1-Phenylamino-3-benzoyloxypropane (III). The yield was 51%; the bp was 201-203°C (5 mm). The IR spectrum: 3400, 3030, 1710, 1610, and 1590 cm^{-1}.

3-Phenylaminopropanol (V). The yield was 72%; the bp was 151-153°C (8 mm). The IR spectrum: 3560, 3400, 3070, 3030, 1610, 1520, 1320, 1270, 1070, and 760 cm^{-1}.

2,3-Diphenyl-5,6-dihydro-1,3-oxazinium Hexachloroantimonate (IV). The yield was 62%; the mp was 108-109°C. The IR spectrum: 3030, 1670, 1600, 1550, 1490, and 1280 cm^{-1}.

The contents of C, H, and N in III, IV, and V correspond to their calculated values.

LITERATURE CITED

1. N. P. Solov'eva, I. A. Terekhina, and A. G. Livshits, Maslo-zhirov. Prom. No. 6, 31 (1968).
2. T. P. Kosulina, E. V. Gromachevskaya, L. G. Malievskaya, and V. G. Kul'nevich, Manuscript deposited in ONIITEkhim, Cherkassy (March 26, 1984), No. 249, khp-D84.

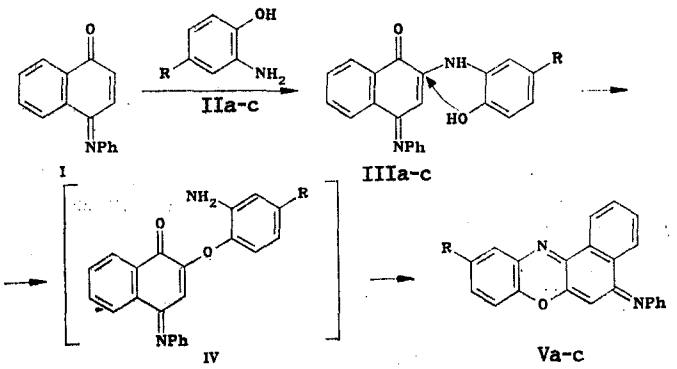
ACIDIC TRANSFORMATION OF 2-(2-HYDROXYPHENYLAMINO)-1,4-NAPHTHOQUINONE-4-PHENYLIMINES INTO N-PHENYLBENZO[a]-PHENOXAZIMES

E. V. Tsoi, G. B. Afanas'eva, and O. N. Chupakhin

UDC 547.655.6'867.6.04

It is known that in reactions of 1,4-naphthoquinone derivatives with o-aminophenols, not only the usual amino derivatives are formed, but also 5-benzo[a]phenoxazinones [1, 2]. According to the data in [1], the formation of the latter occurs as the result of substitution of the nucleophilic residue in the primary amination product by excess of aminophenol. However, another mechanism has also been postulated, whereby the reaction proceeds via alternating phenoxyquinones [2, 3].

We found that 2-(2-hydroxyphenylamino)-1,4-naphthoquinone-4-phenylimines (IIIa-c) which are the sole products of the amination of 1,4-naphthoquinone-4-phenylimine (I) by o-aminophenols (IIa-c) in ethanol, on brief boiling in glacial acetic acid convert completely into N-phenylbenzo[a]phenoxazimes (Va-c).



II, III, V a R=H, b R=CH_3, c R=NO_2

S. M. Kirov Ural Polytechnical Institute, Sverdlovsk 620002.

Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 3, p. 422, March, 1986. Original article submitted June 17, 1985.

0009-3122/86/2203-0350$12.50

This transformation presupposes that an unusual acidic isomerization of compounds III into phenoxyquinonimines IV occurs.

The structure of compounds III, V has been established from the data of the IR, UV, PMR spectra. The structure of the condensation products V is confirmed by the synthesis of compound Va from benzo[a]phenoxazine and aniline [4], and also by the hydrolysis of compounds Va,b to the known 5-benzo[a]phenoxazinones [1].

Given are: mp, °C, yield, %: IIIa, 212-214 (from ethanol), 87; IIIb, 206-208 (from ethanol), 80; IIIc, 250 (dec., from ethanol), 75; Va, 216-218 (from chloroform), 85; Vb, 225-227 (from ethyl acetate), 87, Vc, 268-270 (from ethyl acetate), 70.

The course of the reactions and the purity of the compounds obtained were monitored by TLC. The elemental analysis results correspond to the calculated data.

LITERATURE CITED

1. A. Butenandt, E. Bickert, and W. Schafer, Ann. 632, 143 (1960).
2. N. L. Agarwal and W. Schafer, J. Org. Chem., 45, 2155 (1980).
3. N. L. Agarwal, S. Cloch, A. K. Tripathi, and C. K. Atal, Heterocycl. Chem., 21, 509 (1984).
4. L. S. Goldstein, Helv. Chim. Acta, 659 (1919).