

Supplementary Information for

Potassium Phosphate-Ionic Liquid mediated selective *mono*-Michael addition

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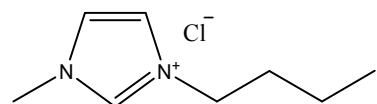
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Instrumental Details: All NMRs were recorded on Bruker 300 AVANCE III with CDCl₃ as solvent and TMS as internal standard. GC analysis was carried out on Shimadzu GC solution-2010 coupled with MS. ESI-MS analysis was carried out on Bruker microTOF-Q.

Characterization of ionic liquid [bmIm]Cl:

¹H NMR, ESI-MS (+ve mode):

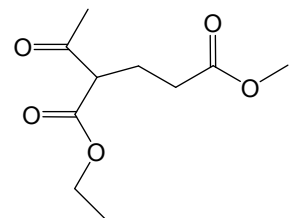
A)



¹H NMR (300 MHz, CDCl₃) δ 0.93 (t, 3H), 1.31 (m, 2H, CH₂CH₃), 1.84 (m, 2H), 2.30 (t, 2H), 4.09 (s, 1H, CH₃), 4.30 (t, 2H, CH₂CH₂), 7.37 (d, 1H, ArH), 7.50 (d, 1H, Ar H), 10.62 (s, 1H, ArH); **ESI-MS (+ve mode)** 139.1.

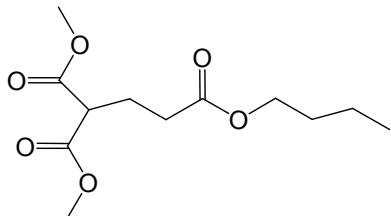
¹H NMR and ¹³CNMR spectra of products of Michael addition reaction:

B)



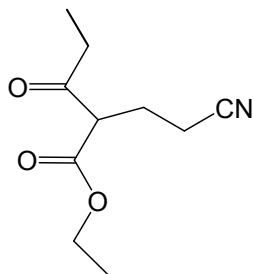
¹H NMR (300 MHz, CDCl₃) δ 1.20 (t, 3H), 2.08 (s, 3H, COCH₃), 2.09-2.12 (m, 2H), 2.30 (t, 2H), 3.49 (t, 1H, CH), 3.59 (s, 3H, OCH₃), 4.12 (q, 2H); **¹³C NMR (75 MHz, CDCl₃)** δ 13.60, 22.80, 26.47, 29.06, 51.62, 58.19, 61.68, 171.36, 172.86, 204.13 ppm; **MS (EI) m/z** - 216(unstable), 185, 142, 114, 100, 85; **Anal Calc:** C 55.55, H 7.46; **Found:** C 55.32, H 7.38.

C)



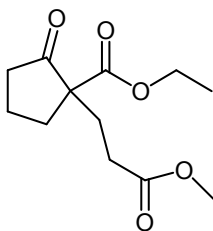
¹H NMR (300 MHz, CDCl₃) δ 0.94 (t, 3H), 1.31-1.43 (m, 2H), 1.54-1.65 (m, 2H), 2.22 (t, 2H), 2.35-2.42 (m, 2H), 3.48 (t, 1H, CH), 3.75 (s, 6H, 2OCH₃); **¹³C NMR (75 MHz, CDCl₃)** δ 13.64, 19.06, 23.80, 30.57, 31.42, 50.44, 52.49, 64.47, 166.89, 169.32, 172.39; **MS (EI) m/z** 310; **Anal Calc:** C 55.37, H 7.74; **Found:** C 55.22, H 7.58.

D)



