P-54

THE SYNTHESIS AND CHEMICAL BEHAVIOUR OF CF_3S-SUBSTITUTED β-DICARBONYL COMPOUNDS

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Ketones, diketones and acetoacetic ethyl ester are known to react with trifluoromethylsulphenyl chloride to give α-SCF_3 substituted products [1]. The reaction with CF_3SCl was extended to benzoylacetic ethyl ester, anilides of acetoacetic and benzoylacetic acids, and their Schiff bases, leading to α-SCF_3 substituted ß-dicarbonyl compounds or their nitrogen analogues. Additionally, the reaction of CF_3SSCF_3 with $C_6H_5COCH_2COOC_2H_5$ was investigated and the optimum conditions found to prepare α-(trifluoromethylthio)benzoylacetic ethyl ester in this way.

Ethyl esters of α-(trifluoromethylthio)acetoacetic and α-(trifluoromethylthio)benzoylacetic acids heated in a dimethylsulphoxide/water solution gave known trifluoromethylthioacetone and ω-(trifluoromethylthio)acetophenone respectively, while the splitting of these esters in a potassium hydroxide methanolic solution provided trifluoromethylthioacetic acid in a good yield, so this reaction could be treated as a new method for synthesis of CF_3SCH_2COOH. Anilides of α-(trifluoromethylthio)acetoacetic and α-(trifluoromethylthio)benzoylacetic acids , and their Schiff bases were cyclized in acidic media to obtain 3-SCF_3 substituted derivatives of quinolones-2 and -4.

The structure of compounds synthesized was confirmed by elemental analyses, IR, MS, ^1H and ^{19}F NMR spectra.

1 H. Bayreuther, A. Haas, Chem. Ber. 106, 1418 (1973).