

Supplementary Material

Synthesis of ethynylated biaryls and asymmetric diethynylated benzene *via* sequential Sonogashira and Suzuki couplings in water

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^1H NMR of compound 4

MohamadAbdelmoaty-K-106-CDCL3-H

Pulse Sequence: s2pu1

Solvent: CDCl3

Temp. 30.0 C / 303.1 K

Mercury-300BB "NMR300"

Relax. delay 1.000 sec

Pulse 74.1 degrees

Acq. time 4.007 sec

Width 9000.0 Hz

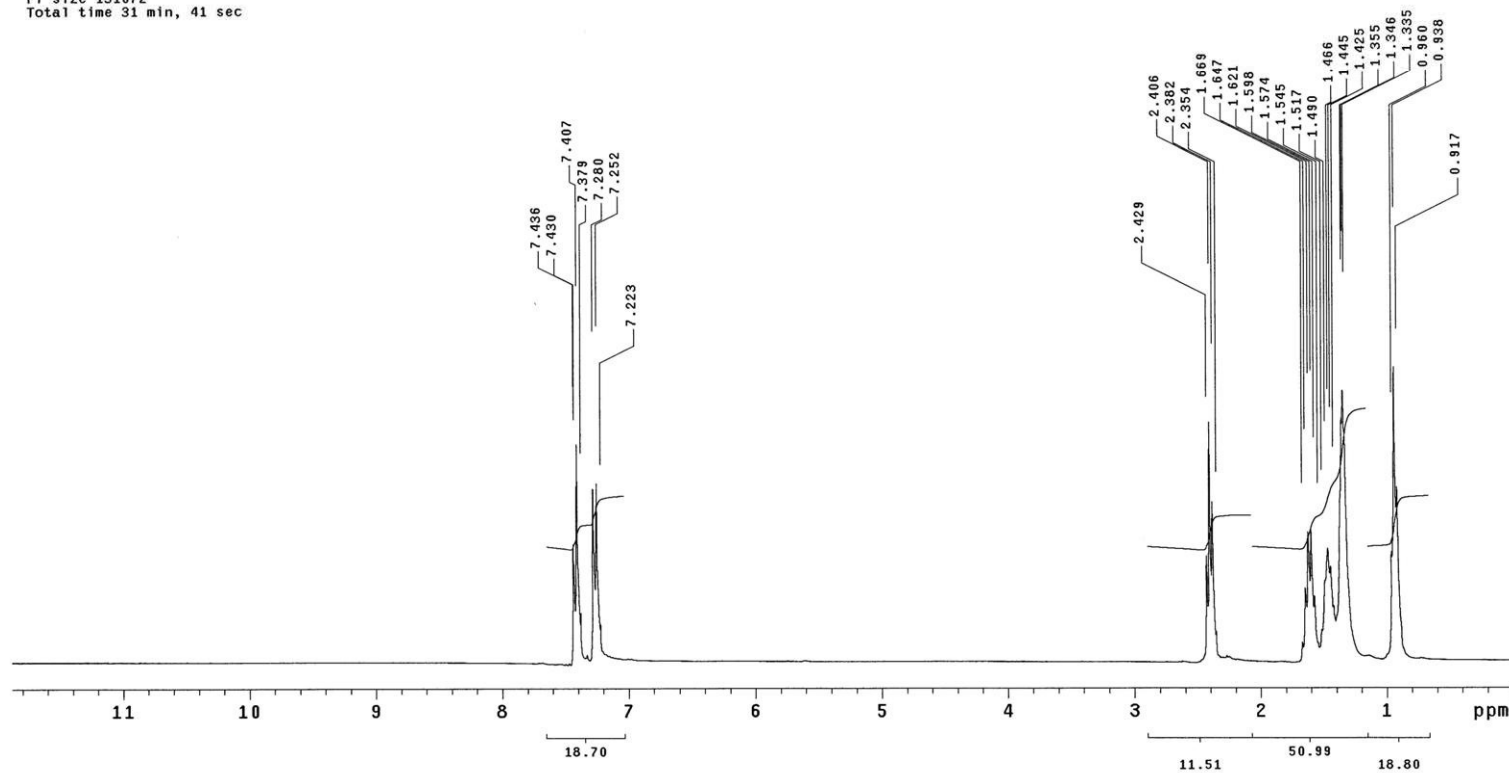
13 repetitions

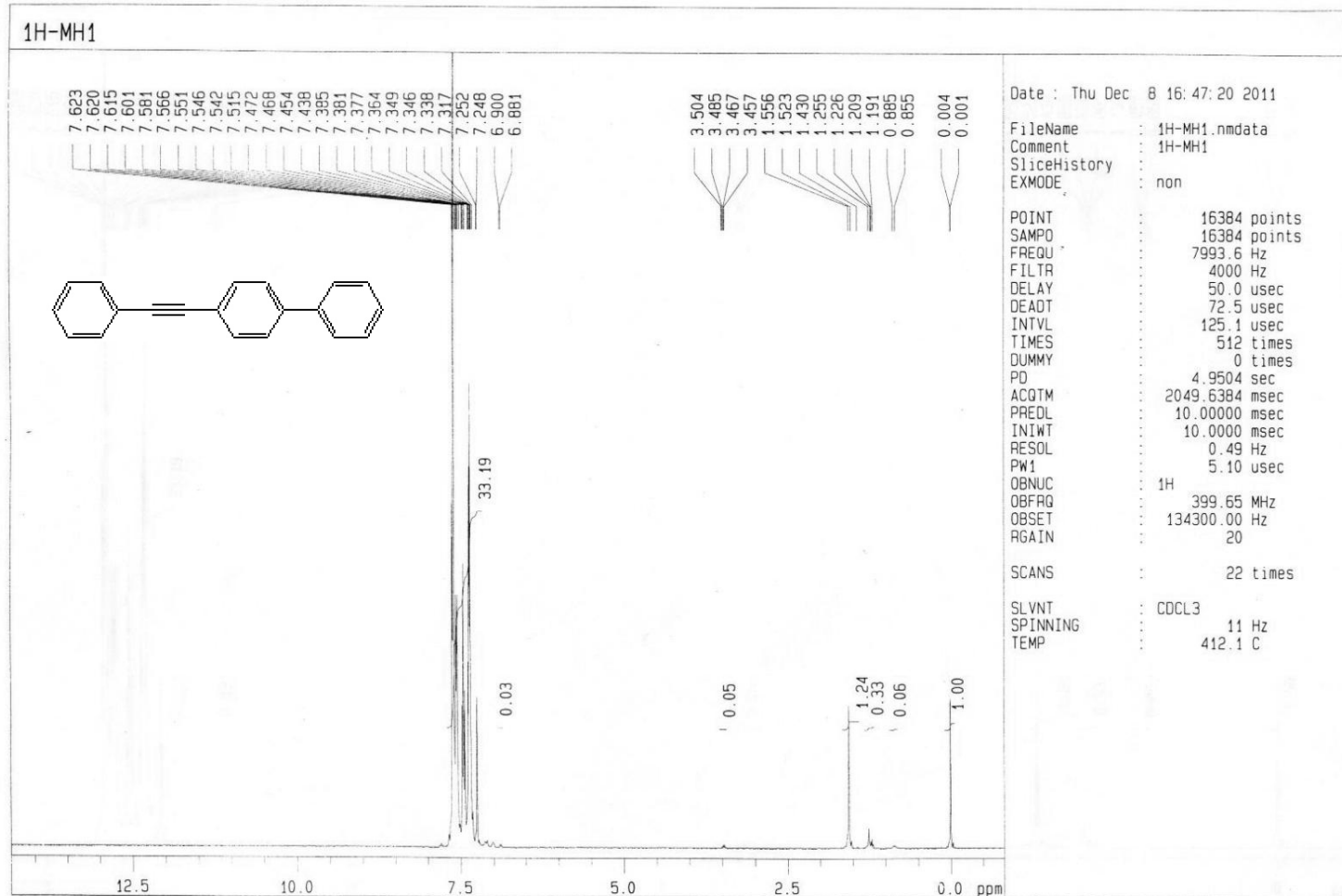
OBSERVE H1, 300.0673626 MHz

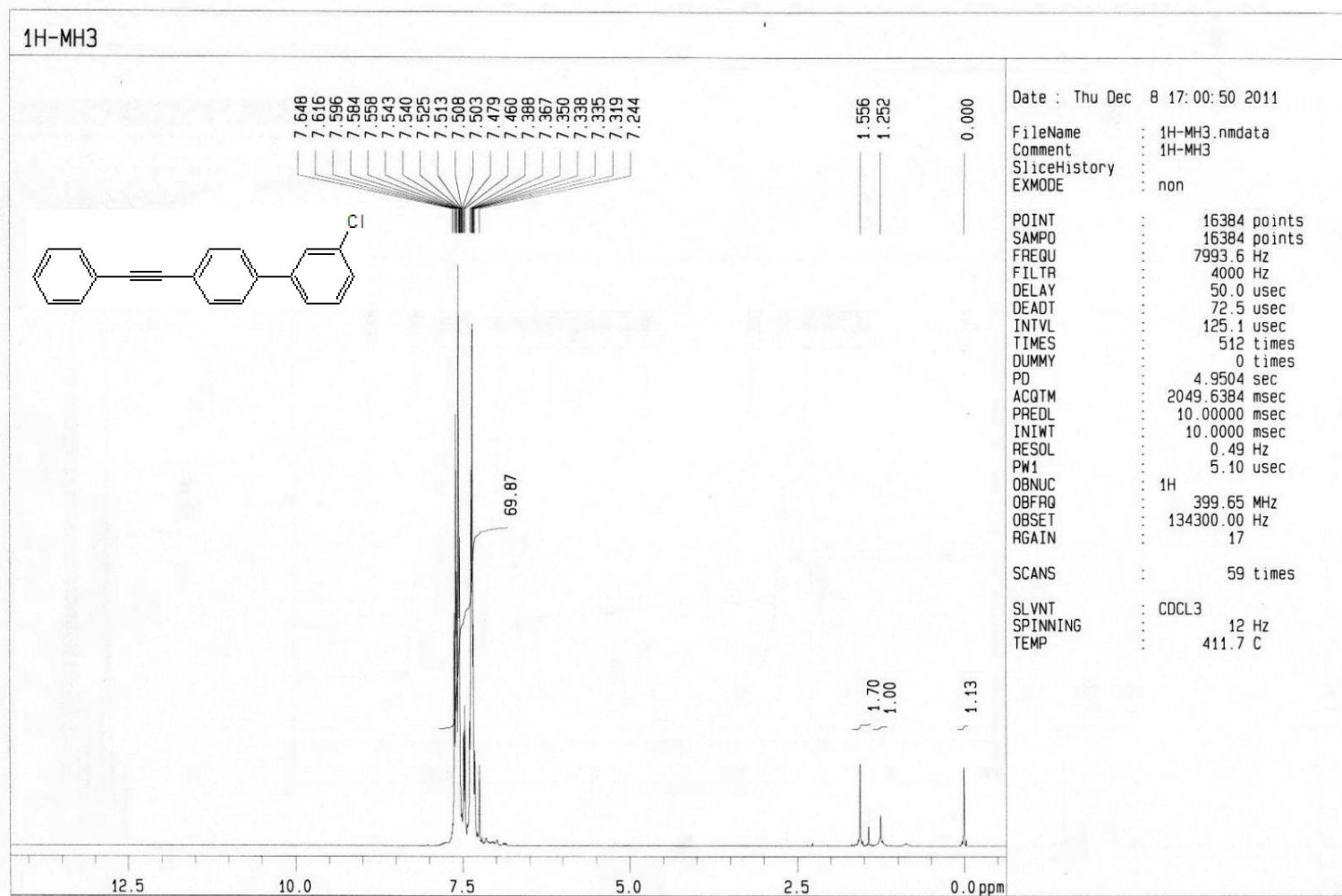
DATA PROCESSING

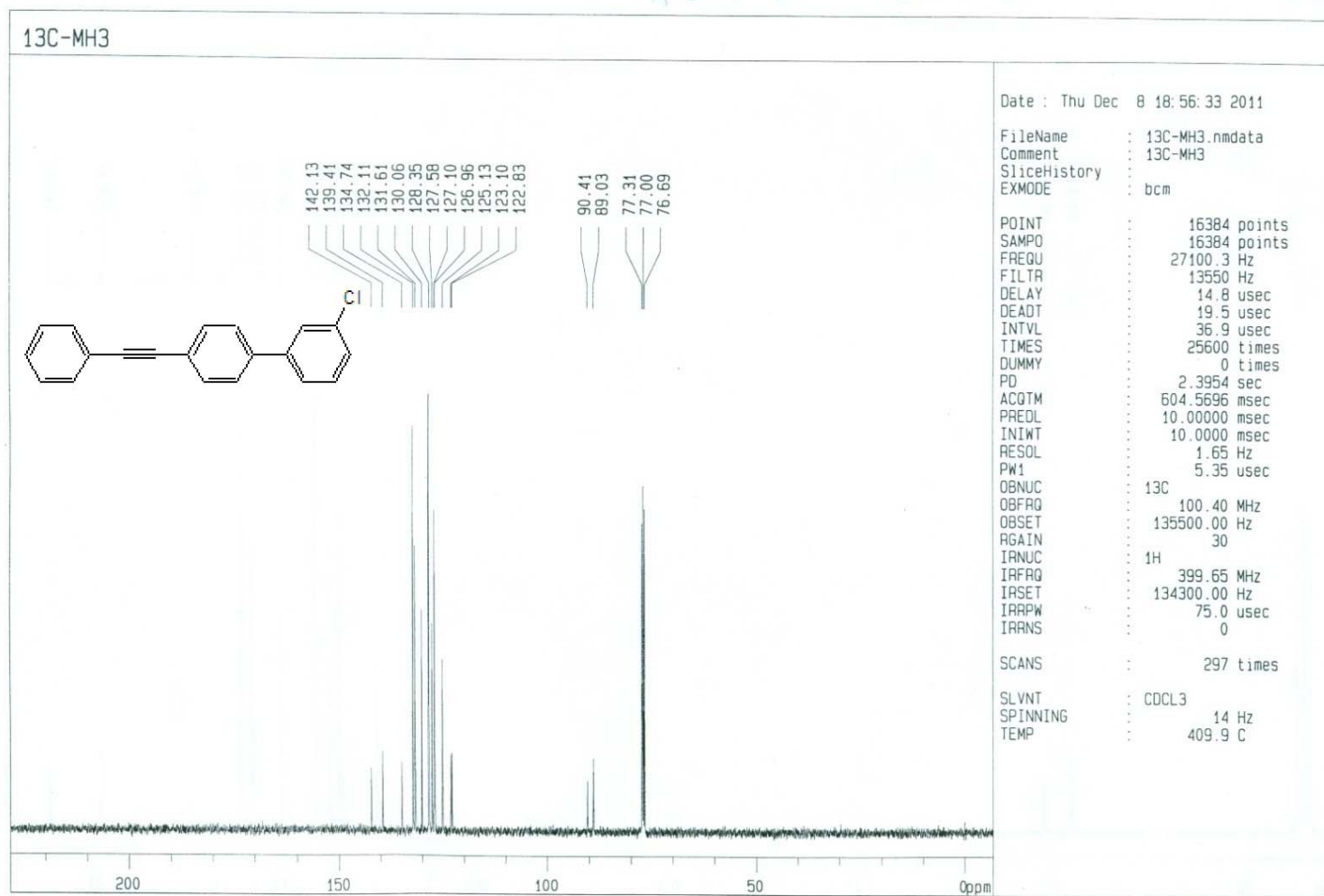
FT size 131072

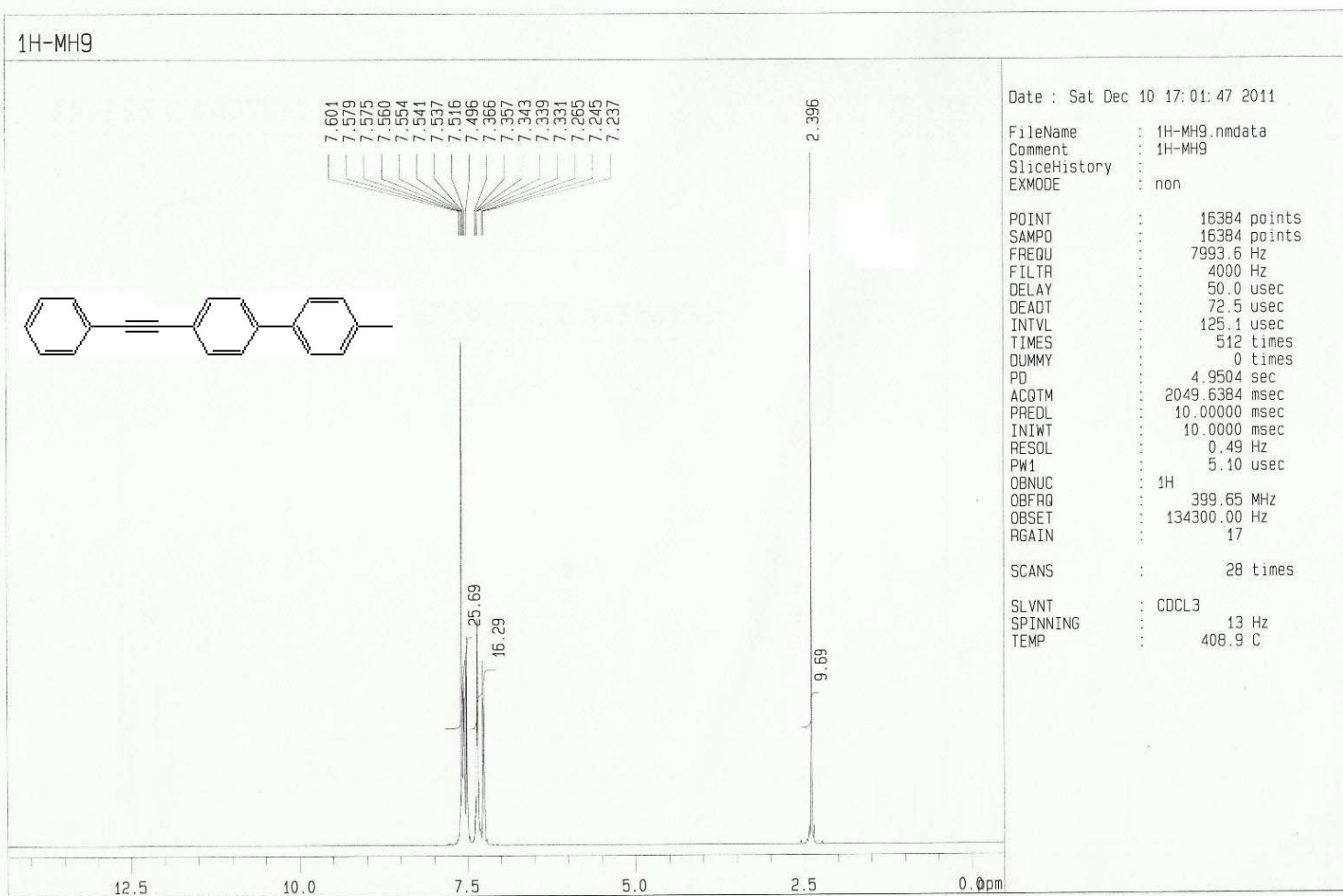
Total time 31 min, 41 sec

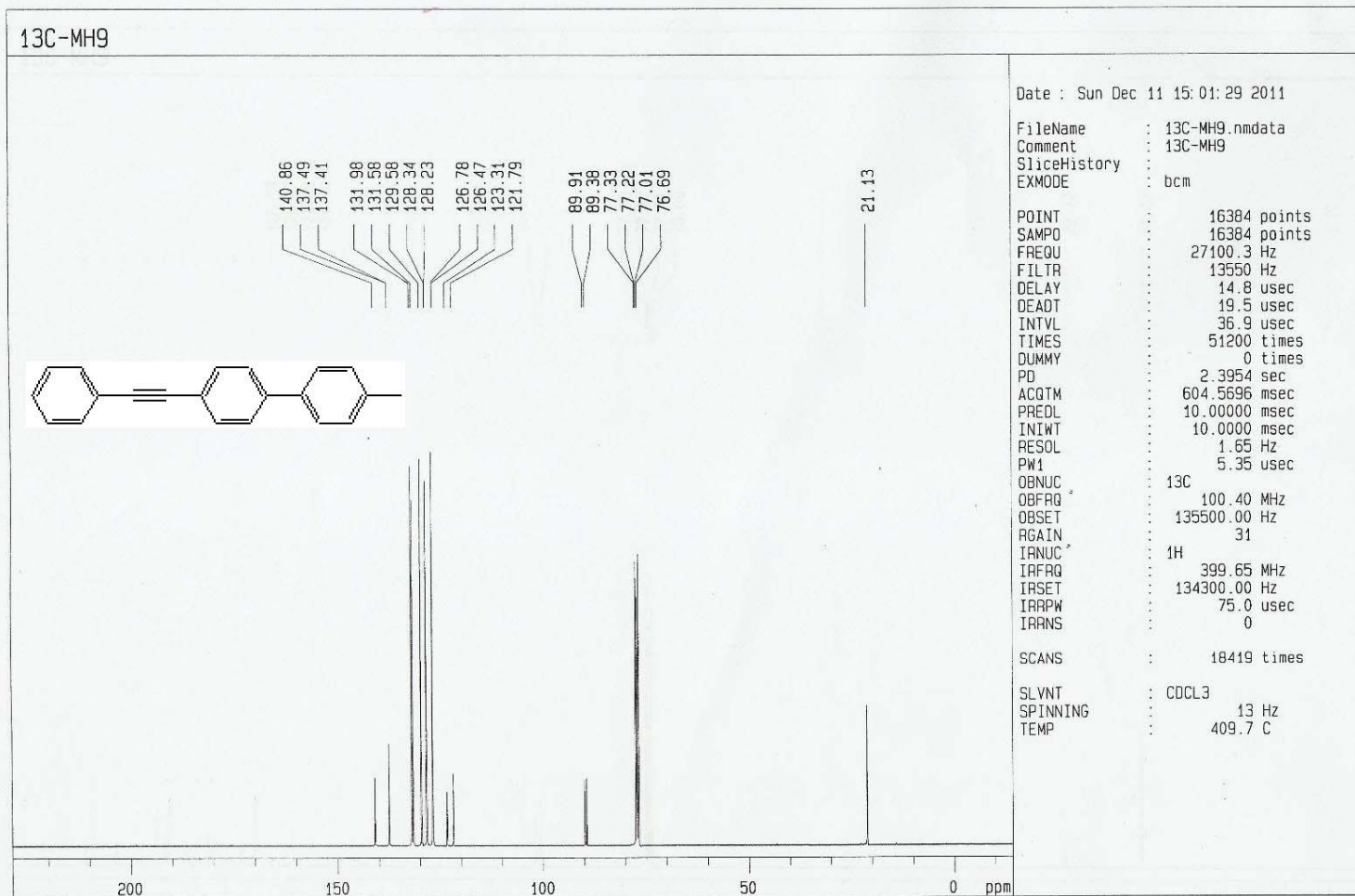