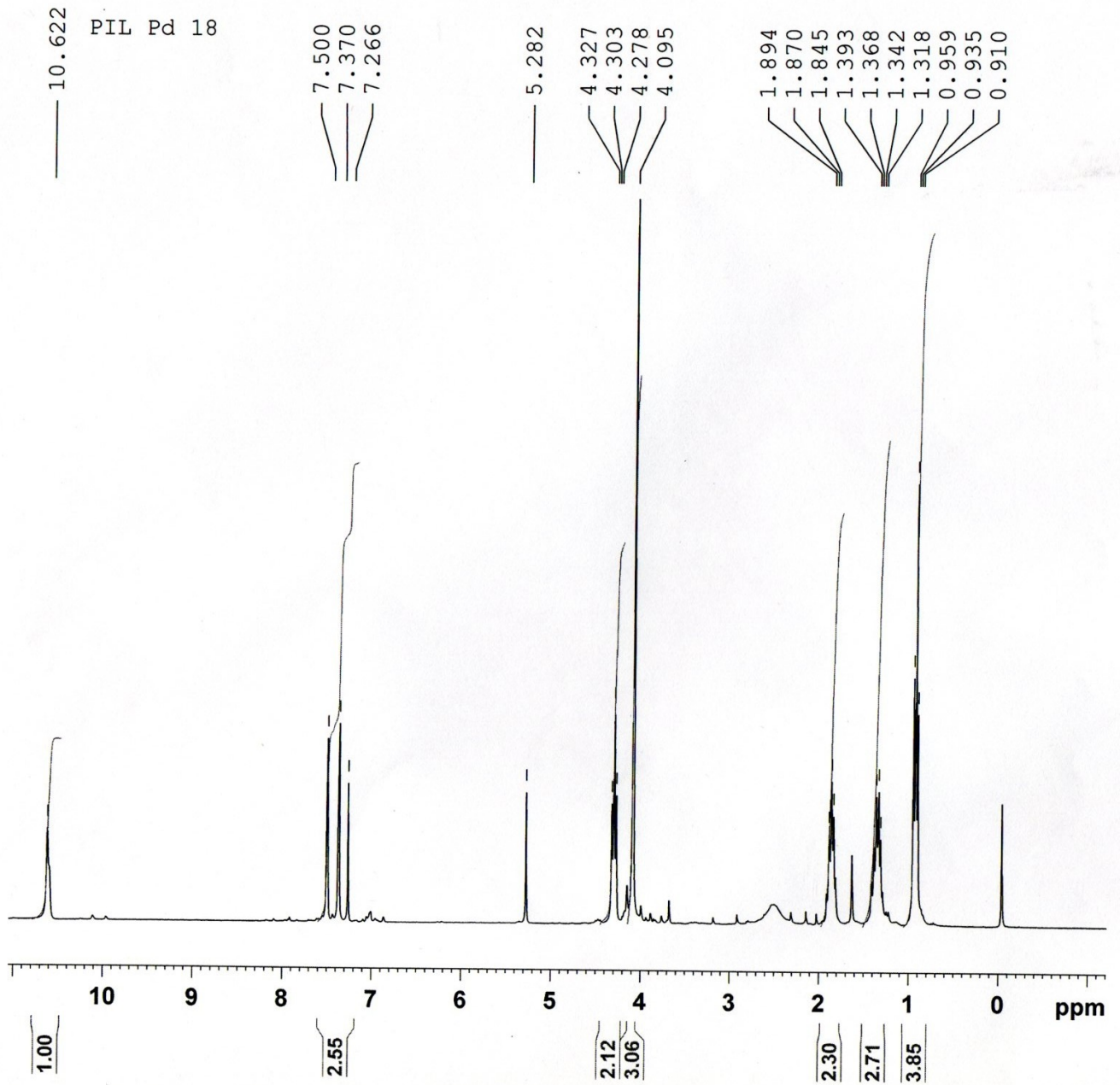
¹H NMR (300 MHz, CDCl₃) δ 1.05 (t, 3H, CH₃ CH₂), 1.24 (t, 3H, CH₃ CH₂O), 2.11-2.21 (m, 2H, CH₂CH), 2.41 (t, 2H, CH₂CN), 2.53 (q, 2H, CH₂CH₃), 3.66 (t, 1H, CH), 4.14 (q, 2H, OCH₂); **¹³C NMR (75 MHz, CDCl₃)** δ 7.56, 14.06, 15.07, 23.42, 36.27, 56.28, 61.31, 118.69, 168.45, 204.32; **MS (EI) m/z** 197, 154, 108; **Anal Calc:** C 60.90, H 7.67; **Found:** C 60.61, H 7.45.

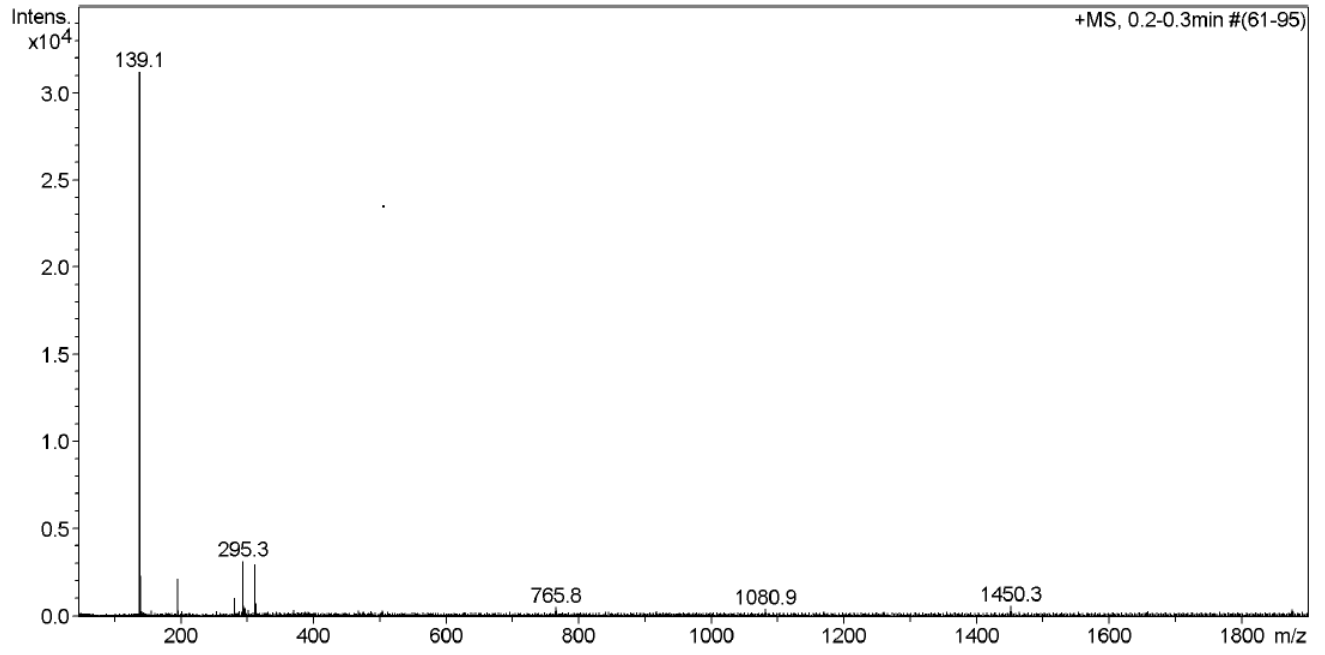
E)



