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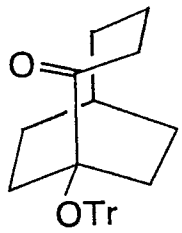
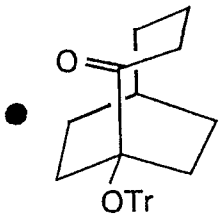
Monitoring of Solvolysis of **12a-OTr** by ^{13}C NMR

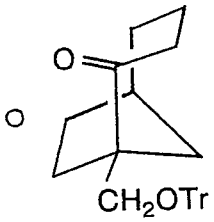


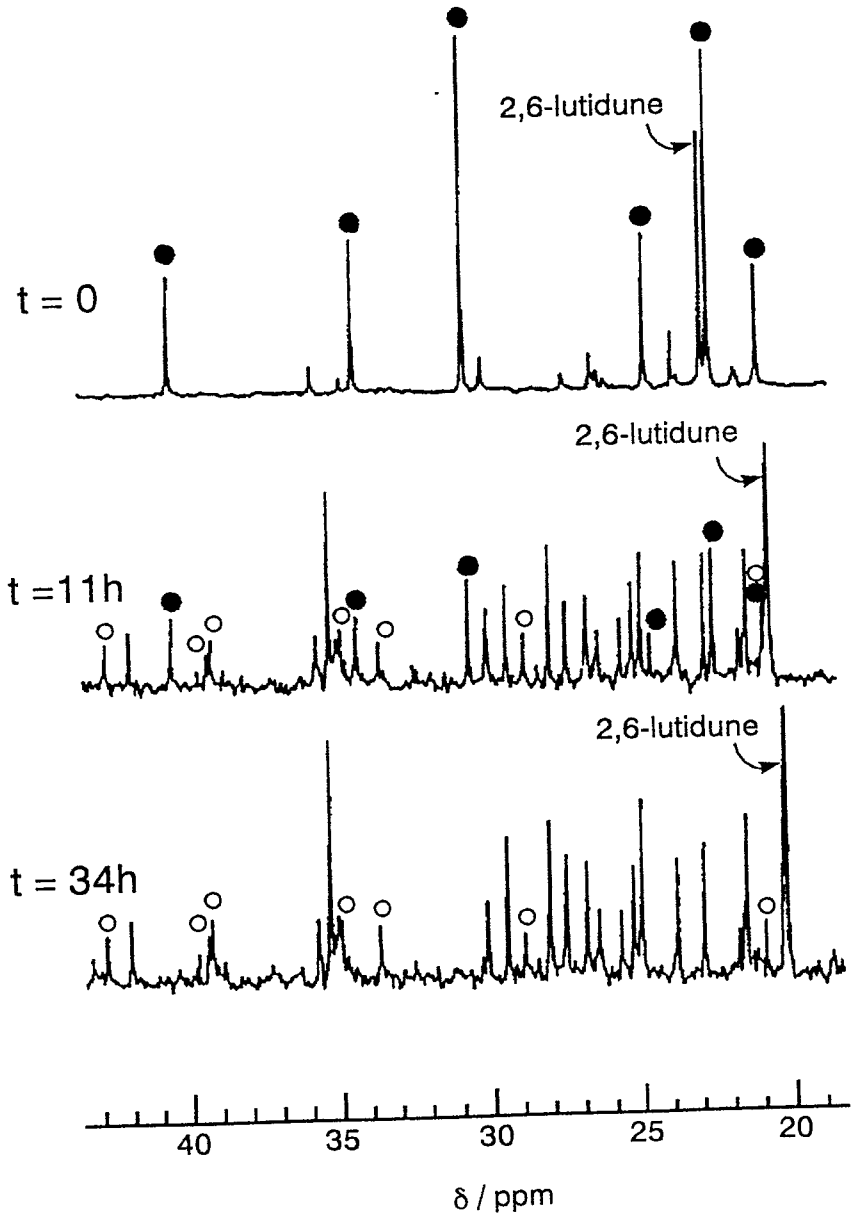
12a-OTr
(0.74 mol L^{-1})

