

RESEARCH ON SOME CONDENSATION PRODUCTS IN THE 2, 2'-DITHIENYL SERIES. II*

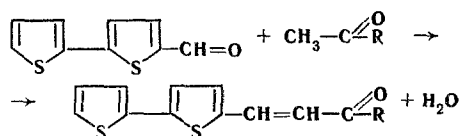
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Crotonoid condensation of 5-formyl-2, 2'-dithienyl with some aromatic and heterocyclic ketones in alkaline medium is used to synthesize a number of hitherto undescribed α, β unsaturated ketones of the 2, 2'-dithienyl series. All the compounds investigated give intensely colored halochromic solutions in sulfuric acid.

We previously described the preparation of α, β unsaturated ketones based on crotonoid condensation of 5-acetyl-2, 2'-dithienyl with aromatic and heterocyclic aldehydes and nitroaldehydes. Continuing research on condensation products of the 2, 2'-dithienyl series, we have synthesized some α, β unsaturated ketones by crotonoid condensation, in alkaline medium, of 5-formyl-2, 2'-dithienyl with aromatic and heterocyclic ketones, the equation being



The unsaturated ketones synthesized (table) are crystalline and mainly yellow, soluble in benzene, and dioxane, less soluble in ethanol, and insoluble in water. They all have characteristic halochromic properties and in sulfuric acid their color deepens to bluish-violet.

EXPERIMENTAL

5-Formyl-2, 2'-dithienyl was prepared, as described in [2], by reacting 2, 2'-dithienyl with dimethylformamide in the presence of POCl_3 .

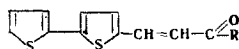
Ketones I-V (table). To a solution of equimolecular amounts (0.0018 mole) 5-formyl-1, 2'-dithienyl and the appropriate aromatic or aliphatic ketone, in a small amount of EtOH, 10-15 drops of 20% aqueous NaOH solution was added dropwise with stirring. The mixture was then left overnight, the precipitate filtered off, washed with aqueous EtOH, then water and recrystallized from 95% EtOH (ketone III ex n-octane), until the mp was constant.

REFERENCES

1. A. E. Lipkin and N. I. Putokhin, KhGS [Chemistry of Heterocyclic Compounds], 519, 1966.
2. E. Lescot, Ng. Ph. Buu-Hoi, and N. D. Xuong, J. Chem. Soc., 3234, 1959.

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Compound no.	R	Mp, °C	Formula	S, %		Yield, %
				Found	Calculated	
I		166-168	$\text{C}_{23}\text{H}_{16}\text{OS}_2$	17.47	17.21	41.1
II		105-108	$\text{C}_{15}\text{H}_{10}\text{OS}_3$	31.71	31.80	27.2
III		161-163	$\text{C}_{21}\text{H}_{14}\text{OS}_3$	25.37	25.41	26.6
IV		109-110	$\text{C}_{21}\text{H}_{14}\text{OS}_2$	18.33	18.50	34.1
V		88-92	$\text{C}_{25}\text{H}_{16}\text{OS}_3$	22.62	22.44	25.3

*For Part I see [1].