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# SYNTHESIS OF TRIFLUOROMETHYL-CONTAINING OXO(THIOXO)IMIDAZOTHIAZOLONES AND THIOGLYCOLURILS BASED ON PERFLUOROBIACETYL

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#### **Graphical abstract**

$$F_{3}C \xrightarrow{\text{C}} CF_{3} \xrightarrow{\text{NH}_{2}CXNH_{2}} X = S, O \xrightarrow{\text{N}} F_{3}C \xrightarrow{\text{C}} CF_{3} \xrightarrow{\text{i-iii, } \nu} DMA \\ \text{i: NH}_{2}CSNH_{2}; \text{ ii: NH}_{4}SCN; \text{ iii: NH}_{2}CONH_{2}; \\ \nu: R_{1}NHCONHR_{2}: R_{1}=H, R_{2}=Me; R_{1}=H, R_{2}=C_{6}H_{4})Et; \\ R_{1}=R_{2}=Me, Et, Ph \xrightarrow{\text{C}} F_{3} \xrightarrow{\text{N}} CF_{3} \xrightarrow{\text{C}} CF_{3} \xrightarrow{\text{C}} CF_{3} \xrightarrow{\text{N}} CF_{3} \xrightarrow{\text{N}}$$

#### **Highlights**

• 4,5-Dihydroxy-4,5-bis(trifluoromethyl)imidazolidine-2-thione was obtained through the reaction of perfluorobiacetyl with thiourea. Trifluoromethylated thioxo(oxo)imidazothiazolones were obtained by the condensation of 4,5-dihydroxy-4,5-bis(trifluoromethyl)imidazolidine-2-thione(one) with thiourea, NH<sub>4</sub>SCN and *N*-substituted ureas. The condensation of 4,5-dihydroxy-4,5-bis(trifluoromethyl)imidazolidine-2-thione with urea gave mainly trifluoromethyl-containing thioglycoluril.

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