EtOH
2,6-litidine
75 °C

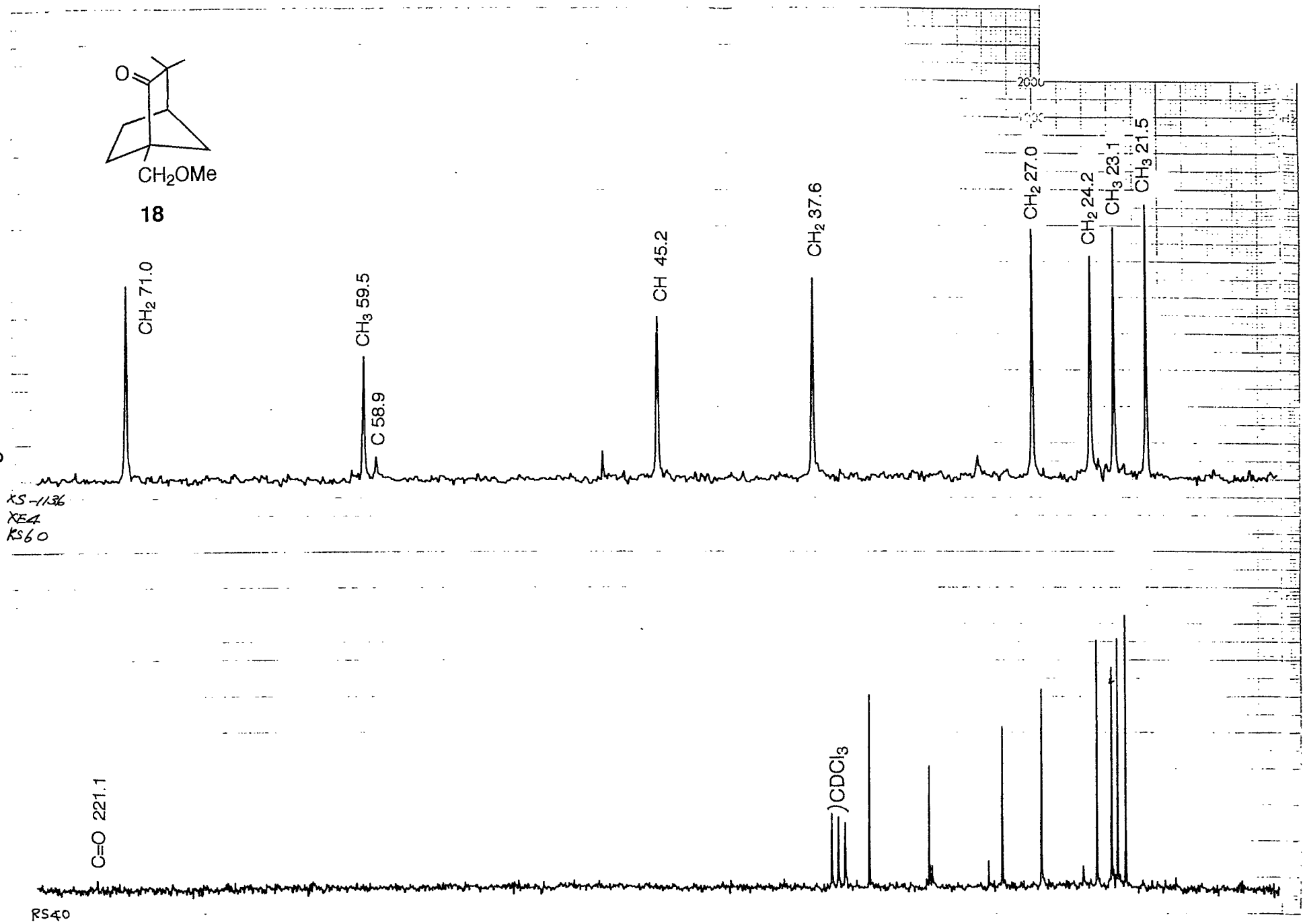
Solvolysis



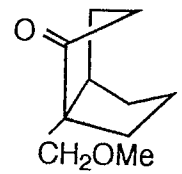




^{13}C NMR spectrum of **18** (25 MHz, $CDCl_3$)



^{13}C NMR spectrum of **20** (68MHz, $CDCl_3$)



