SOME NEW HETEROCYCLISATIONS BASED ON *N*-(2,2-DICHLORO-1-ISOTHIOCYANATOETHYL)BENZAMIDE DERIVATIVES

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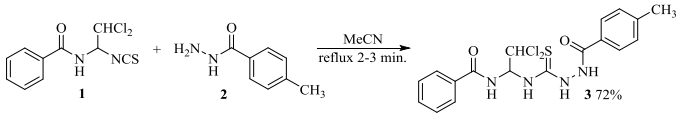
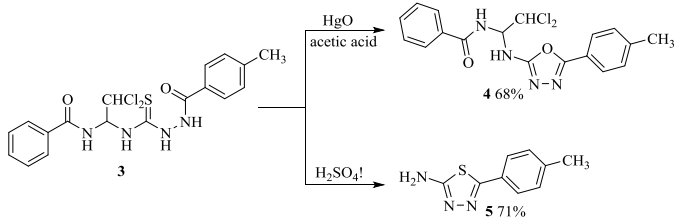
The search for new and expanding the scope of application of known reagents for the synthesis of heterocyclic compounds is a very important and urgent task. Previously, *N*-(2,2,2-trichloro-1-isothiocyanatoethyl)carboxamides were successfully used to synthesize derivatives of 1,3,5-oxadiazines, 1,3,4-oxa(thia)diazoles and other heterocyclic compounds.

We have briefly reported the attempts to introduce *N*-(2,2-dichloro-1-isothiocyanatoethyl)benzamide. The compound **3** was not described in the literature before. Its synthesis was carried out according to scheme 1. Addition of *para*-toluic hydrazide **2** to isothiocyanate **1** resulted in the formation of *N*-(2,2-dichloro-1-(2-(4-methylbenzoyl)hydrazine-1-carbothioamido)ethyl)benzamide **3**. The preparation of **3** was carried out in acetonitrile, which greatly facilitated the isolation of the product and allowed it to be obtained in high yields and of sufficient purity for use in further conversions without further purification.



Scheme 1. Synthesis of *N*-(2,2-dichloro-1-(2-(4-methylbenzoyl)hydrazine-1-carbothioamido)-ethyl)benzamide **3**

To complete the oxadiazole cycle, a 50 % excess of HgO was used as the dehydrosulfinating agent. The reaction was carried out during refluxing for 40-60 minutes without formation of by-products.



Scheme 2. Synthesis of *N*-(2,2-dichloro-1-((5-(*p*-tolyl)-1,3,4-oxadiazol-2-yl)amino)ethyl)benzamide **4** and 5-(*p*-tolyl)-1,3,4-thiadiazol-2-amine **5**

The structures of the compounds obtained were confirmed by ^{1}H, ^{13}C NMR spectroscopy and mass spectrometry data.