

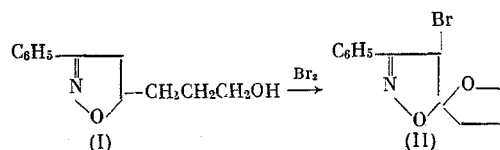
## BROMINATION OF

3-PHENYL-5-( $\gamma$ -HYDROXYPROPYL)ISOXAZOLE

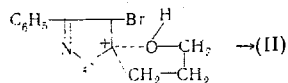
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We discovered a new reaction in the series of 5-( $\gamma$ -hydroxypropyl)isoxazole derivatives (I), and specifically the reaction of (I) with bromine, which in the presence of pyridine leads to the first member of spiro[isoxazoline-5,2'-tetrahydrofuran] (II) in 95% yield. This transformation can be regarded as being



important proof for the intermediate formation of the  $\sigma$ -complex when an isoxazole is reacted with bromine.



According to [1], an intermediate product of this type is formed in the bromination of a 5-phenacyl-3-phenylisoxazole oxime. Heterocycle (I) was obtained in 75% yield by the reaction of benzonitrile N-oxide with 1-propyn-5-ol as described in [2]. Compound (I), mp 53–55°C (1:1 hexane–benzene). Found: C 71.25; H 6.54; N 6.91%.  $C_{12}H_{13}NO_2$ . Calculated: C 70.93; H 6.40; N 6.89%. NMR spectrum ( $\delta$ , ppm, in  $CDCl_3$ ): 6.28 s (CH), 2.04 s (OH), 3.66 t ( $CH_2O$ ), 2.84 t ( $CH_2-C=$ ), 1.94 m ( $CCH_2C$ ). Compound (II), mp 47–48°C (from hexane). Found: C 51.39; H 4.35; N 5.17; Br 28.56%.  $C_{12}H_{12}BrNO_2$ . Calculated: C 51.06; H 4.26; N 4.96; Br 28.37%. NMR spectrum ( $\delta$ , ppm, in  $CCl_4$ ): 4.94 s (CH–Br), 4.60 t (weak splitting,  $CH_2O$ ), ~2.17 m (2  $CH_2$ ).

## LITERATURE CITED

1. C. Caristi and M. Gattuso, J. Chem. Soc., Perkin Trans. I, 680 (1974).
2. H. Kano, I. Adachi, R. Kido, and K. Hirose, J. Med. Chem., 10, 411 (1967).

N. D. Zelinskii Institute of Organic Chemistry, Academy of Sciences of the USSR, Moscow. Translated from *Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya*, No. 11, pp. 2651–2652, November, 1974. Original article submitted July 23, 1974.

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