20

09-MAY-96 10: 18: 14

EX270

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IRSET 112.00 kHz
IRFIN 5800.0 Hz
IRATN 511
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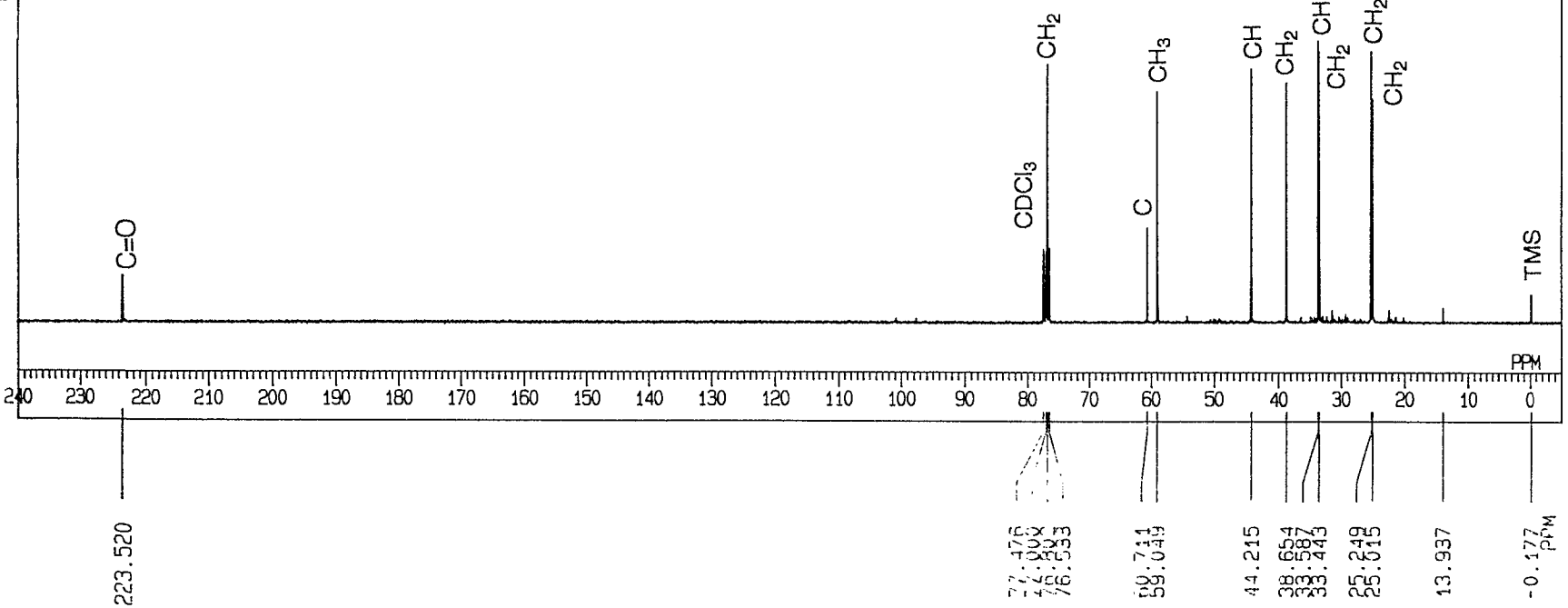
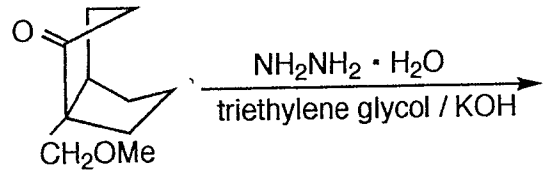
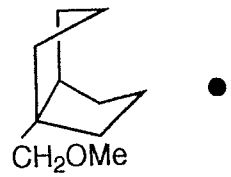
ACQTM 1.638 sec
PD 1.362 sec
SCANS 625
BF 1.00 Hz
OPERATOR :

