

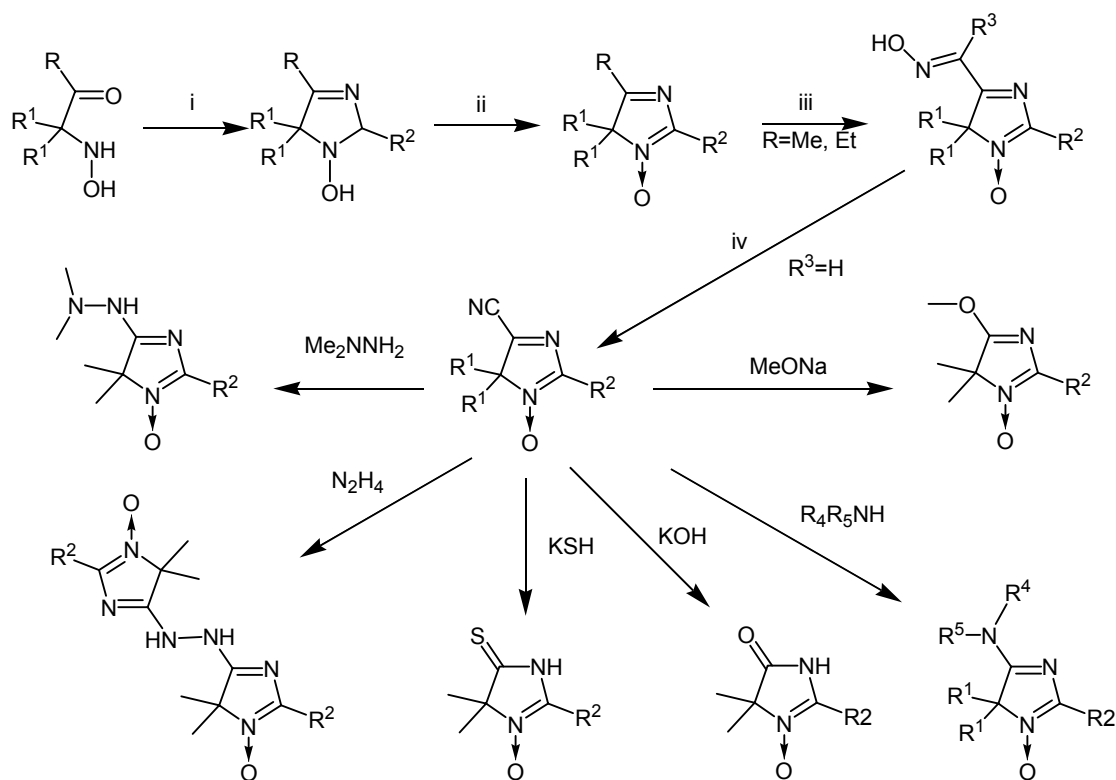
Synthesis and Reactions of 4*H*-Imidazole-5-carbonitrile 3-oxides

Igor A. Kirilyuk^a, Denis A. Morozov^b, Tikhon G. Shevelev^b,
 Vladimir S. Medvedev^b, Anatoly V. Lebedev^b, Igor A. Grigor'ev^{a,b}

^a *N.N. Vorozhtsov Institute of Organic Chemistry SB RAS,
 ave. akad. Lavrentjeva, 9, 630090 Novosibirsk, Russia*

^b *Novosibirsk State University
 Pirogova St., 2, 630090 Novosibirsk, Russia; Fax: +7-3832-34-47-52
 E-mail: kirilyuk@nioch.nsc.ru*

A series of 4*H*-imidazole 3-oxides have been prepared *via* condensation of α -hydroxyamino ketones with aldehydes and ammonia and subsequent oxidation. A convenient method of nitrosation of the 5-methyl-4*H*-imidazole 3-oxides has been developed. The resulting 4*H*-imidazole-5-carbaldehyde oxime 3-oxides were converted to nitriles. The later were shown to react with various nucleophiles via cyano group substitution.



R=Alk, Ar, Het; R¹=Me, Et; R²=H, Alk, Ar, Het; R³=H, Me; R⁴=H, Alk, Ar; R⁵=H, Alk

i: R₂CHO, NH₃, EtOH; ii: PbO₂/MnO₂, CHCl₃; iii: i-PrONO, i-PrONa, i-PrOH; iv: TsCl, Et₃N, CHCl₃