

Chemistry of α -Iminonitriles:

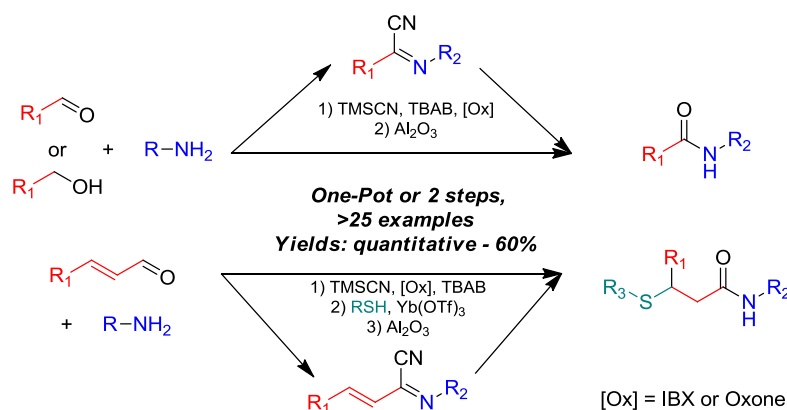
Amidation of Aldehydes and Alcohols and Three-component Strecker /Thio-Michael Addition/ Hydrolysis to Access β -Mercaptoamides

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A mild and general alumina-promoted hydrolysis of α -iminonitriles to amides was developed. In combination with the oxidative three-component Strecker reaction, a one-pot amidation of aldehydes and alcohols was documented. We subsequently detailed an Yb(OTf)₃-catalyzed Michael addition of thiols to α,β -unsaturated α -iminonitriles for the synthesis of β -mercapto- α -iminonitriles. Successful integration of both processes allowed us to develop a direct conversion of an amine, an aldehyde and a thiol to a β -mercaptoamide. All these protocols were applicable to aromatic as well as aliphatic amines and aldehydes. Extension of these protocols to replace expensive IBX by eco-friendly Oxone was also detailed giving access to an even broader range of substrates.



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