¹H NMR of compound 5

¹H NMR of compound 7

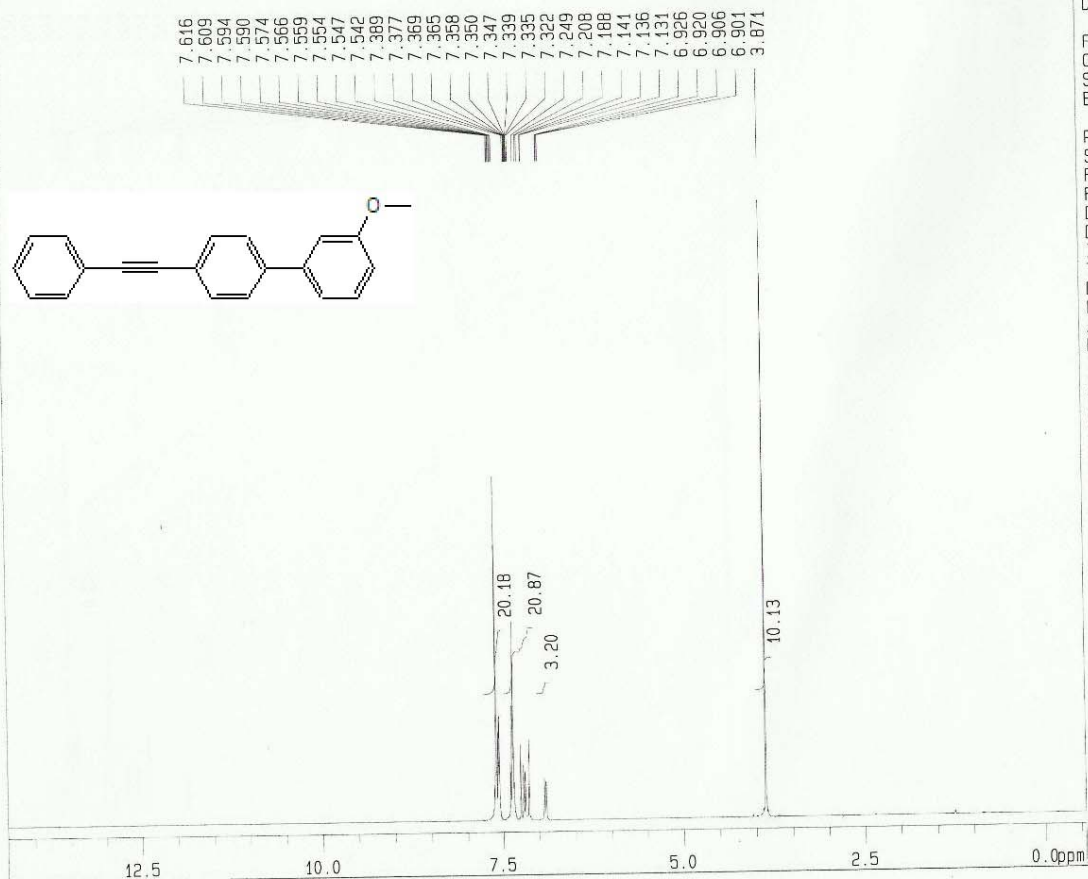
¹H NMR of compound 8

¹³C NMR of compound 8

¹³C NMR of compound 9

¹³C NMR of compound 9

1H-MH13



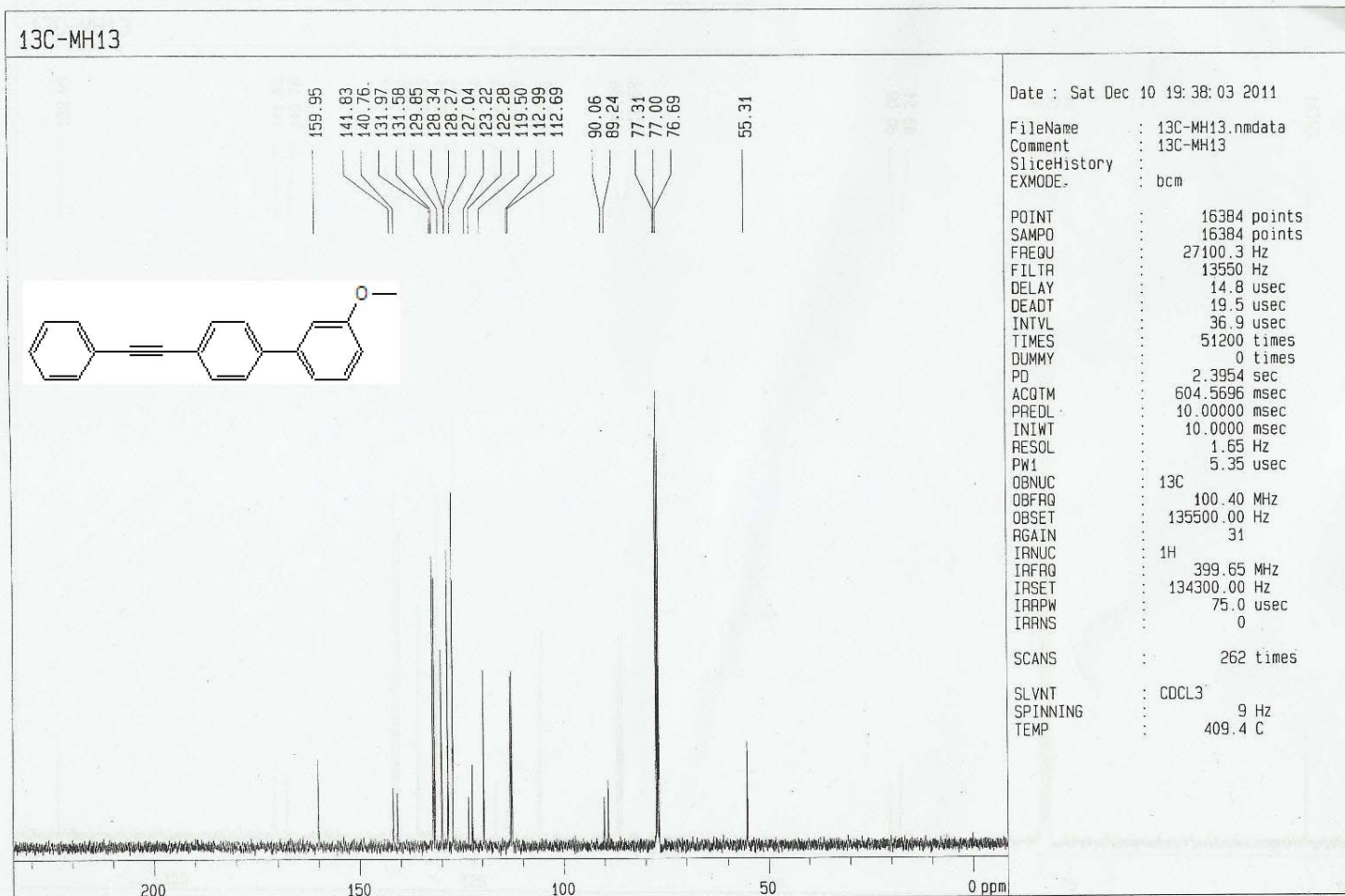
Date : Sat Dec 10 17:45:42 2011

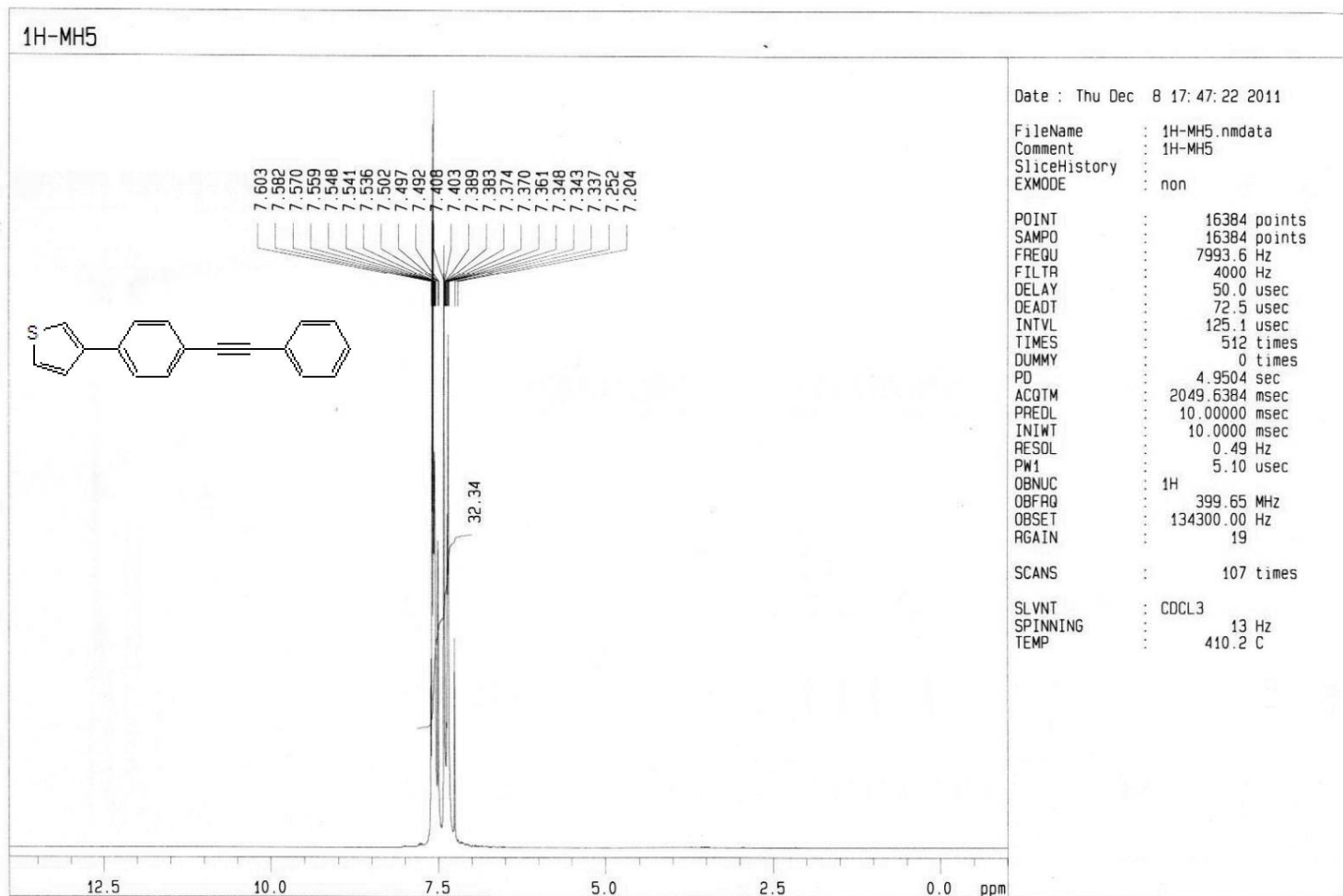
FileName : 1H-MH13.nmdata
Comment : 1H-MH13
SliceHistory :
EXMODE : non