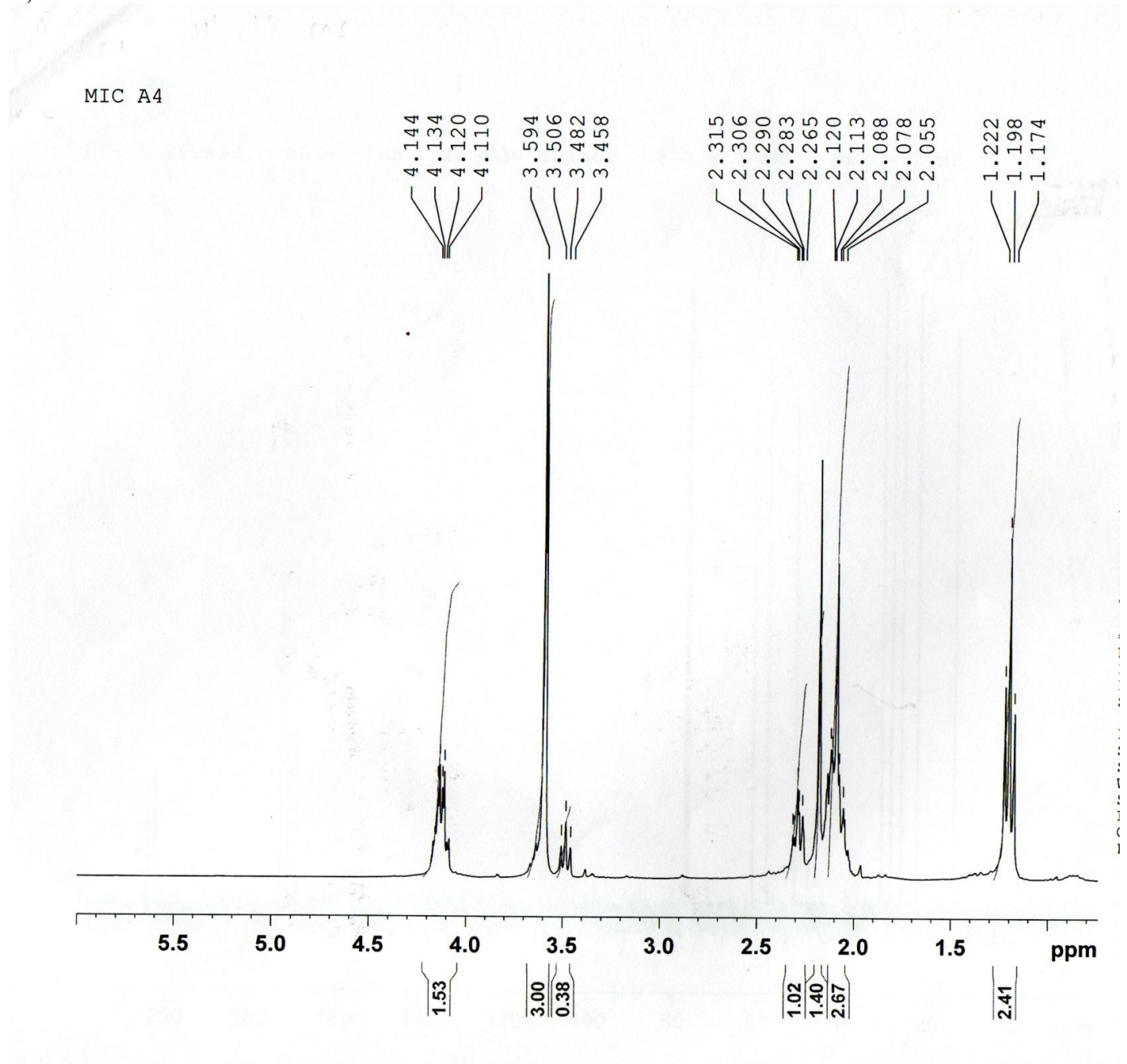
¹H NMR (300 MHz, CDCl₃) δ 1.21 (t, 3H, CH₃), 1.82-2.00 (m, 4H), 2.12-2.36 (m, 4H), 2.41-2.49 (m, 2H), 3.63 (s, 3H, OCH₃), 4.09 (q, 2H, CH₂CH₃); **¹³C NMR (75 MHz, CDCl₃)** δ 14.01, 19.51, 28.35, 29.54, 33.61, 37.80, 51.61, 59.17, 61.45, 170.90, 173.36, 214.30; **MS (EI) m/z** 242 ; **Anal Calc:** C 59.49, H 7.49; **Found:** C 59.22, H 7.38.

