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Heterocyclic Compounds from Thiooxamidehydrazides

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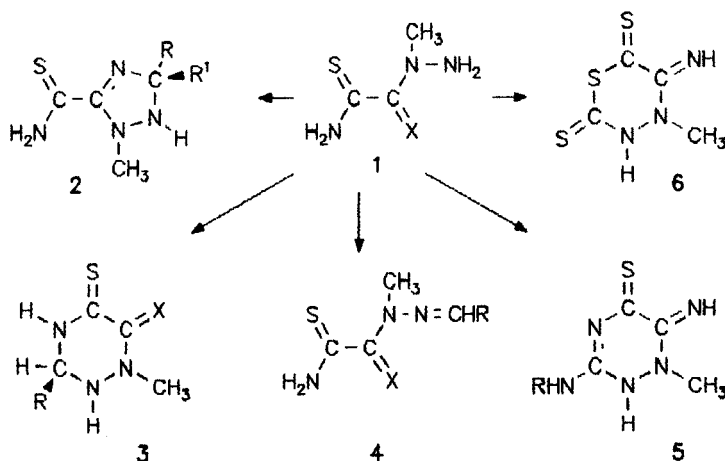
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HETEROCYCLIC COMPOUNDS FROM THIOOXAMIDEHYDRAZIDES

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(Di)thiooxamidehydrazides proved to be versatile precursors for new interesting sulfur and nitrogen containing open chain and heterocyclic compounds, useful as ligands in coordination chemistry. The reaction behavior of thiooxalic amide-N¹-methylhydrazidimide **1a** showed both similarities and differences compared with other (di)thiooxamidehydrazides. So reactions of **1a** (X = NH) with aliphatic ketones gave triazoles **2**, whereas **1b** (X = S) led to triazines **3** (X = S). On the other hand reactions of **1a** with aromatic aldehydes resulted in the formation of 1,2,4-triazine-5-thiones **3** (X = NH)



or (and) open chain products **4** (X = NH). With **1b** only the formation of **4** (X = S) was observed. Reactions of **1a** with isothiocyanates afforded mixtures of 1,2,4-triazines **5** and 1,3,4-thiadiazines. The thiadiazine **6** was available with carbon disulfide. The spectroscopical data of the new compounds compared with appropriate data of already known derivatives of (di)thiooxamidehydrazides will be presented. As expected compounds **3**, **5**, **6** and **4** in reactions with d-element cations proved to be good ligands.