Reinvestigation of the Thiazole Synthesis with Ethyl 3-Amino-2-[5-aryl-1,3,4-oxadiazol-2(*3H*)-ylidene]-3-thioxopropanoates and Related Reactions

Nico Paepke[a, b], Helmut Reinke[a], Klaus Peseke[a], and Christian Vogel[a]

[a] Department of Organic Chemistry, Institute of Chemistry, University of Rostock, Albert-Einstein-Straße 3a, 18059 Rostock, Germany
[b] Current address: Schreiner Group GmbH & Co. KG, Bruckmannring 22, 85764 Oberschleißheim, Germany

Reprint requests to Prof. Dr. Christian Vogel. Fax: +49-381-498-6412.
E-mail: christian.vogel@uni-rostock.de

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Treatment of the 1,3,4-oxadiazoles **3a** and **3b** with 3-chloropentane-2,4-dione gave the thiazoles **4a** and **4b**, respectively, which were methylated to furnish compounds **5a** and **5b**. The formation of 1,3,4-oxadiazoles using the 1,3-dithietane **1** as starting material, and the consecutive reactions mentioned above were transferred into sugar chemistry to provide the corresponding derivatives **6** – **9** in good yields. The reaction of **5a** with benzyl amine, ethylene diamine and *o*-phenylene diamine afforded compounds **10**, **11**, and **12**, respectively, which possess better stabilized *push-pull* systems than **5a**. The structures of **3a**, **4a**, **5a**, **10**, **11**, and **12** were compared with the previously proposed structures **I** – **VI**, respectively. The structures of compounds **1**, **3b**, and **11** were confirmed by X-ray diffraction studies.

Key words: Diethyl (1,3-Dithietane-2,4-diylidene)bis(2-cyanoacetate), *Push-pull* Chemistry, Hydrogen Sulfide Migration, Consecutive Ring Closure Reaction, Structural Reinvestigation