# SOME CYCLIZATION REACTIONS IN THE NITROSATION OF UREA DERIVATIVES

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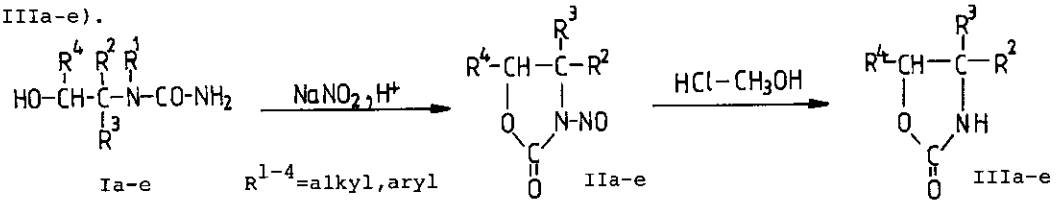
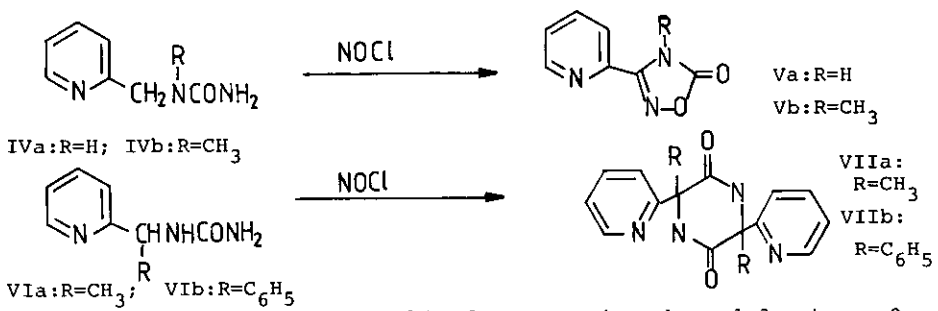
In the course of the study to prepare new, antitumor nitrosourea derivatives, we found some cyclization reactions in the nitrosation of mono-substituted ureas. 1) Treatment of N-(2-hydroxyethyl)ureas (Ia-e) with sodium nitrite and dil. hydrochloric acid, gave 1-nitroso-2-oxazolidinone derivatives (IIa-e), which were easily denitrosated to give 2-oxazolidinone derivatives (IIIa-e).




2) Treatment of N-(2-pyridylmethyl)ureas (IVa,b) with nitrosyl chloride gave 1,2,4-oxadiazole derivatives (Va,b). However, ureas VIa,b, which are substituted at the methylene group of compound IVa,b, gave 2,5-diketopiperadine derivatives (VIIa,b).




3) N,N'-ethylenbis(ureas) (VIIIa,b) cyclized to give 1-carbamoyl-3-nitroso-2-imidazolidinone derivatives (IXa,b) under nitrosating conditions. Compounds IXa,b were denitrosated to give 1-carbamoyl-2-imidazolidinones (XIa,b) by treatment with acidic methanol.