A)





B)



¹³C NMR

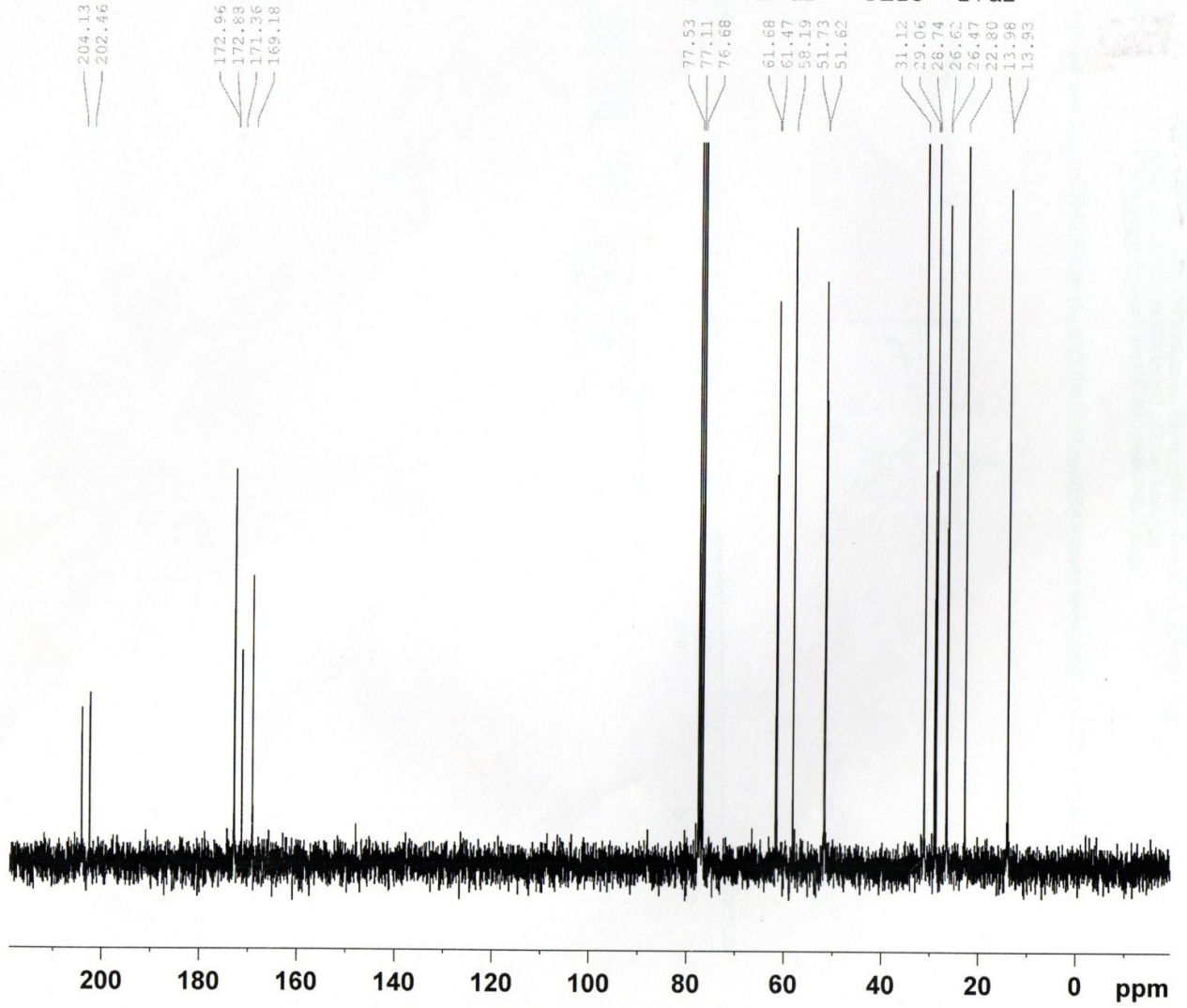
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PL1= -1dB

