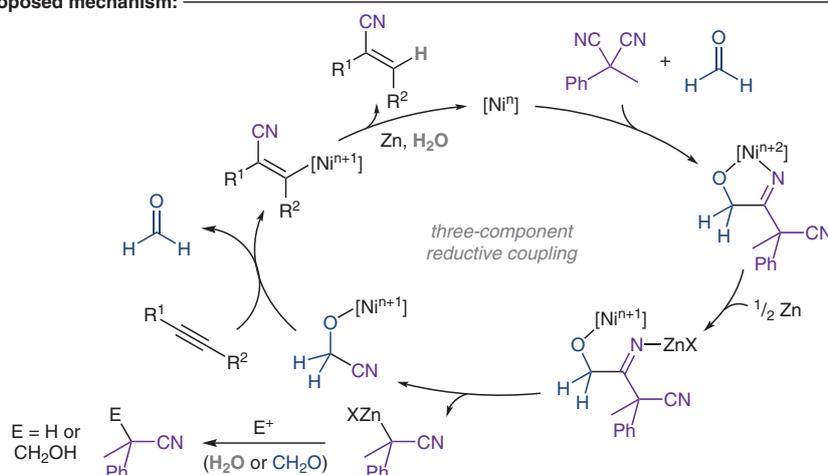
Nickel-Catalyzed Reductive Alkyne Hydrocyanation Enabled by Malononitrile and a Formaldehyde Additive

J. Am. Chem. Soc. **2023**, *145*, 24981–24989, DOI: 10.1021/jacs.3c10165.

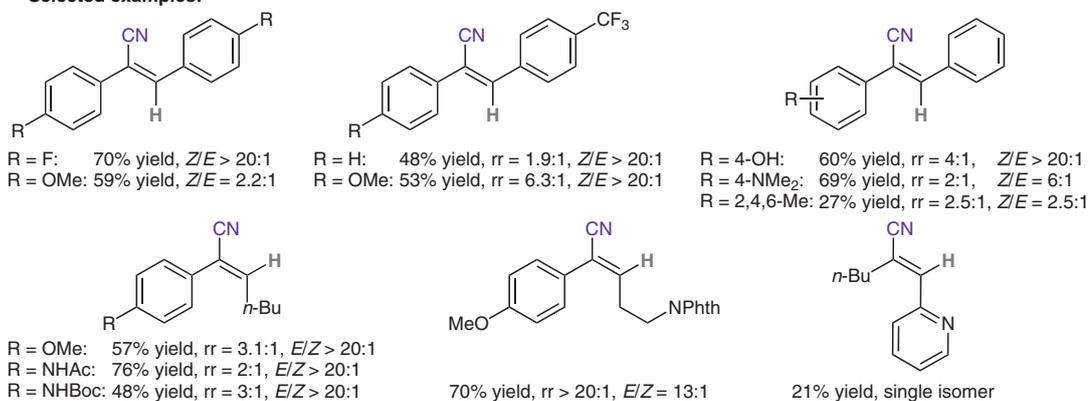
Nickel-Catalyzed Hydrocyanation of Alkynes Using a Malononitrile as Transnitrilation Reagent



— Proposed mechanism:



— Selected examples:



Significance: Rousseau and co-workers disclosed a nickel-catalyzed alkyne hydrocyanation making use of glycolonitrile as active cyanating agent, which is formed in situ by reductive coupling of 2-methyl-2-phenylmalononitrile (MPMN) and formaldehyde.

Comment: The proposed mechanism is supported by mechanistic studies such as deuterium labeling and anion trapping experiments, ruling out the generation of a nickel-hydride intermediate.

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Metals in Synthesis

Key words

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