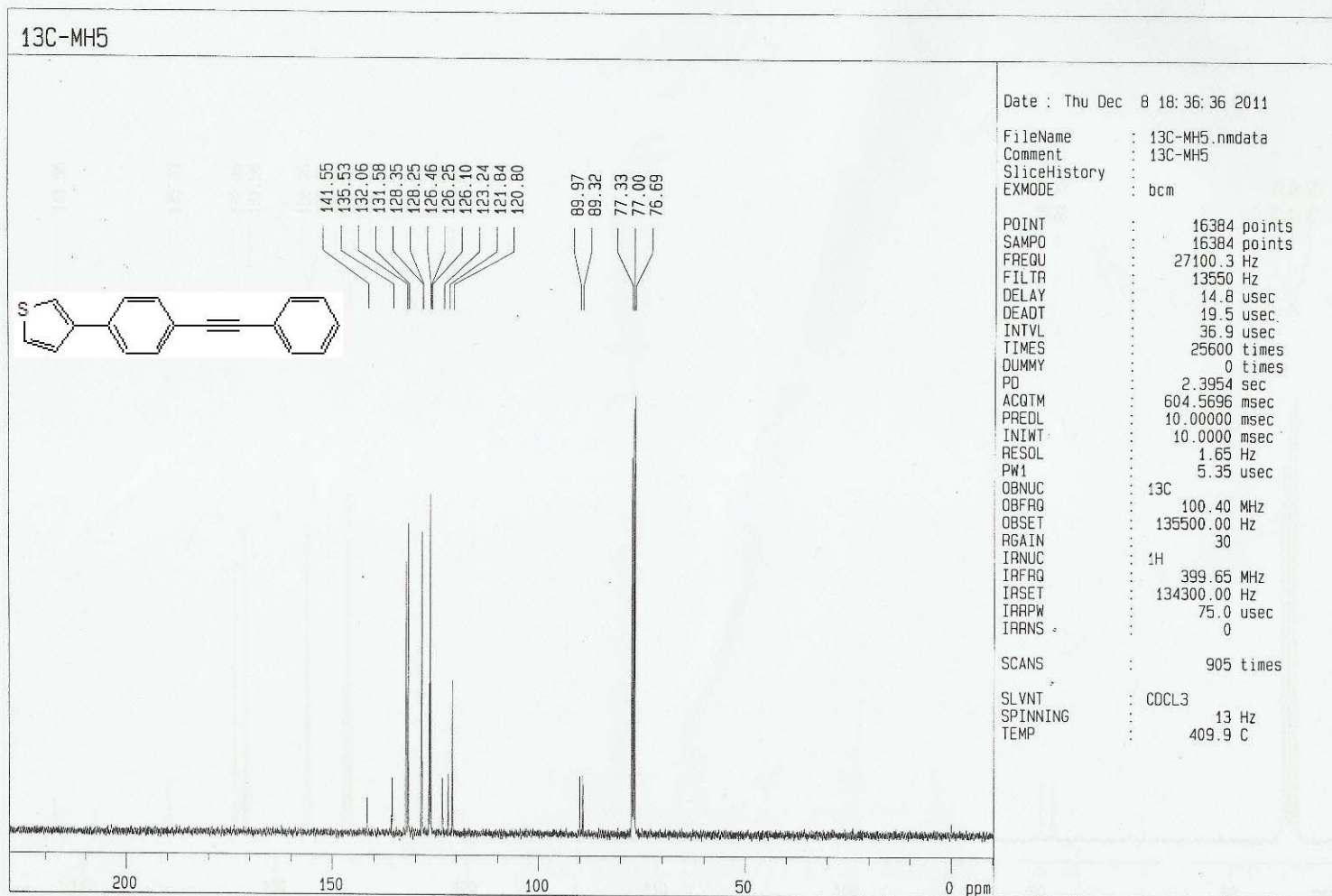
POINT : 16384 points
SAMPO : 16384 points
FREQU : 7993.6 Hz
FILTR : 4000 Hz
DELAY : 50.0 usec
DEADT : 72.5 usec
INTVL : 125.1 usec
TIMES : 512 times
DUMMY : 0 times
PD : 4.9504 sec
ACQTM : 2049.6384 msec
PREDL : 10.00000 msec
INIWT : 10.0000 msec
RESOL : 0.49 Hz
PW1 : 5.10 usec
OBNUC : 1H
OBFRQ : 399.65 MHz
OBSET : 134300.00 Hz
RGAIN : 17