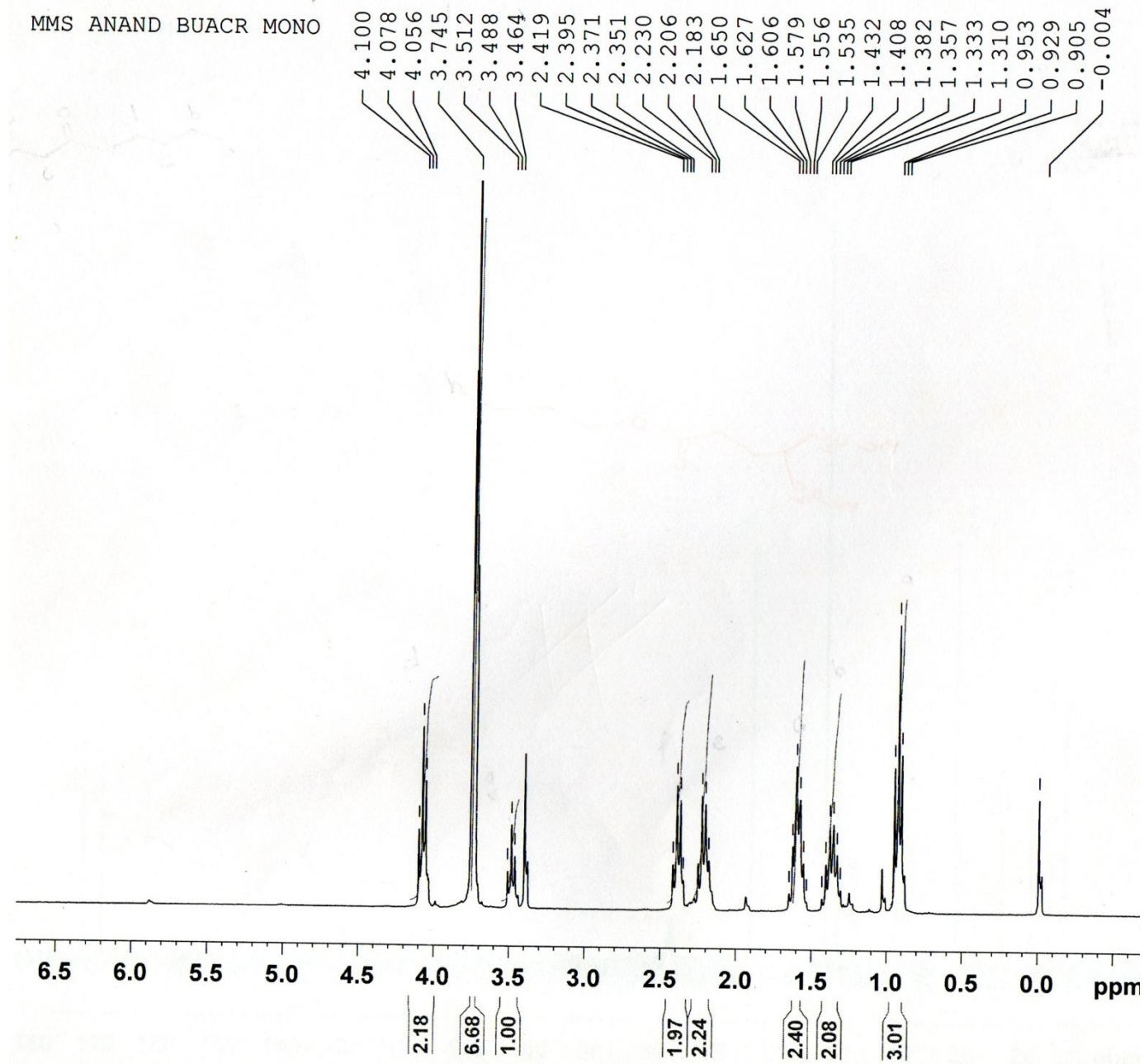
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PL12= 17dB

