

SHORT
COMMUNICATIONS

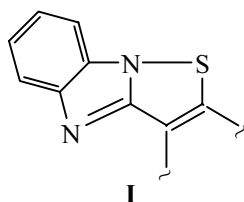
Alternative Synthesis of Imidazobenzisothiazole Ring

Zh.V. Shmyreva, L.F. Ponomareva, T.V. Zemtsova, V.V. Frolova, and Yu.N. Titova

Voronezh State University, Voronezh, 394031 Russia

Received March 24, 2004

Imidazobenzisothiazole ring **I** is known [1] to be built up by a multistage synthesis from sulfoxide derivatives.

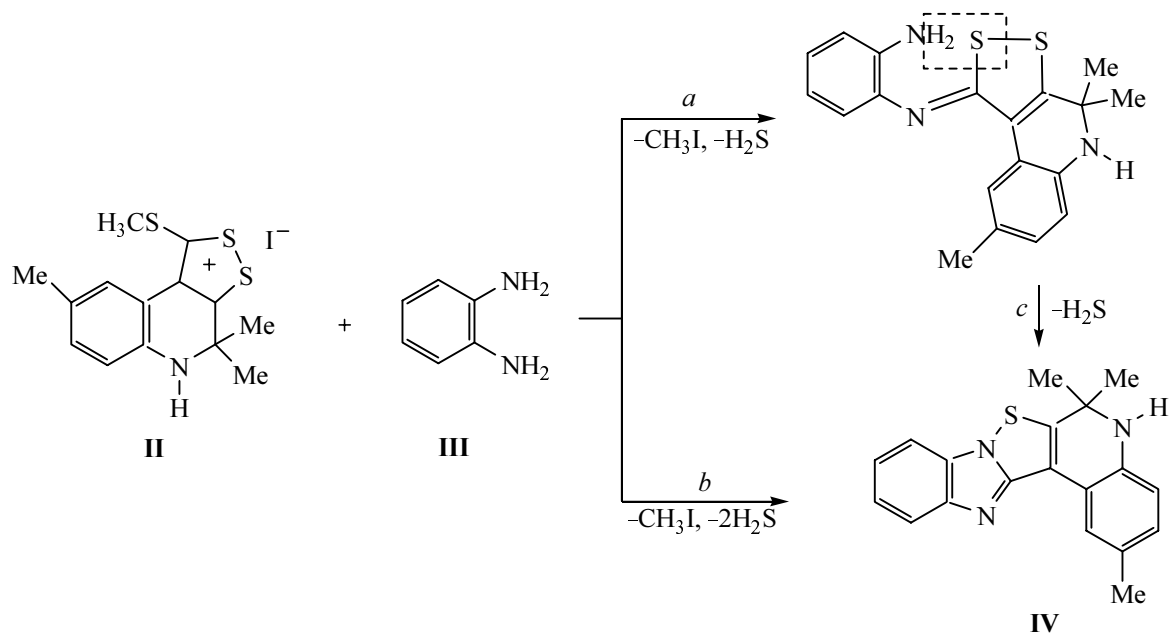


Here we report on an alternative synthesis of structure **I** by reaction of vicinal diamines with 1,2-dithiol-3-thiones.

In particular, exploring further the chemistry of 2,2,4-trimethylhydroquinolines [2, 3] we isolated from reaction mixture of 4,4,8-trimethyl-4,5-dihydro-2,3-dithiolo[5,4-*c*]quinoline iodomethylate (**II**) and *o*-phenylenediamine (**III**) 2,6,6-trimethyl-5,6-dihydrobenzo [4',5']imidazo-[1',2':2,3]isothiazolo[5,4-*c*]quinoline (**IV**).

The process mechanism involves presumably a successive (*a, c*) or synchronous (*b*) hydrogen sulfide elimination.

Compound **IV** is a red crystalline substance soluble in ethanol, acetone, dioxane, DMF, DMSO, insoluble in



water. Its structure was proved by mass spectra and elemental analysis.

Thus for the first time an intermolecular cyclization was performed of *o*-phenylenediamine (**III**) with

iodomethylate of hydroquinoline dithiolthione **II**; hence a convenient preparative procedure for building up ring **I** was developed. We presume that this cyclization is of general character.

Equimolar amounts of reagents **I** and **II** [4] (0.02 mol) were heated in 2-propanol for 0.5–1 h till the salt dissolved. The solution was filtered, evaporated, and cooled. The separated precipitate was recrystallized from ethanol. Yield of compound **IV** 60–70%, mp 286–287°C. Found, %: N 13.23. $[M]^+$ 319, $[M - CH_4]$ 305. $C_{19}H_{17}N_3S$. Calculated, %: N 13.17.

REFERENCES

1. Hoffman, R. W. and Goldman, S., *Chem. Ber.*, 1978, p. 2716.
2. Shmyreva, Zh. V., *2,2,4-Trimetilgidrokhinolin* (2,2,4-Trimethylhydroquinolines), Voronezh: Izd. Voronezh. Gos. Univ., 2000, p. 122.
3. Shmyreva, Zh. V. and Ponomareva, L. F., *Zh. Org. Khim.*, 2002, vol. 38, p. 477.
4. Brown, G. P., *J. Chem. Soc.*, 1968, p. 1074.