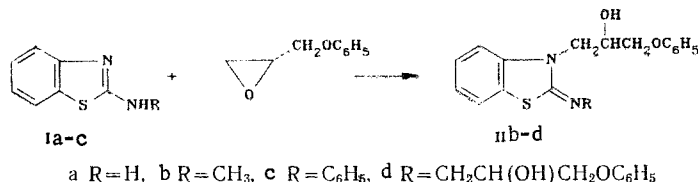


It has previously been shown [1, 2] that 2-aminobenzothiazole reacts with ethylene and propylene oxides at the exocyclic amino group. By treating 2-aminobenzothiazoles (Ib, c) with glycidyl phenyl ether we have synthesized the products of addition at the endocyclic nitrogen atom (IIb, c).



In the case of Ia the product of diaddition (IIId) was obtained. The isomeric amino analog IIIb was obtained for comparison by reaction of 2-chlorobenzothiazole with N-methyl- γ -phenoxy- β -hydroxypropylamine. IIb and IIIb differed in melting point, RF value, and in spectral characteristics.

In the IR spectra of benzothiazolines IIb-d there was observed an intense absorption band for the exocyclic C=N bond at 1625-1630 cm⁻¹. This band was absent in IIIb but an absorption due to the endocyclic C=N bond was found at 1550 cm⁻¹. In the PMR spectra of IIb and IIIb (CDCl₃ solvent) the protons of the NCH₂ groups gave a signal in IIb (4.23 ppm) which was at lower field than that for the amino isomer IIIb (3.86 ppm). In the spectrum of IIc this signal was found at 4.35 ppm thus pointing to the imino structure.

Compound IIb, mp 91-92°C (benzene), yield 42%. Compound IIc, mp 123-124°C (ethanol), yield 44%. Compound IIId, mp 107-108°C (benzene), yield 54%. Compound IIIb, mp 134-135° (benzene/ethanol), yield 30%.

Elemental analytical data was in agreement with that calculated.

LITERATURE CITED

1. P. M. Downey, US Patent, 2642430; Chem. Abstr., 48, 4596 (1954).
2. R. Elderfield, ed., Heterocyclic Compounds [Russian translation], Vol. 5, Inostr. Lit., Moscow (1961), p. 470.