

Reaction of 1,2-(Bishydroxyamino)cyclohexane Derivatives with Malonaldehydes

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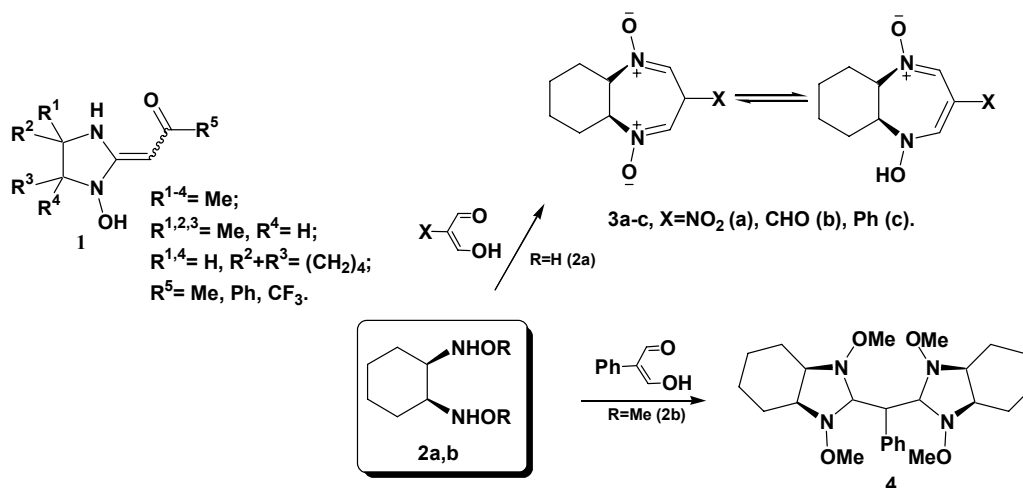
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In general, 1,2-diamines react with 1,3-dicarbonyl compounds in the presence of acids forming 2,3-dihydro-1,4-diazepinium salts¹. However, another types of the *N*-centered binucleophiles, namely, aliphatic 1,2-bishydroxyamines, react with 1,3-ketoaldehydes under similar conditions with the formation of 2-acylmethylidenimidazolidines² **1** as a sole products. Latter are promising precursors for designing new materials with magnetic properties³.



We supposed that aliphatic 1,2-bishydroxyamines might react with reactive 1,3-dialdehydes to form either new 2-acylmethylidenimidazolidines with additional functional group or unknown 1,4-diazepine-*N*-oxides.

As a result of our research, we established that reaction of *cis*-1,2-(bishydroxyamino)cyclohexane **2a** with 2-substituted malonaldehydes leads presumably to 1,4-diazepine-*N,N'*-dioxides **3a-c**. According to spectral data equilibrium between two or more tautomeric forms of compounds **3** was proposed. Reaction of 1,2-(bismethoxyamino)cyclohexane **2b** with phenylmalonaldehyde led to formation of bis(imidazolidine)phenylmethane **4** in high yield.

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⁽³⁾ V. I. Ovcharenko, I. Korobkov, S. V. Fokin, *at al.* // *Mol. Cryst. Liq. Cryst.*, **1997**, 505, 311.