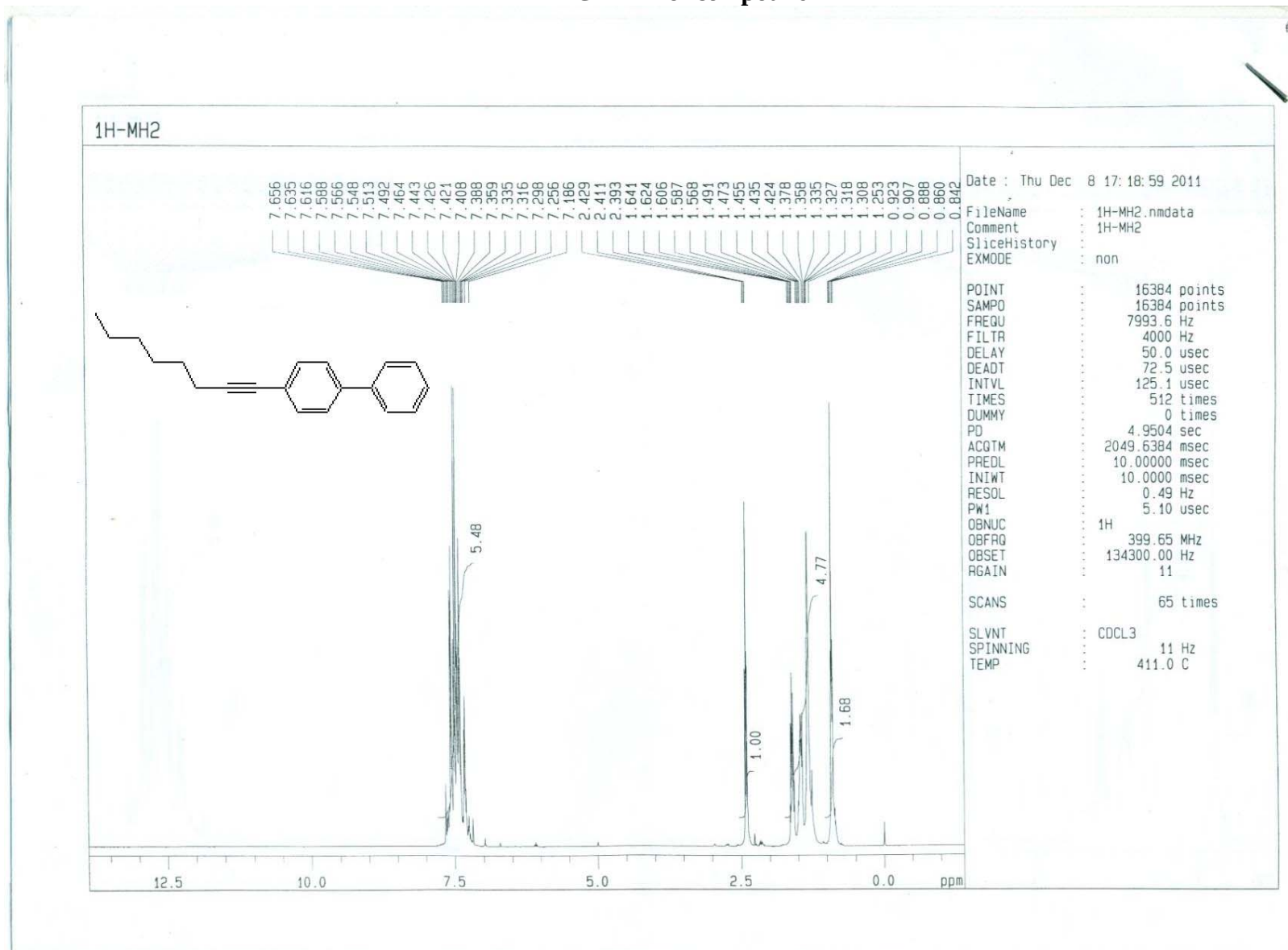
SCANS : 9 times

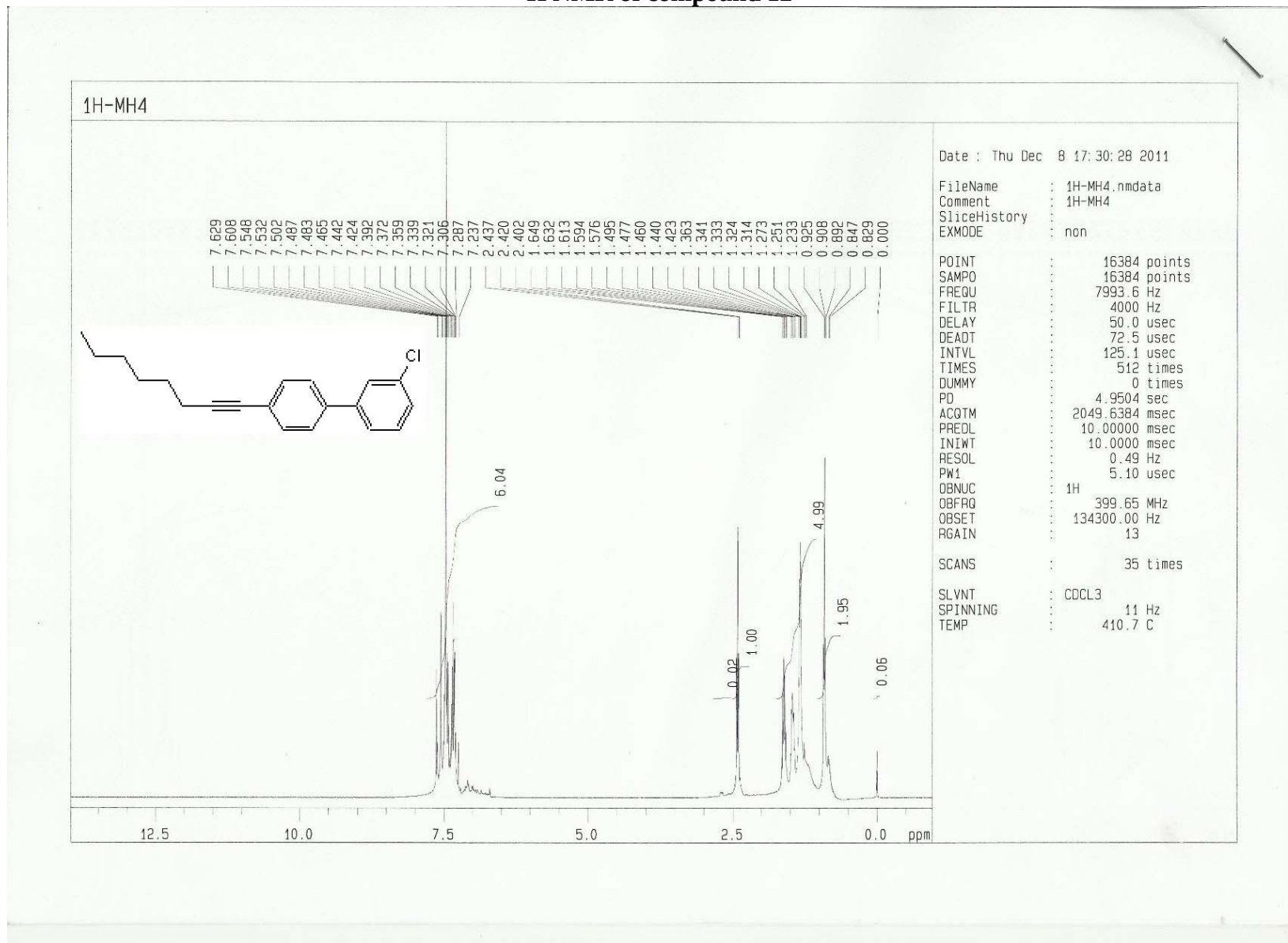
SLVNT : CDCL3
SPINNING : 12 Hz
TEMP : 408.9 C

