10H-3-AROYL-4,5-DIHYDROTHIAZOLO[3,4-a]QUINOXAL-4-ONES

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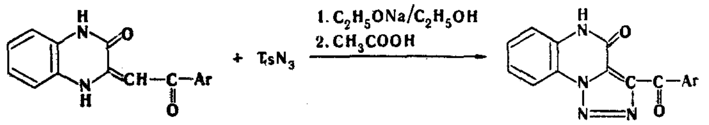
UDC 547.863

In an attempt to obtain 3-(quinoxalon-2-yl)aroyldiazomethanes by reaction of 3-(aroylmethylidene)quinoxal-2-ones with tosyl azide (II) we unexpectedly obtained 10H-3-aroyl-4,5-dihydrotriazolo[3,4-a]quinoxal-4-ones (III):



Ia,b II IIIa,b

a $Ar = C_6H_5$; b $Ar = p\text{-}C_6H_4OCH_3$

The indicated reaction is realized in absolute ethanol in the presence of sodium ethoxide. The reaction mass was maintained at room temperature for 3 h, after which the resulting precipitate was removed by filtration to give the sodium derivative of oximide form III, which is converted to III in glacial acetic acid. Thus 10H-3-benzoyl-4,5-dihydrotriazole-[2,3-a]quinoxal-4-one (IIIa), with mp 246-247°C (the sodium derivative of IIIa had mp 269-270°C), was obtained in 72% yield from 3-(benzoylmethylidene)quinoxal-2-one(Ia), and 10H-3-(p-methoxybenzoyl)-4,5-dihydrotriazole[3,4-a]quinoxal-4-one (IIIb), with mp 239-240°C (the sodium derivative of IIIb had mp 280-281°C), was obtained in 76% yield from 3-(p-methoxybenzoylmethylidene)quinoxal-2-one (Ib). The results of elementary analysis of IIIa, b were in agreement with the calculated values. IR spectra of IIIa, b: 3065 (NH), 1680-1690 (amide carbonyl), and 1590-1610 cm^{-1} (ketone carbonyl). The IR spectra of the sodium derivatives did not contain bands of the vibrations of an amide carbonyl group and an NH bond but did contain an intense band in the region of vibrations of conjugated double bonds (1540 cm^{-}). UV spectrum, λ_{max} (log ε): 324 nm (3.08). Mass spectrum of IIIb, m/e: 320 (M^+), 292 ($M^+ - N_2$), 135 ($^+COC_6H_4OCH_3$), and 145 (quinoxalonyl fragment).

Perm Pharmaceutical Institute, Perm 614600. Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 4, p. 564, April, 1979. Original article submitted October 2, 1978.

0009-3122/79/1504-0465$07.50