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Mechanochemical Activation of Iron Cyano Complexes: A Prebiotic Impact Scenario for the Synthesis of α-Amino Acid Derivatives
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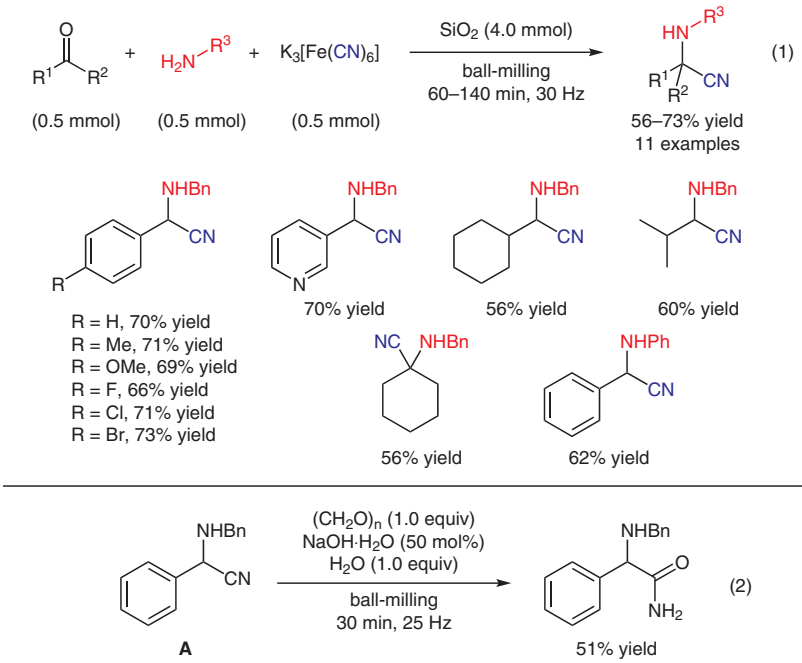
Mechanochemical Generation of HCN from $K_3[Fe(CN)_6]$: A Novel Strecker Protocol



Significance: A Strecker reaction of carbonyl compounds, primary amines, and potassium ferricyanide was carried out in the presence of SiO_2 under ball-milling conditions to give the corresponding α-aminonitriles in 56–73% yield (eq. 1, 11 examples). The hydration of α-aminonitrile **A** also proceeded under ball-milling conditions to afford the corresponding amino amide in 51% yield (eq. 2).

Comment: In situ generation of HCN was found to take place through mechanochemical activation of potassium ferricyanide {$K_3[Fe(CN)_6]$} by ball-milling in the presence of SiO_2. The resulting HCN was trapped in situ by a Strecker reaction with benzaldehyde and benzylamine to give **A**.

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Polymer-Supported Synthesis

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