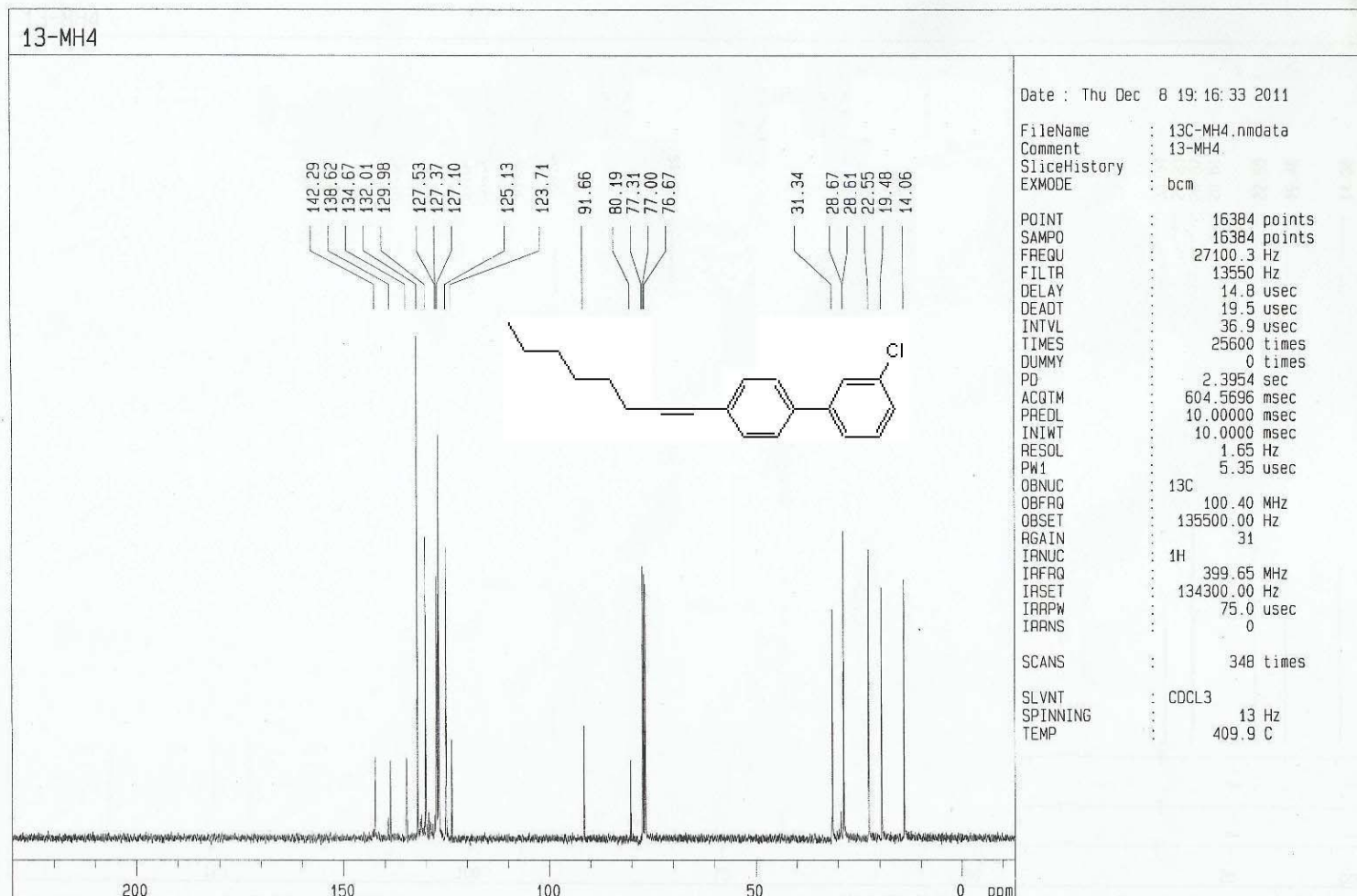
¹H NMR of compound 10

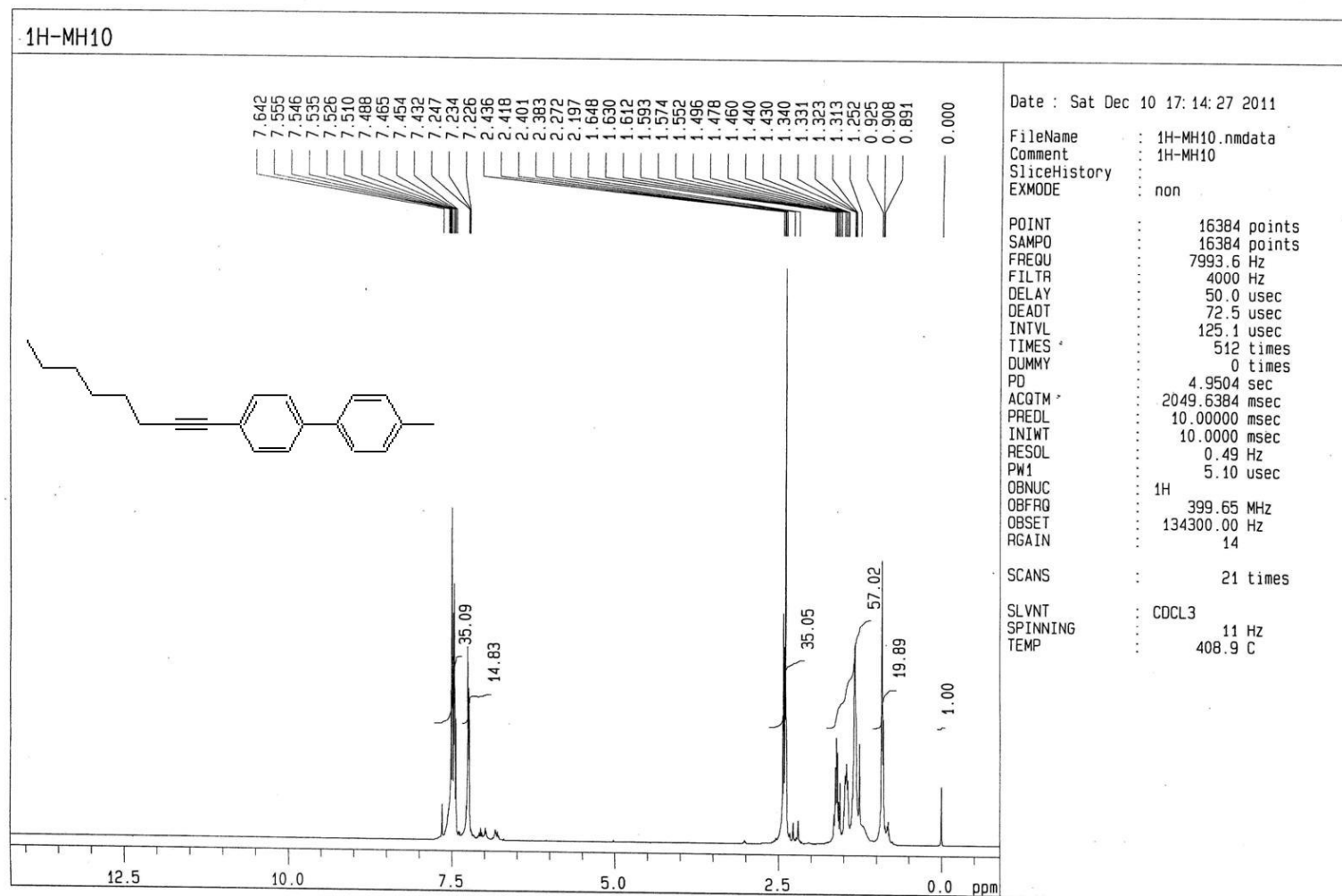
¹³C NMR of compound 10

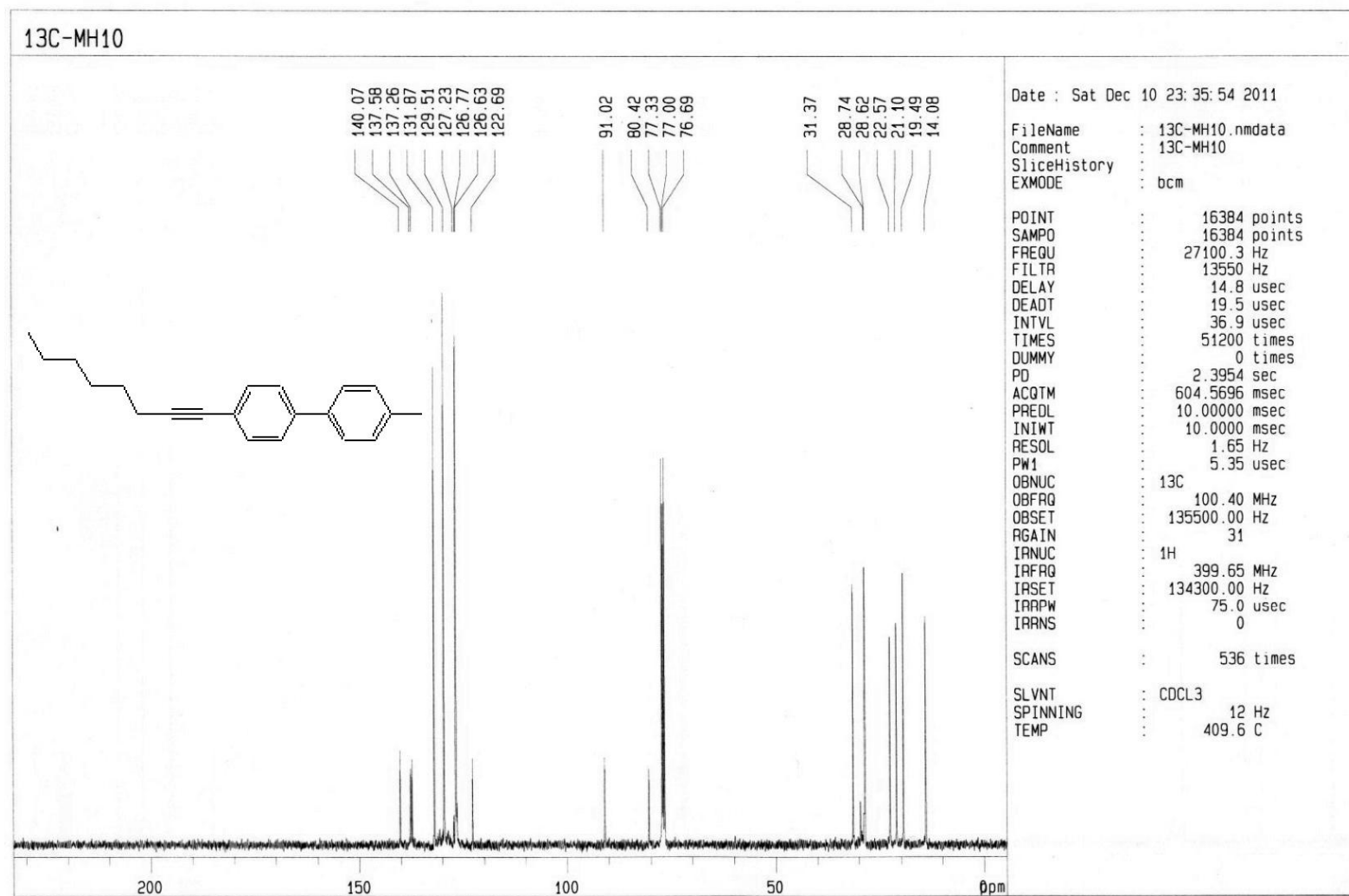
¹H NMR of compound 11

