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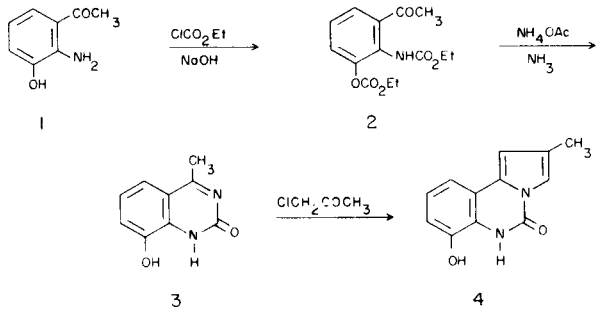
Epibromohydrin was found to react with 7-hydroxy-2-methylpyrrolo[1,2-*c*]quinazolin-5(6*H*)-one (**4**) in the presence of sodium hydroxide to form the novel oxazine **5**. The structure of compound **5** was proven by cmr and pmr analysis.

J. Heterocyclic Chem., **16**, 623 (1979).

Sir:

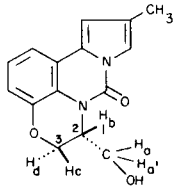
In conjunction with other studies in our laboratories, we wished to prepare the 7-epoxypropyl derivative of 7-hydroxy-2-methylpyrrolo[1,2-*c*]quinazoline-5(6*H*)one (**4**) using the method frequently employed for the condensation of a phenol with epibromohydrin (1). The synthesis of **4** from 2-amino-3-hydroxyacetophenone (**1**) (2) is outlined below.



When **4** was reacted with epibromohydrin in the presence of sodium hydroxide, we did not obtain the anticipated epoxypropyl derivative, but isolated instead, a single unknown product (m.p. 198-200°) with an M^+ of 270, indicating the addition of a C_3H_4O moiety (3). In the pmr spectrum (DMSO-d_6) the proton on the lactam nitrogen in **4** had disappeared, and was replaced in the product by a mobile proton at δ 5.2 (t, J = 6 Hz), coupled to an apparent methylene group at δ 3.4. The coupling between the mobile proton and these two protons could be eliminated by treatment with deuterium oxide supporting the presence of a primary alcohol. The spectrum of the new product also contained three additional protons not found in **4**. These data led us to propose that an oxazine ring had been formed in the reaction and either **5** or **6** appeared to be possible structures for the reaction product.

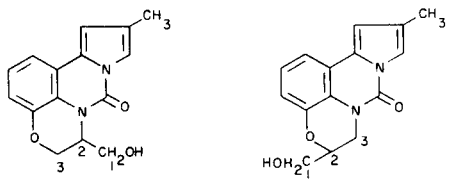
We assigned the structure of the new product by analysis of the pmr and cmr spectra of the oxazine ring and by use of heteronuclear decoupling experiments (see Table). Two off-resonance decoupled cmr spectra were obtained with the proton decoupler positioned at different off-set values. Since the observed residual ^1H-^{13}C coupling constants vary with respect to the position of the single-frequency proton decoupler, we were able to unequivocally assign the appropriate resonances to both carbons and protons (4).

Assignment of protons and carbons on the oxazine ring in Compound 5



Proton(s)	Pmr (a) Chemical Shift in Ppm	Apparent Coupling Constants in Hz	Carbon	Cmr Chemical Shift in Ppm	Multiplicity
H_a, $H_{a'}$	3.4	J_{gem} = 10.8 Jab_{vic} = 5 $Ja'b_{vic}$ = 10	1	57.43	t
H_b	~4.7	width at half-height ~15	2	51.20	d
H_c	4.1	J_{gem} = 12.5 Jbc_{vic} = 2.5	3	63.05	t
H_d	4.7	J_{gem} = 12.5 Jbd_{vic} = 1			

(a) Spectra obtained on a Varian T60A and a Bruker HX-270.



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The carbon resonating at 57.43 was coupled to H_a and $H_{a'}$. In the pmr spectrum, H_a and $H_{a'}$ were coupled to the only mobile proton. This evidence conclusively identified this carbon as that of the primary alcohol on

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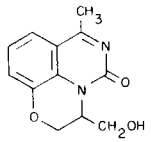
the oxazine ring (carbon 1). Of the remaining two carbons on the new ring, it is apparent from the chemical shift of the methine carbon 2 (51.20), that this carbon is bound to nitrogen. The methylene carbon 3 resonating at 63.05 is clearly bound to oxygen. The chemical shifts of these two carbons support the assignment of structure **5** rather than the isomeric structure **6**.

We were also able to react compound **3** with epibromohydrin in the presence of sodium hydroxide to form the oxazine **7** ($C_{12}H_{12}N_2O_3$, m.p. 220-222°) (5). We believe that the mechanism for formation of these products involves intramolecular attack of the lactam nitrogen on the oxirane ring of an initially formed epoxypropoxyquinazolone intermediate.



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Acknowledgment.

We wish to thank Charles Shaw, Roxanne Naldi and William Pollack for the spectral and analytical data on these compounds. We wish also to acknowledge the valuable assistance of Dr. Steven Patt of Varian, Instrument Division, Florham Park, New Jersey, who provided the cmr spectrum and the off-resonance decoupling experiments of **4** on a CFT-20 nmr spectrometer.

REFERENCES AND NOTES

(1) V. Petrow and O. Stephenson, *J. Pharm. Pharmacol.*, 5, 359 (1953).

(2) P. Klinke and H. Gibian, *Chem. Ber.*, **94**, 26 (1961).

(3) The yield of the new product from this reaction was 13%, the remainder being starting material. The elemental composition of the new product, $C_{15}H_{14}N_2O_3$, was confirmed by both elemental analysis and high resolution mass spectrometry.

(4) This technique is based on the references cited: R. Freeman, and H. D. W. Hill, *J. Chem. Phys.*, **54**, 3367 (1971); B. Birdsall, N. J. M. Birdsall and J. Feeney, *Chem. Commun.*, 316 (1972).

(5) The yield of the oxazine from this reaction was 1.5%, the remainder being starting material.