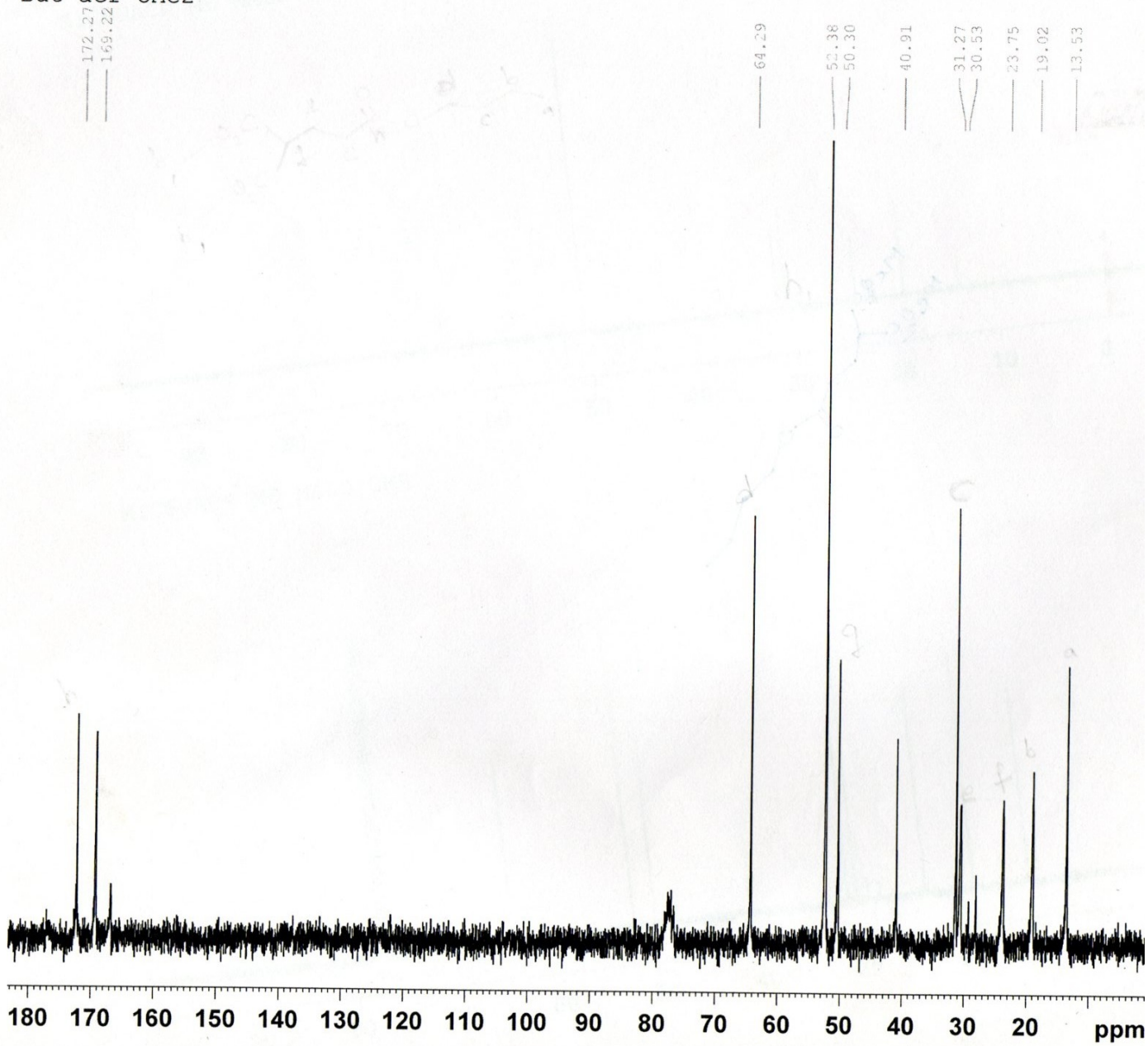
PL13= 17dB



C)

