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LETTERS TO THE EDITOR

ONE-STEP SYNTHESIS OF A NAPHTHO-[1,2-*b*]FURAN DERIVATIVE FROM BENZO[*c*]PYRYLIUM PERCHLORATE

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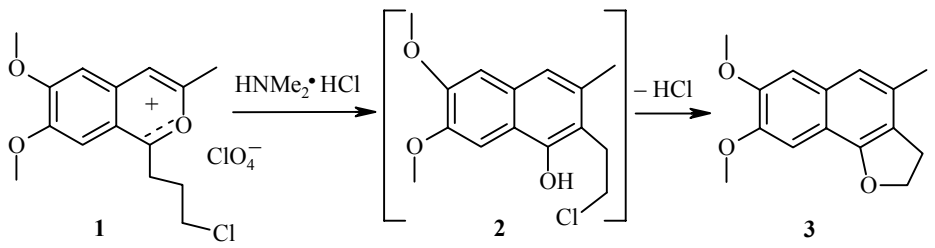
Two directions have been reported for the recyclization of benzo[*c*]pyrilium salts in the presence of secondary amines, leading to either naphthylamines [1] or, as a special case in the reaction with dimethylamine hydrochloride, 1-naphthols [2].

In a study of the reactions of 1-(3-chloropropyl)-6,7-dimethoxy-3-methylbenzo[*c*]pyrilium perchlorate (**1**) with nitrogen nucleophiles [3], we found that a mixture of compounds was formed in the reaction with secondary amines. This mixture proved difficult to separate into individual compounds. On the other hand, the reaction with dimethylamine hydrochloride in ethanol proceeds selectively but not to the expected naphthol (**2**). Under the conditions considered optimal for naphthol preparation [2], a pure compound was obtained. Spectral and analytical data indicated that this product was 7,8-dimethoxy-4-methyl-2,3-dihydronaphtho[1,2-*b*]furan (**3**). In our opinion, this is an example of a tandem-cascade reaction [4] in the benzo[*c*]pyrilium series.



7,8-Dimethoxy-4-methyl-2,3-dihydronaphtho[1,2-*b*]furan (3) was obtained in 81% yield; mp 117-118°C. IR spectrum (KBr), ν, cm^{-1}: 2965 (CH), 1610 (C=C), 1220 (OMe). ^{1}H NMR spectrum on a Gemini-200 spectrometer (200 MHz, $CDCl_3$, HMDS as the internal standard), δ, ppm (*J*, Hz): 2.34 (3H, s, 4-CH_3); 3.24 (2H, t, *J* ~ 8.8, 3-CH_2); 3.88 (6H, s, 7- and 8-CH_3); 4.7 (2H, t, *J* ~ 8.8, 2-CH_2); 6.97 (1H, s, 5-H); 7.04 (1H, s, 6-H); 7.05 (1H, s, 9-H). ^{13}C NMR spectrum on a Gemini spectrometer (50 MHz, DMSO-d_6),

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δ, ppm: 149.0 and 148.1 (7- and 8-CO), 129.9 (CO), 129.5 (C-4), 118.2 (C=C), 117.4 (C-5), 113.3 (C=C), 106.0 (C-6), 99.7 (C-9), 95.5 (C=C), 70.8 (2-CH_2O), 54.8 (7- and 8-CH_3O), 28.9 (3-CH_2), 18.9 (4-CH_3). Found, %: C 73.7; H 6.5. $C_{15}H_{16}O_3$. Calculated, %: C 73.75; H 6.6.

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