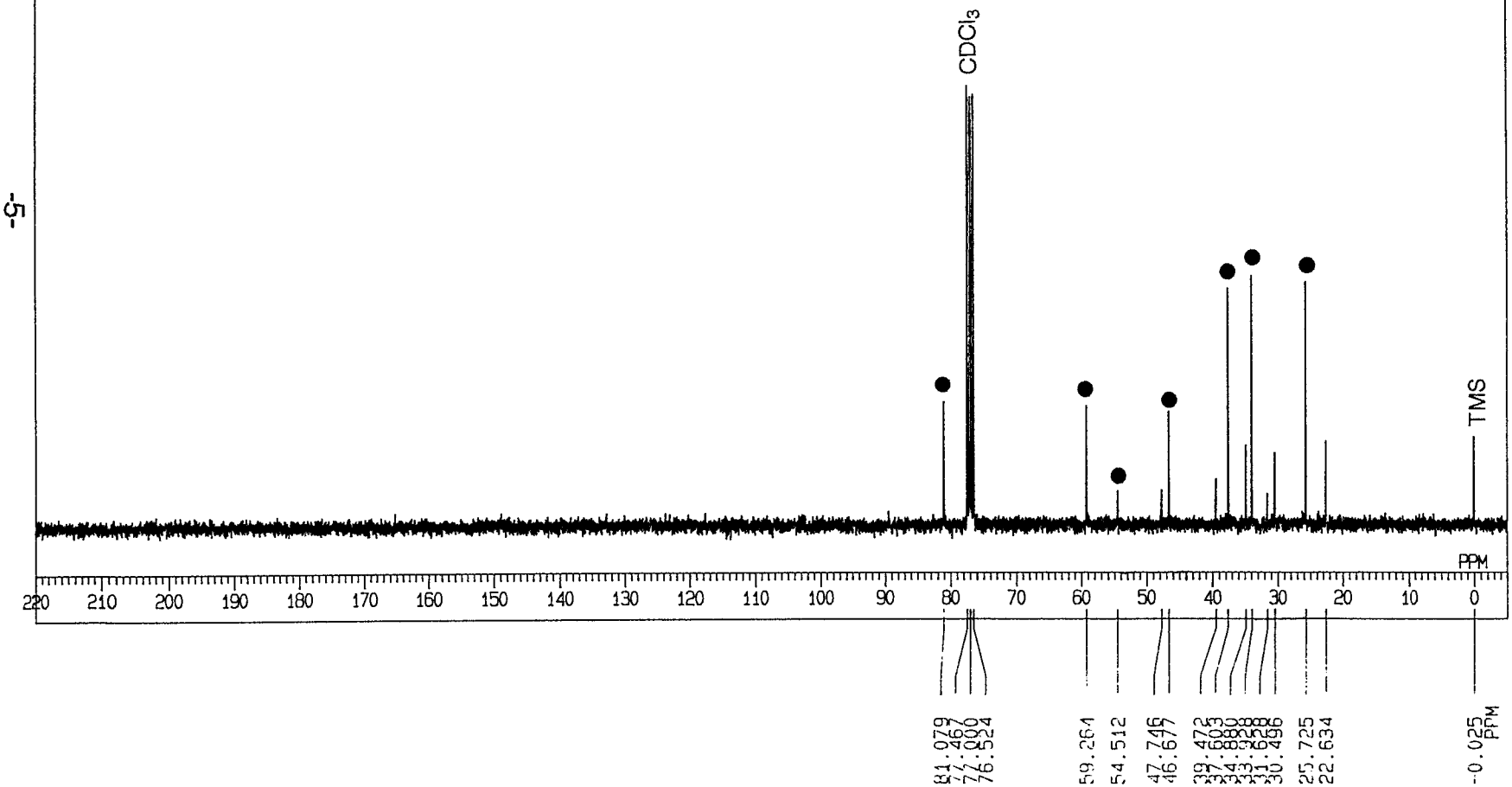


Wolf-Kishner reduction of **20** (^{13}C NMR, 68MHz, $CDCl_3$)