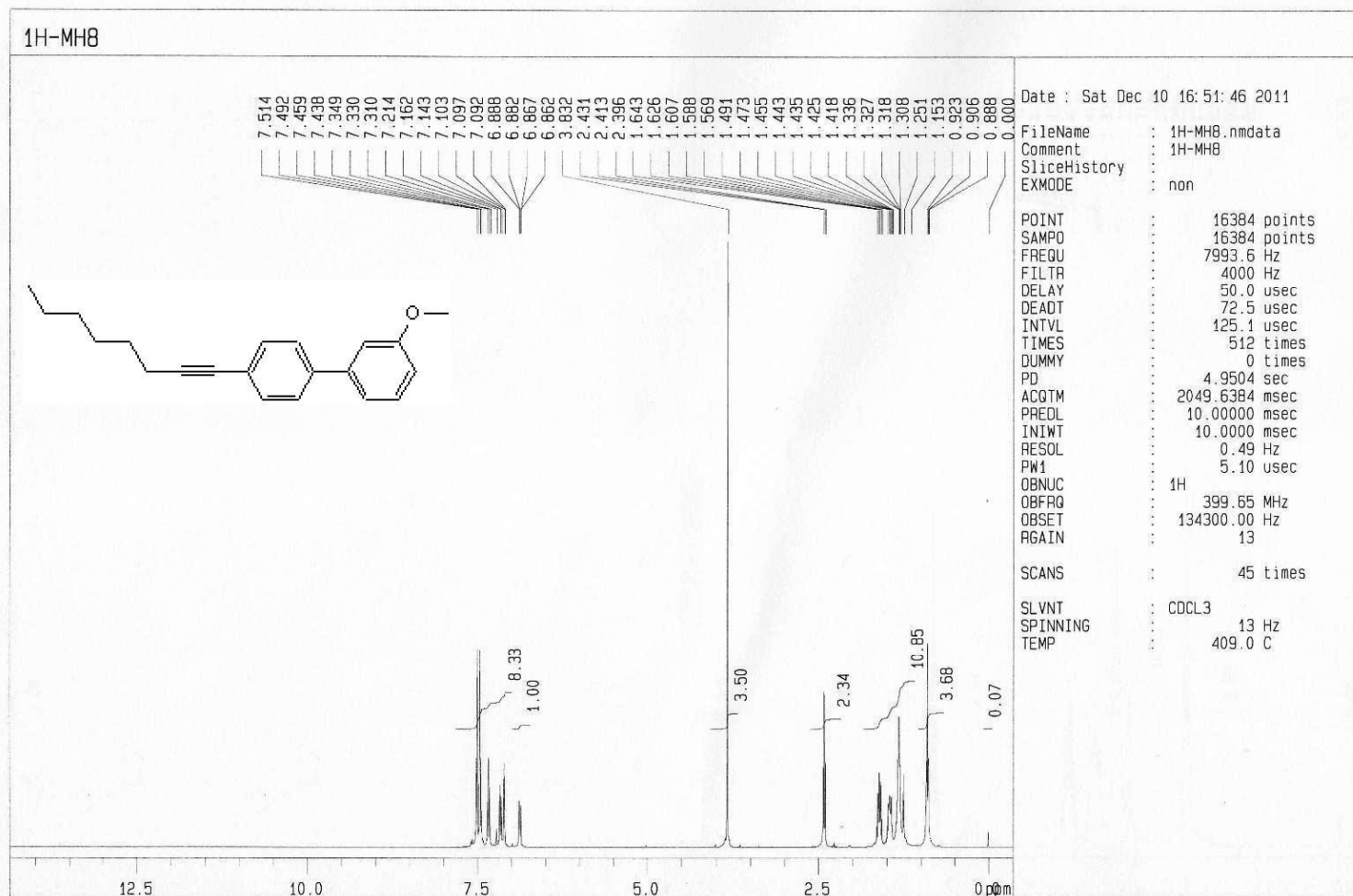
^{13}C NMR of compound 11

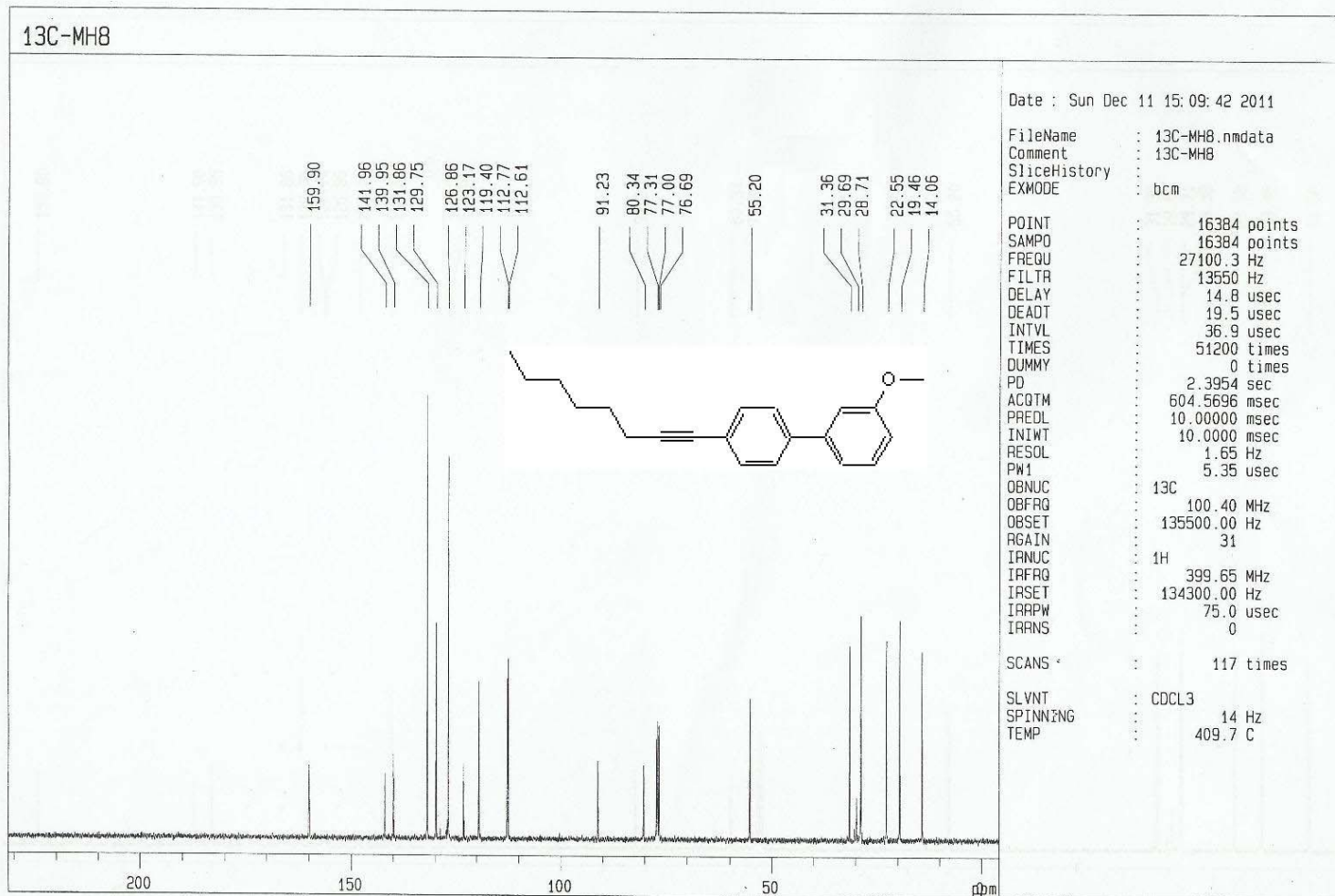
^1H NMR of compound 12

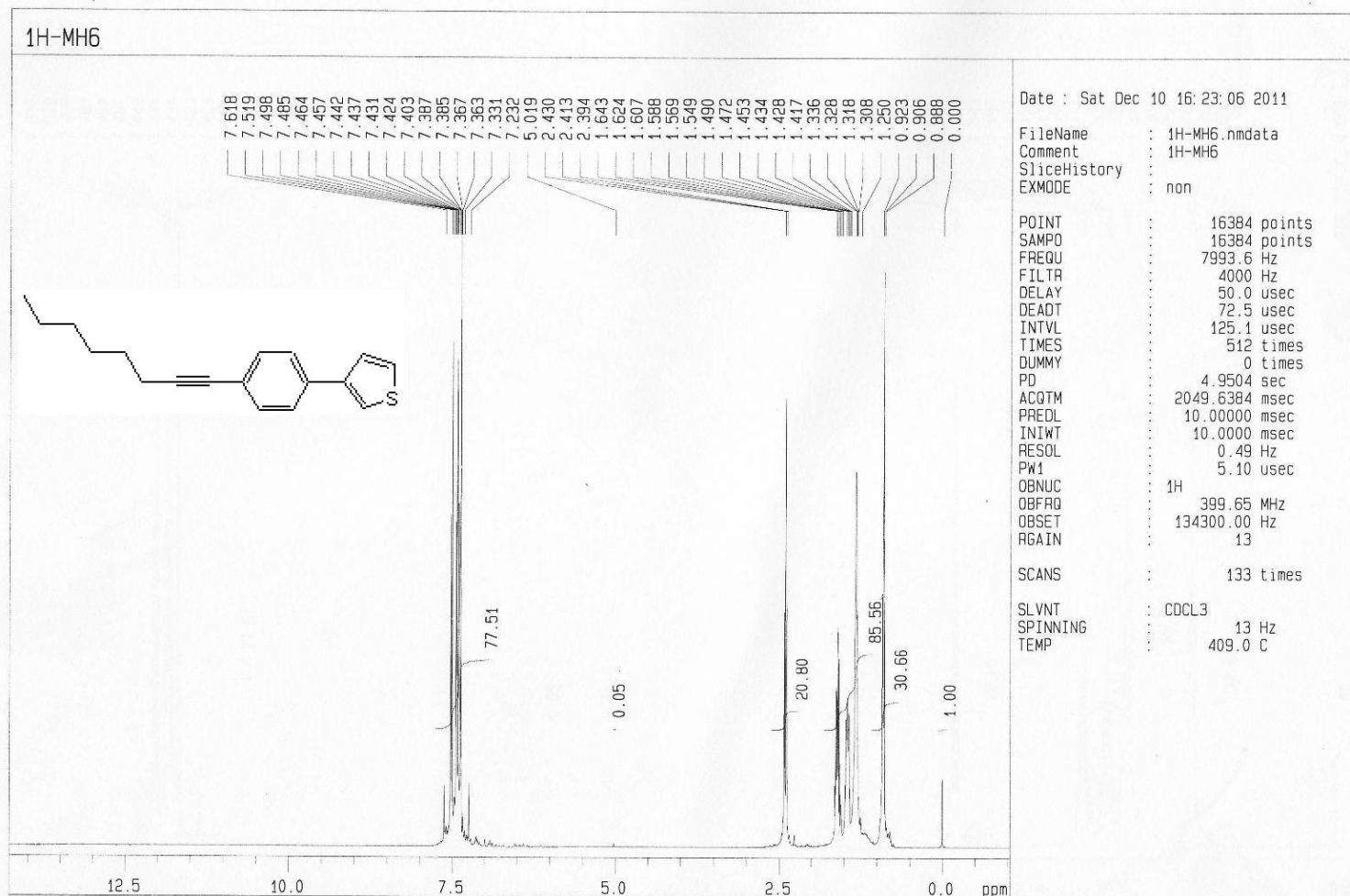
¹H NMR of compound 13