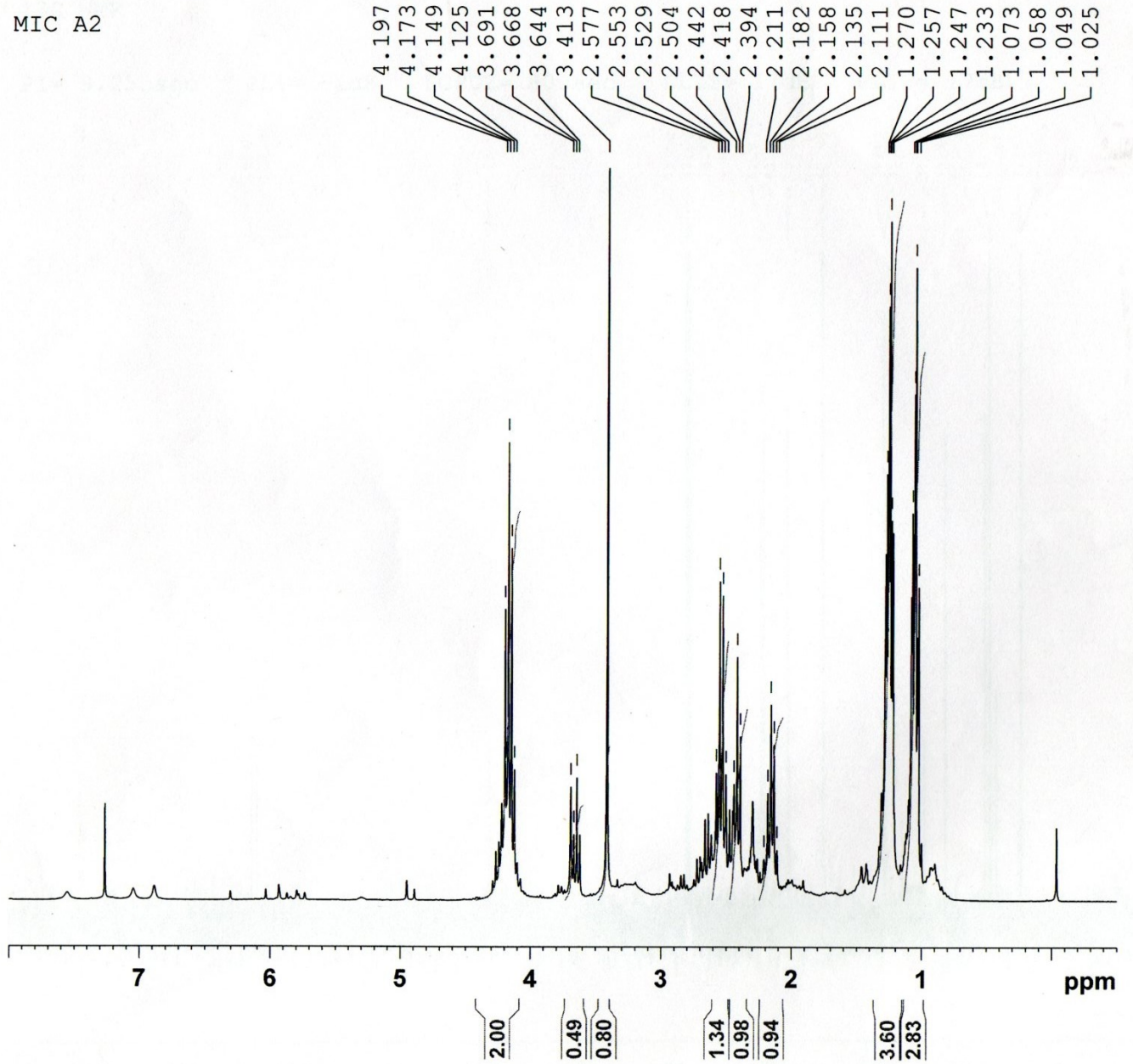


But acr OMe2



D)

MIC A2



13C NMR

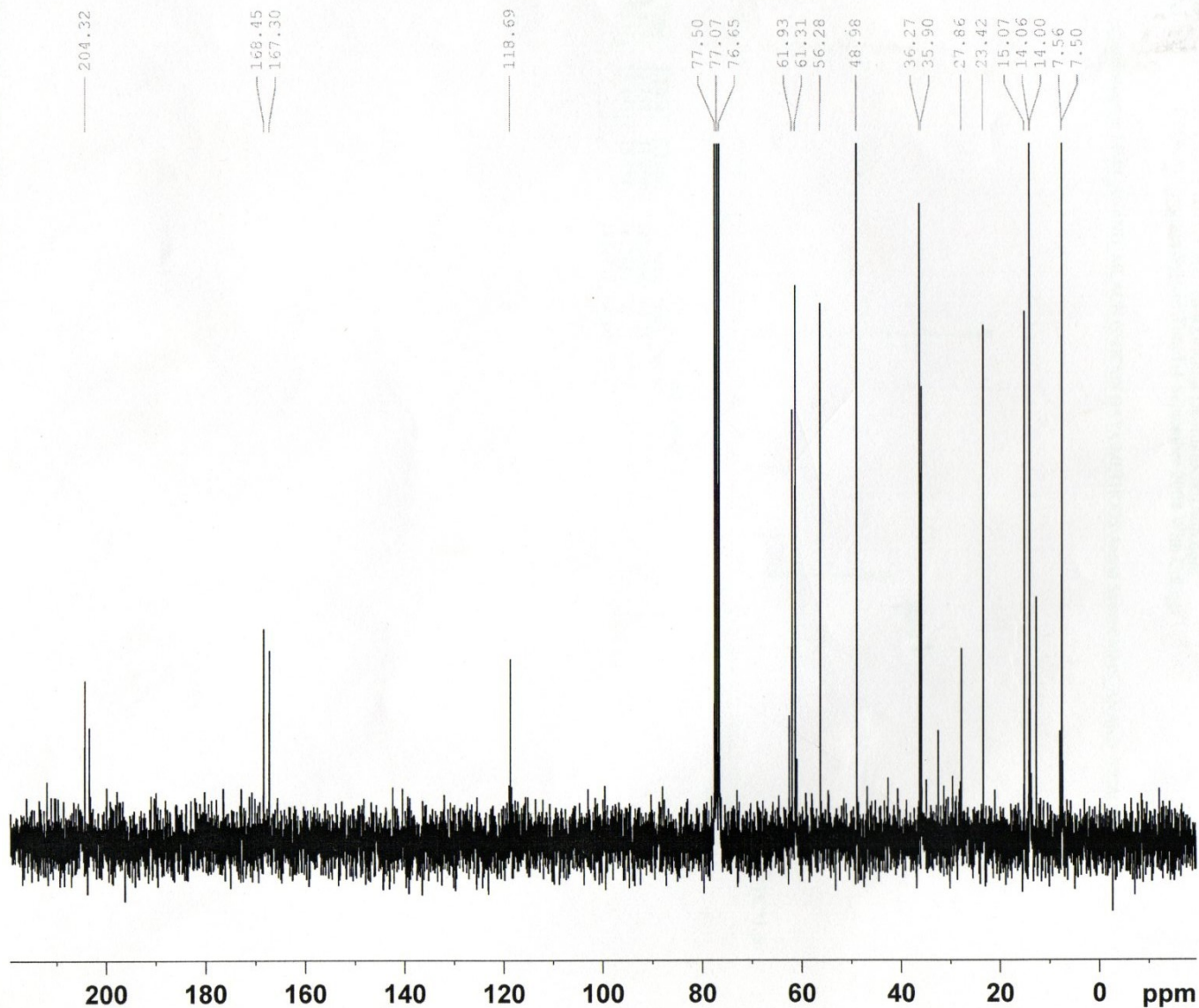
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PL1= -1dB

