A CONVENIENT SYNTHESIS OF ESTERS OF 2-PYRROLEDITHIOCARBOXYLIC ACIDS

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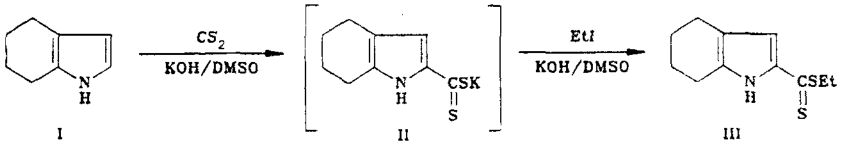
It is known that the interaction of pyrroles with carbon disulfide and bases in aprotic solvents leads, as a rule, to the formation of pyrrole-N-dithiocarbamates [1].

We established that this reaction proceeds differently in the system KOH/DMSO: salts of 2-pyrroledithiocarboxylic acids are formed selectively, and these can readily be converted, without isolation, to the corresponding esters. Thus, 4,5,6,7-tetrahydroindole (I) reacts with carbon disulfide in the indicated system (room temperature, 4 h) and forms the salt (II) which, after treatment with ethyl iodide, gives ethyl 4,5,6,7-tetrahydro-2-indoledithiocarboxylate (III).



Ester (III). The compound has mp 69-69.5°C. IR spectrum (KBr): 1210 cm^{-1} (C=S) and 3300 cm^{-1} (NH). PMR spectrum (DMSO-D_6) is characterized at 6.84 ppm (1H, d, 3-H), 3.34 ppm (2H, q, SCH_2), 1.75 and 2.54 ppm (8H, m, $4CH_2$), and 1.34 ppm (3H, t, CH_3). Yield 56%. The data of the elemental analysis correspond with the calculated values.

The attempt to obtain compound (II) by utilizing the method of the synthesis of 2-pyrroledithiocarboxylic acids, including the interaction of pyrroles with carbon disulfide and bases in water [2], was unsuccessful — the initial pyrrole (I) was virtually completely recovered from the reaction.

LITERATURE CITED

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2. A. Treibs, *Ann.*, **723**, 129 (1969).

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