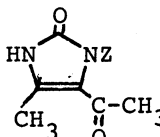
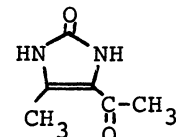
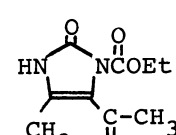
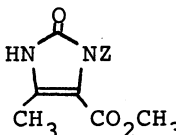
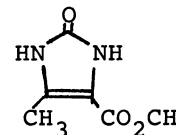
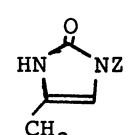
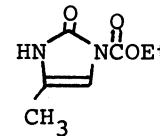
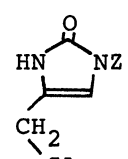
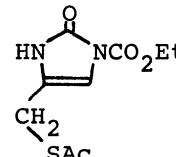




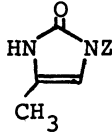
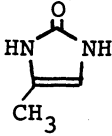
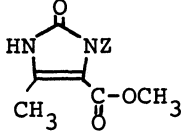
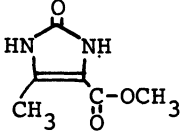
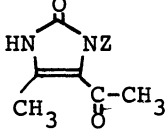
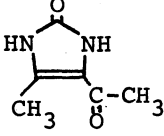
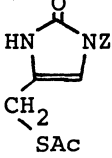
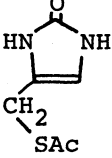
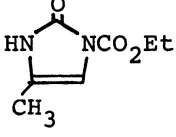
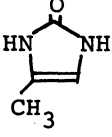
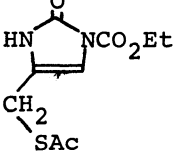
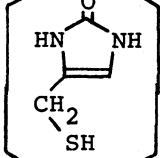


Table I. Yields of 2(1H)-Imidazolone Derivatives

	$\alpha$ -Haloketones	Conditions	Products (%)
[Ia]	$\text{CH}_3\text{COCHClCOCH}_3$	$\text{CH}_3\text{CN}$ reflux 5 hr	  (64) (18)
[Ib]	$\text{CH}_3\text{COCHClCOCH}_3$	$\text{CH}_3\text{CN}$ reflux 4 hr	 (67)
[Ia]	$\text{CH}_3\text{COCHClCO}_2\text{CH}_3$	$\text{CH}_3\text{CN}$ reflux 6 hr	  (56) (10)
[Ia]	$\text{CH}_3\text{COCH}_2\text{Cl}$	$\text{CH}_3\text{CN}$ reflux 6 hr then $\text{MeOH-HCl}$ r.t. 4 hr	 (61)
[Ib]	$\text{CH}_3\text{COCH}_2\text{Cl}$	$\text{CH}_3\text{CN}$ reflux 4.5 hr then $\text{C}_6\text{H}_6\text{-AcOH-AC}_2\text{O-HCl}$ r.t.	 (52)
[Ia]	$\text{CH}_3\overset{\text{O}}{\parallel}\text{CSCH}_2\overset{\text{O}}{\parallel}\text{CCH}_2\text{Cl}$	$\text{CH}_3\text{CN}$ reflux 3 hr then $\text{C}_6\text{H}_6\text{-AcOH-AC}_2\text{O-HCl}$	 (50)
[Ib]	$\text{CH}_3\overset{\text{O}}{\parallel}\text{CSCH}_2\overset{\text{O}}{\parallel}\text{CCH}_2\text{Cl}$	$\text{CH}_3\text{CN}$ reflux 3 hr then $\text{C}_6\text{H}_6\text{-AcOH-AC}_2\text{O-HCl}$ r.t. 4 hr	 (60)

Further, it is noted that the benzyloxycarbonyl group of the 2(1H)-imidazolone was removed by catalytic hydrogenation on Pd-C or by the treatment with 30% HBr in acetic acid. The ethoxycarbonyl group of the 2(1H)-imidazolone was easily removed by alkaline hydrolysis; for example, 4-methyl-2(1H)-imidazolone was obtained in quantitative yield by the treatment of 3-ethoxycarbonyl-5-methyl-2(1H)-imidazolone with potassium hydroxide in methanol at room temperature for 1 hr. These results are summarized in Table II.

Table II. Removal of Benzyloxycarbonyl or Ethoxycarbonyl Group

	Conditions	Products	Yield(%)	mp. (°C)
	H <sub>2</sub> /Pd-C 95% EtOH		quantitative	202-204
	H <sub>2</sub> /Pd-C 95% EtOH		quantitative	200-201
	H <sub>2</sub> /Pd-C 95% EtOH		60	175-180 (dec.)
	30% HBr-AcOH		39	201-204 (dec.)
	KOH-MeOH r.t. 1 hr		quantitative	202-204
	NaOMe-MeOH r.t. 30 min		*	

\* By the reaction of this hydrolyzed product with benzyl bromide, 4-benzylthiomethyl-2(1H)-imidazolone was obtained in 87% yield.

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