20





28-MAY-96 16: 09: 45

EX270

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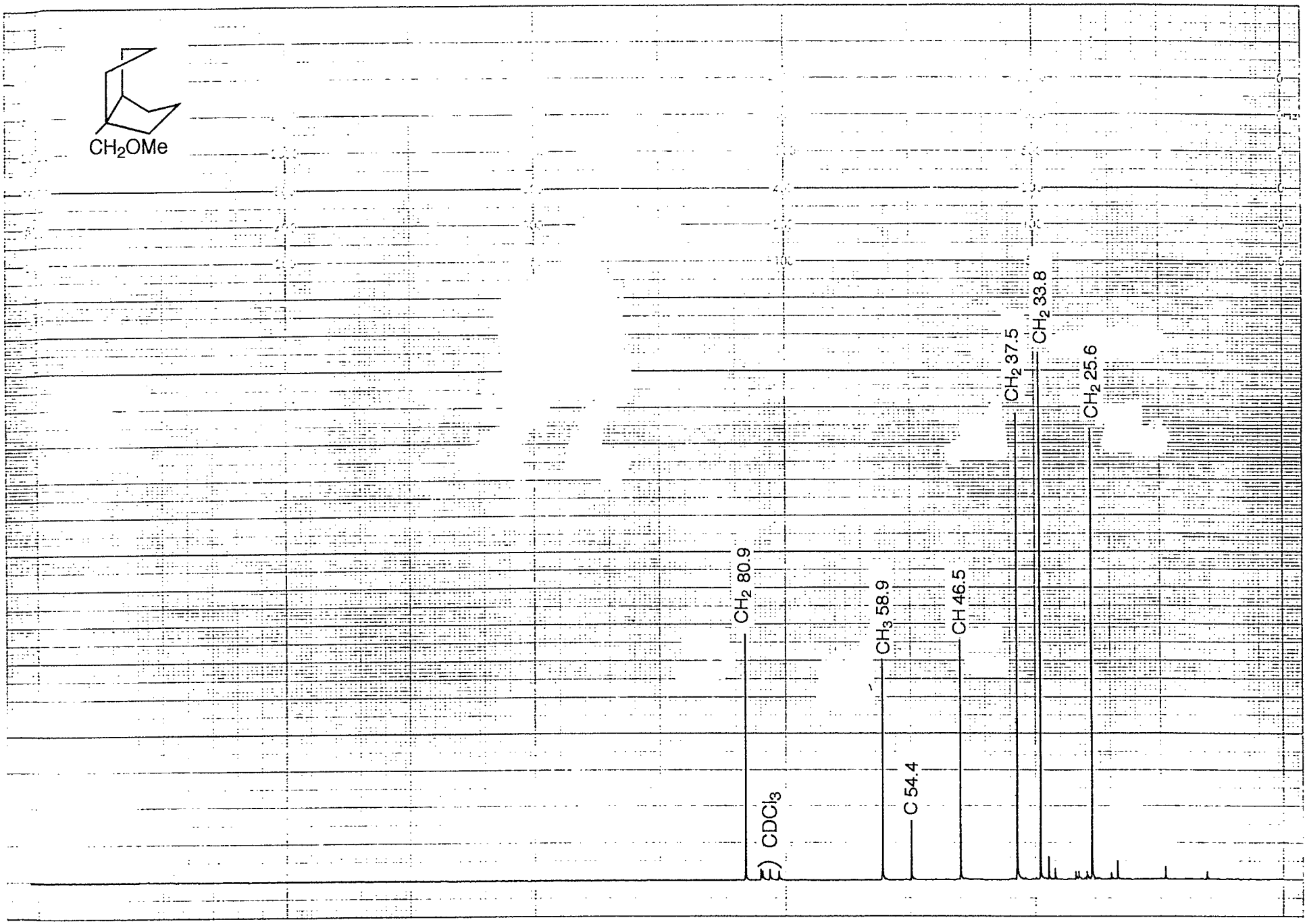
OBFIN	5200.0 Hz
IRSET	112.00 kHz
IRFIN	5800.0 Hz
IRATN	511
PW1	3.9 us
ACQTM	1.638 sec
PD	1.362 sec
SCANS	503
BF	1.00 Hz

