

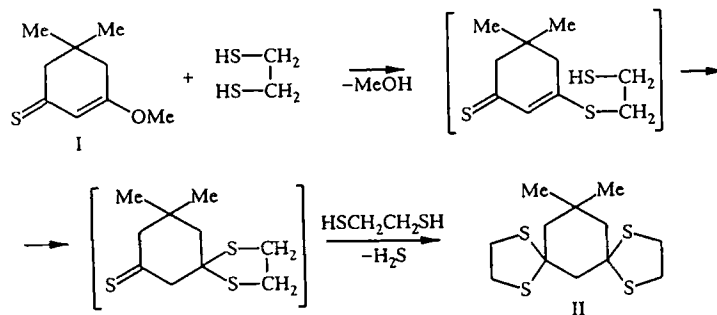
**FORMATION OF DISPIRO[BIS(1,3-DITHIOLANE)]-1,2';3,2'-(5,5-DIMETHYLCYCLOHEXANE) IN THE REACTION OF 3-METHOXY-5,5-DIMETHYL-2-CYCLOHEXENE-1-THIONE WITH 1,2-ETHANEDITHIOL**

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3-Heterosubstituted 2-cyclohexene-1-thiones synthesized in our laboratory react with nucleophiles at the C<sup>3</sup>-heterosubstituent bond (AlkO, AlkS, Cl). Thus, the aminolysis of these compounds is a general method for the synthesis of 3-amino-2-cyclohexene-1-thiones [1], while their hydrothiolysis yields dithio analogs of dimedone [2].

In the present work, we report the reaction of 3-methoxy-5,5-dimethyl-2-cyclohexene-1-thione (I) with an S,S-dinucleophile, namely, 1,2-ethanedithiol. In this case, both reaction sites in thioketone I are involved to give previously unreported dispiro[bis(1,3-dithiolane)]-1,2'; 3,2'-(5,5-dimethylcyclohexane) (II). Replacement of the OMe group must be the first step in this reaction followed by addition of the reagent at the C=S bond. Otherwise, the ability would be markedly diminished due to breakdown of the conjugation system.

**Dispiro[bis(1,3-dithiolane)]-1,2';3,2'-(5,5-dimethylcyclohexane) (II).** A solution of 1.0 g (0.006 mole) thioketone I, 1.7 g (0.018 mole) 1,2-ethanedithiol, and 0.05 g *p*-toluenesulfonic acid in 10 ml absolute methanol was left for 7 days in an argon atmosphere in the dark. White crystalline II was filtered off and washed with methanol to give 1.2 g (70%) II, mp 162-164°C (from 1-propanol).



PMR Spectrum in CDCl<sub>3</sub>: 1.08 (6H, s, 2 Me), 1.90 (4H, s, 4- and 6-CH<sub>2</sub>), 2.63 (2H, s, 2-CH<sub>2</sub>), 3.25 ppm (8H, s, 4-CH<sub>2</sub>-S). Found: C, 48.96; H, 6.90; S 43.59%. Calculated for C<sub>12</sub>H<sub>20</sub>S<sub>4</sub>: C, 49.31; H 6.85; S, 43.84%.

**REFERENCES**

1. L. V. Timokhina, V. A. Usov, Ya. S. Tsetlin, E. O. Tsetlina, and M. G. Voronkov, Zh. Org. Khim., 15, 82 (1979).
2. V. A. Usov, L. V. Timokhina, L. I. Lavlinskaya, and M. G. Voronkov, Zh. Org. Khim., 15, 2598 (1979).

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