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SYNTHESIS OF 3-HALOGENO DERIVATIVES OF IMIDAZO[2,1-b]- AND BENZIMIDAZO[2,1-b][1.3]THIAZINES

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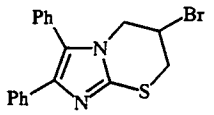
The 3-halogeno derivatives of imidazo[2,1-b][1.3]thiazine have not been described in the literature. In the work [1], the heterocyclization of 2-allylthiobenzimidazole by bromine was studied, whereby 3-bromo-3,4-dihydro-2H-benzimidazo[2,1-b][1.3]thiazine was obtained.

We propose another method for the synthesis of 3-halogenoimidazo(benzimidazo)thiazines, which consists in the reaction of available 3-hydroxy derivatives of imidazo(benzimidazo)thiazines [2] with thionyl chloride or halides of trivalent phosphorus. Thus, the treatment of 3-hydroxy-3,4-dihydro-2H-6,7-diphenylimidazo[2,1-b][1.3]thiazine with PBr_3 in DMF at 18-20°C affords 3-bromo-3,4-dihydro-2H-6,7-diphenylimidazo[2,1-b][1.3]thiazine (I). The yield is 57%. The mp is 197-198°C (decomp., from 70% ethanol). The IR spectrum is characterized by the absence of the absorption band of the OH group. Found, %: C 58.47, H 4.06, Br 21.43, N 7.21, and S 8.72. $C_{18}H_{15}BrN_2S$. Calculated, %: C 58.22, H 4.05, Br 21.55, N 7.54, and S 8.63. The boiling of 3-hydroxy-3,4-dihydro-2H-benzimidazo[2,1-b][1.3]thiazine in excess $SOCl_2$ affords 3-chloro-3,4-dihydro-2H-benzimidazo[2,1-b][1.3]thiazine (II). The yield is 42%. The mp is 155-156°C (decomp., from 30% methanol). The IR spectrum is characterized by the absence of the absorption band of the OH group. Found, %: C 53.47, H 4.34, Cl 15.88, N 12.54, and S 14.54. $C_{10}H_9ClN_2S$. Calculated, %: C 53.45, H 4.04, Cl 15.78, N 12.47, and S 14.24.



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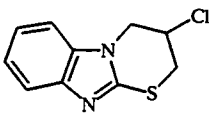

II

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