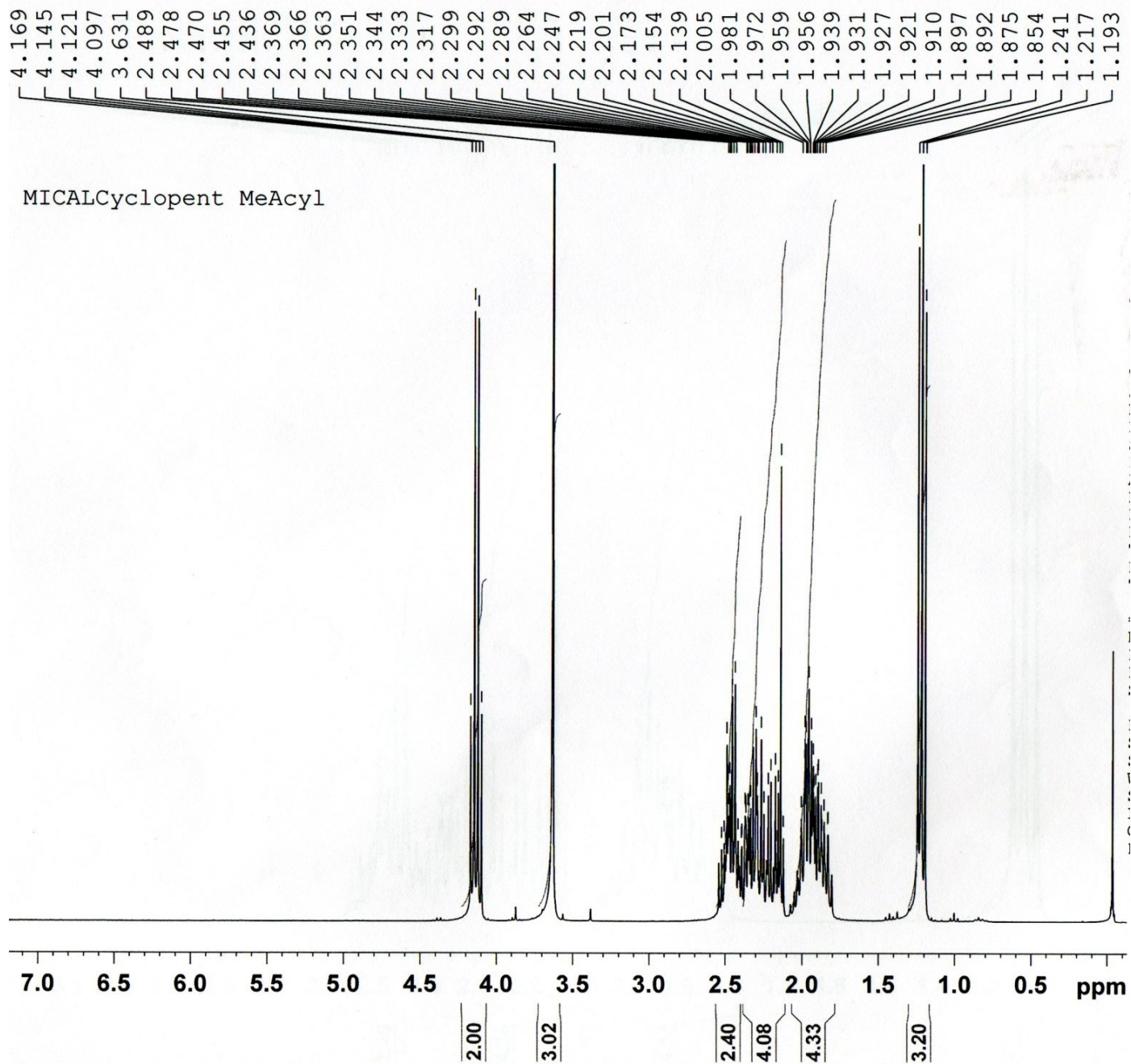
PCPD2= 80usec

PL12= 17dB

PL13= 17dB



E)



MICALCyclopent MeAcyl