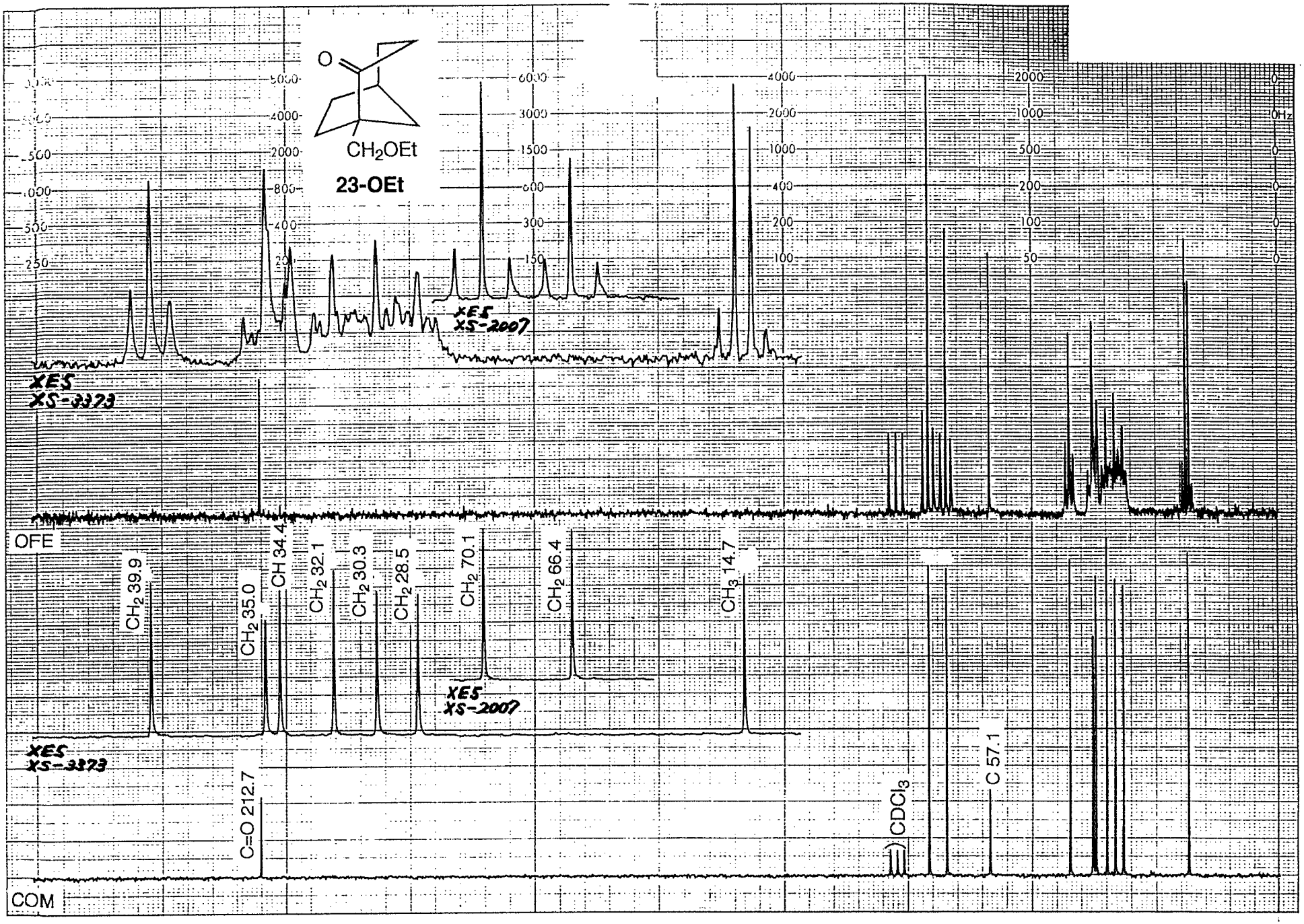
OPERATOR : _____

ORIGINAL

^{13}C NMR spectrum of 1-(methoxymethyl)bicyclo[3.3.0]octane (22.5 MHz, $CDCl_3$)



^{13}C NMR spectrum of **23-OEt** (22.5 MHz, $CDCl_3$)



