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Synthesis and biological evaluation of new 3-trifluoromethylpyrazolesulfonyl-urea and thiourea derivatives as antidiabetic and antimicrobial agents

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ABSTRACT

Fluorinated pyrazoles, and benzenesulfonylurea and thiourea derivatives as well as their cyclic sulfonylthioureas **2**–**18** were prepared as hypoglycemic and antibacterial agents. The chemistry involves the condensation of 4-hydrazino benzenesulfonamide hydrochloride with 1-trifluoromethyl diketones **1** to give pyrazole derivatives **2** which upon bromination gave the bromopyrazole **3**. Reaction of **2** or **3** with isocyanates and isothiocyanates gave the corresponding ureas **4** and **5** and thioureas **6** and **7**. Cyclization of thiourea derivatives with ethyl bromoacetate, ethyl β-bromopropionate, 1,3-dichloroacetone and α-bromoacetophenone yielded the corresponding 4-oxothiazolidines **8** and **9**, 4-oxo-5,6-dihydrothiazine **10**, 5-oxo-4,5-dihydrothiazines **11** and **12** and thiazolines **13** and **14**. Preliminary biological screening of the prepared compounds revealed significant antidiabetic and antibacterial activities.