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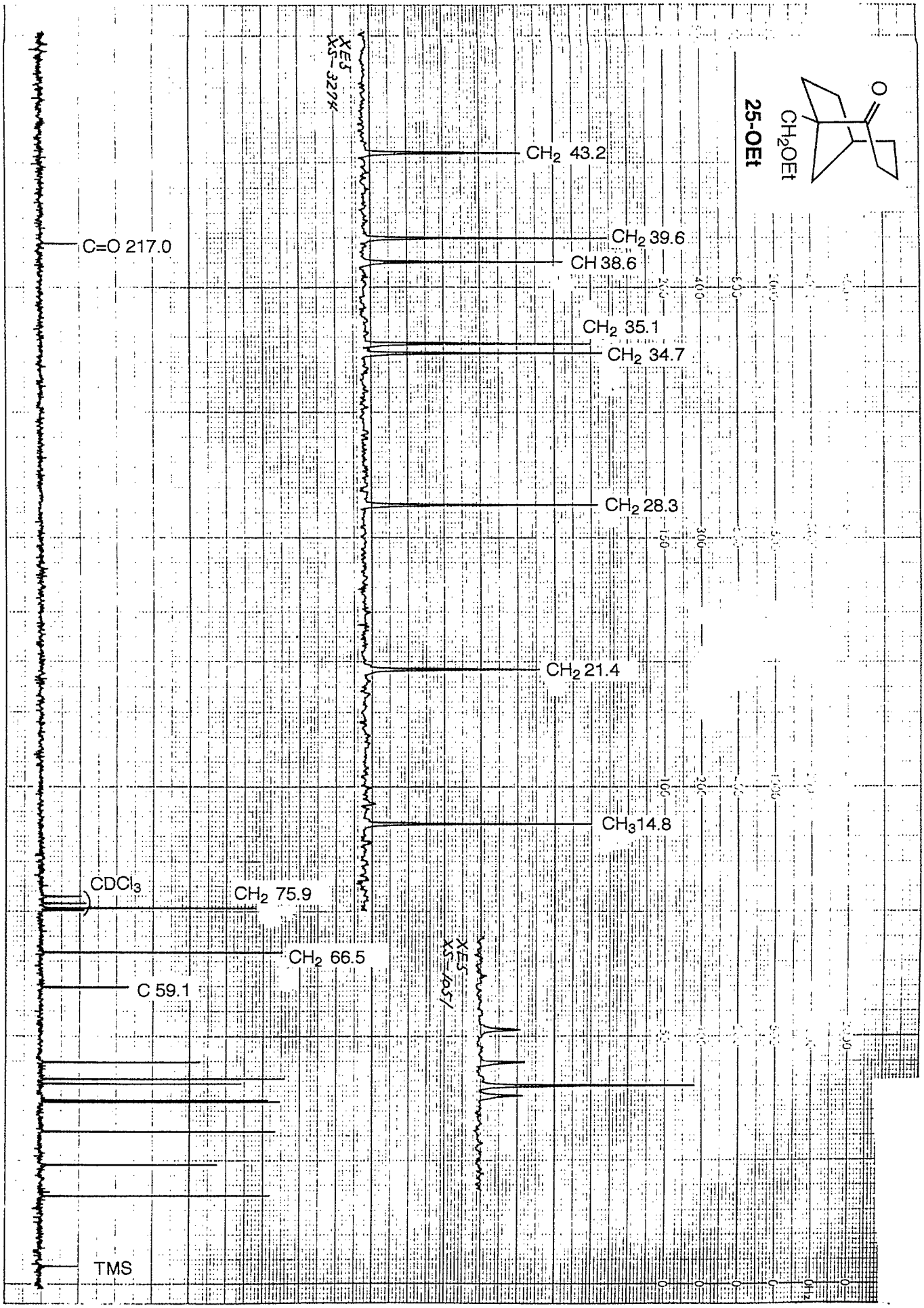
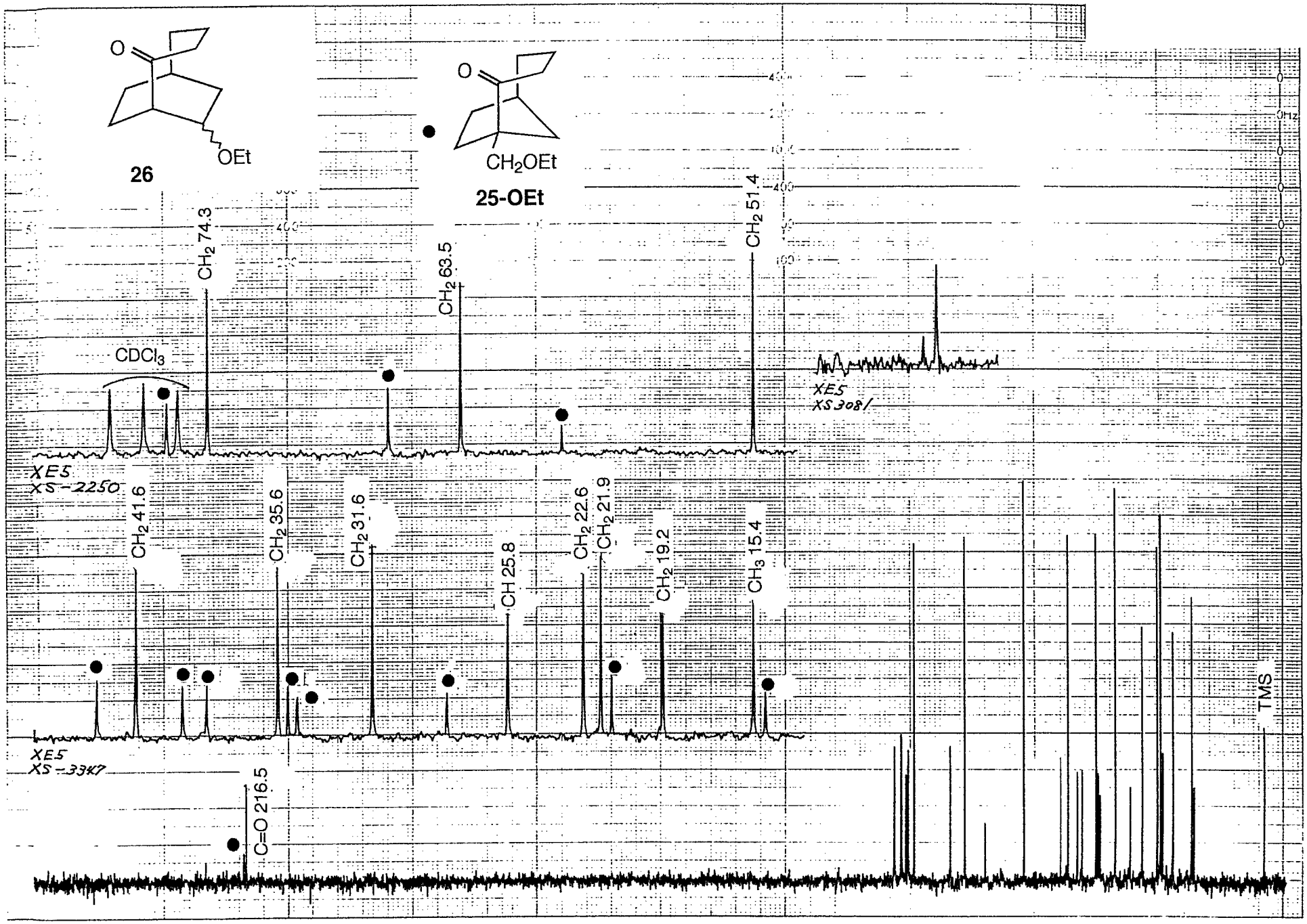
^{13}C NMR spectrum of **25-OEt** (22.5 MHz, $CDCl_3$)



^{13}C NMR spectrum of **26** (22.5 MHz, $CDCl_3$)



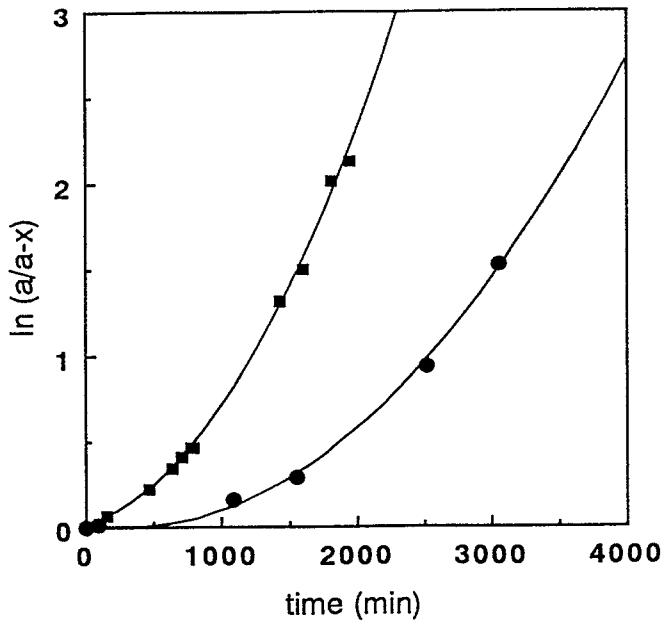


Figure 1. Plots of ln(a/a–x) against reaction time in the ethanolysis of **9a-OTf** (0.0197 mol L^{-1}) at 100 °C (solid circle) and **14a-OTf** (0.0197 mol L^{-1}) at 75 °C (solid square) in the presence of 0.0281 or 0.0250 mol L^{-1} 2,6-lutidine, respectively.

Table 1. PM3 Calculated Net Atomic Charges for Carbocations[a]

	2-oxo			2-methylene		
system	Cα	Cβ	O	Cα	Cβ	CH_2[b]
8,9	0.369	0.218	-0.141	0.503	-0.296	0.032
10	0.398	0.219	-0.164	0.463	-0.273	0.087
11	0.363	0.219	-0.159	0.394	-0.261	0.146
15	0.383	0.225	-0.181	0.497	-0.278	0.016

[a] The arrangement of atoms is Cα-Cβ=O or Cα-Cβ=CH_2 with Cα being the bridgehead cationic center. [b] Net atomic charge on carbon.