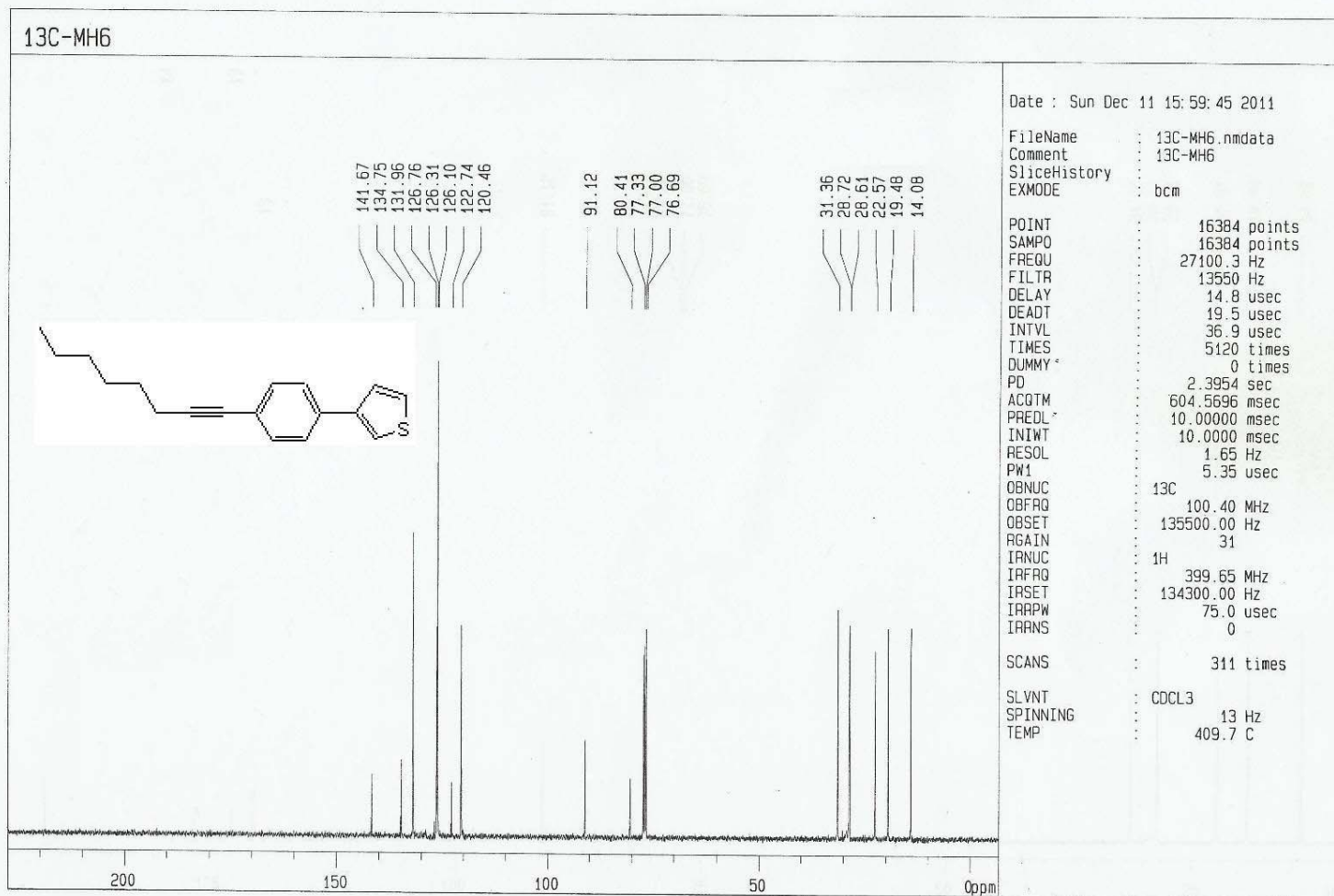
^{13}C NMR of compound 13

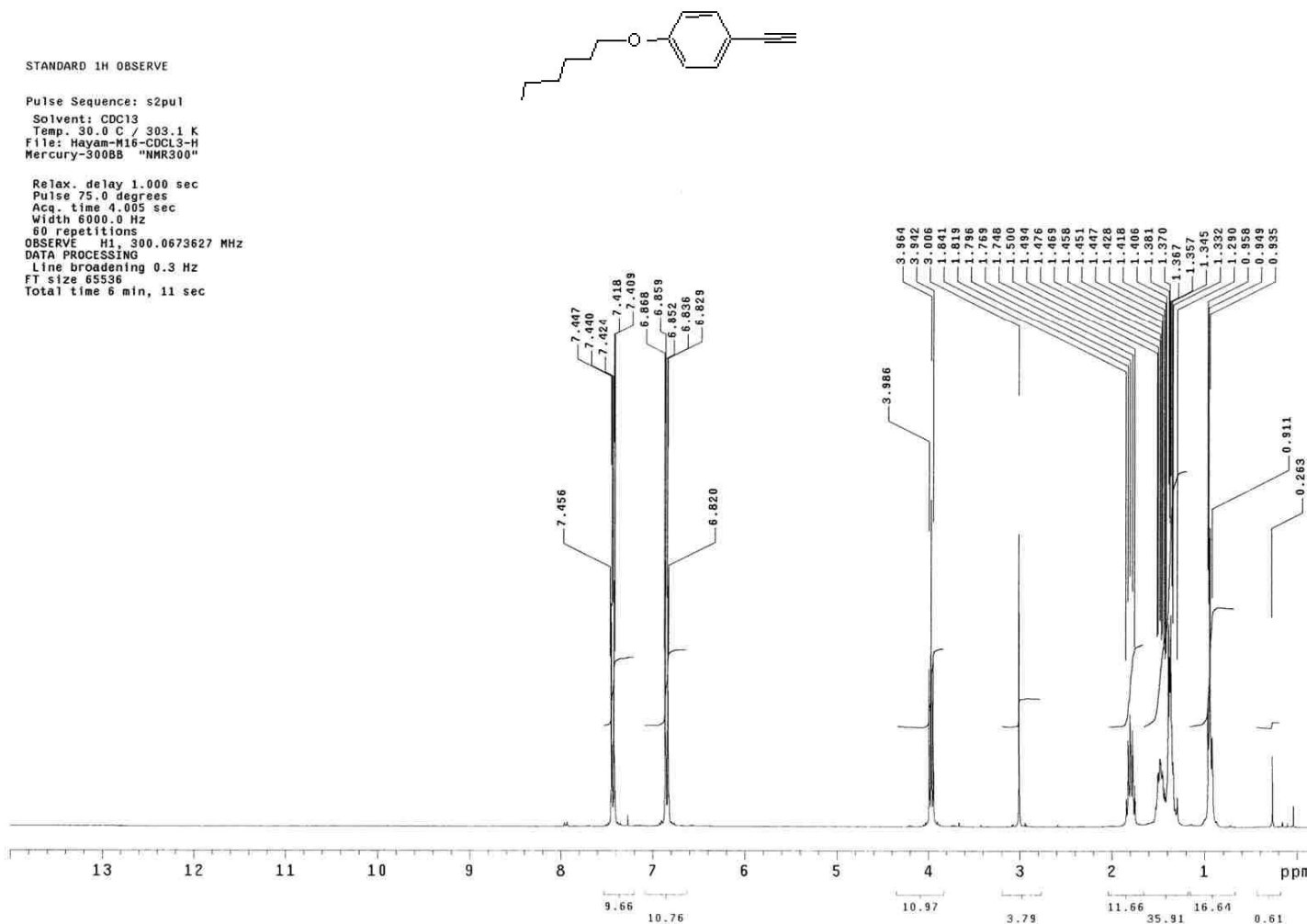
¹H NMR of compound 14

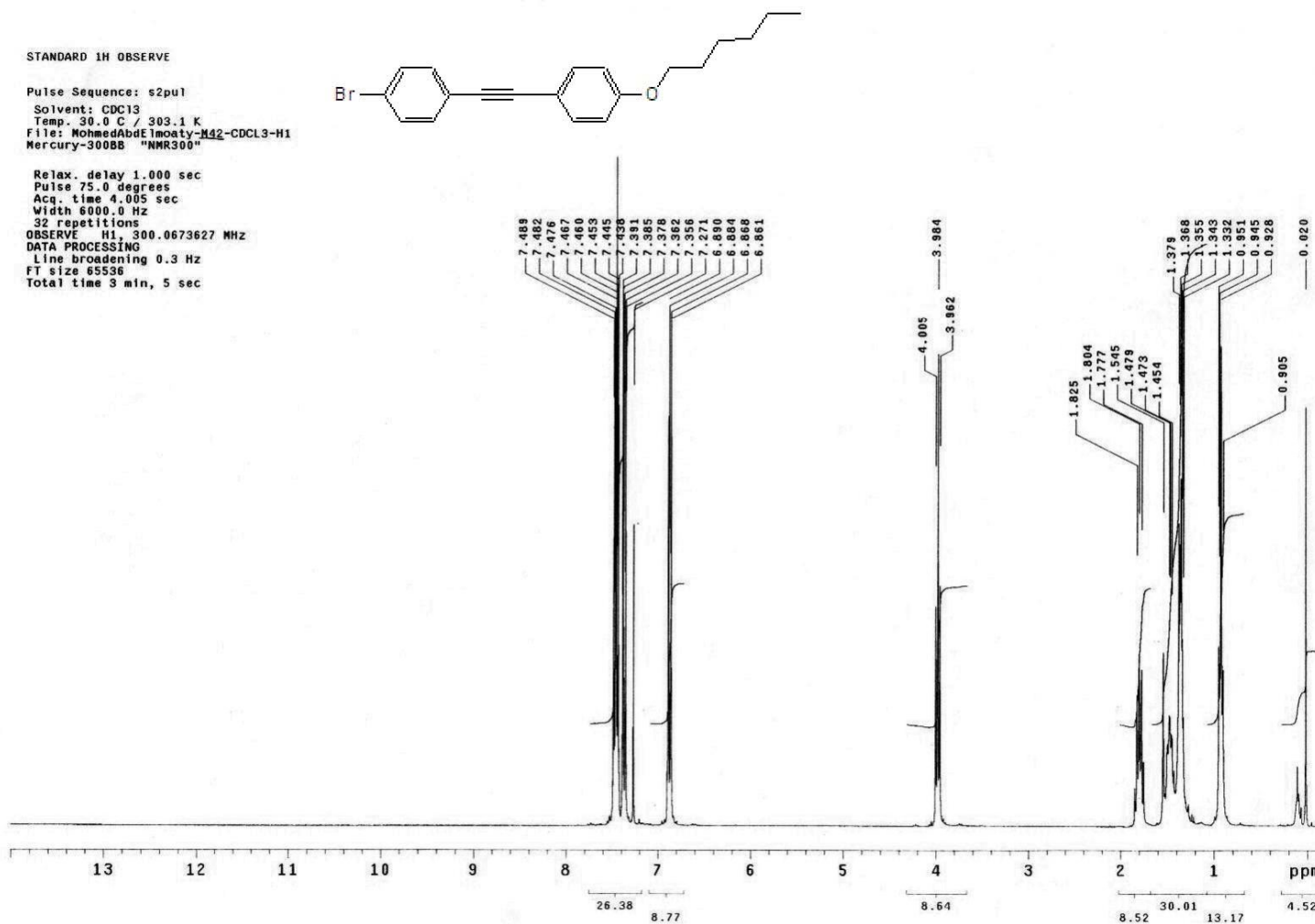
^{13}C NMR of compound 14

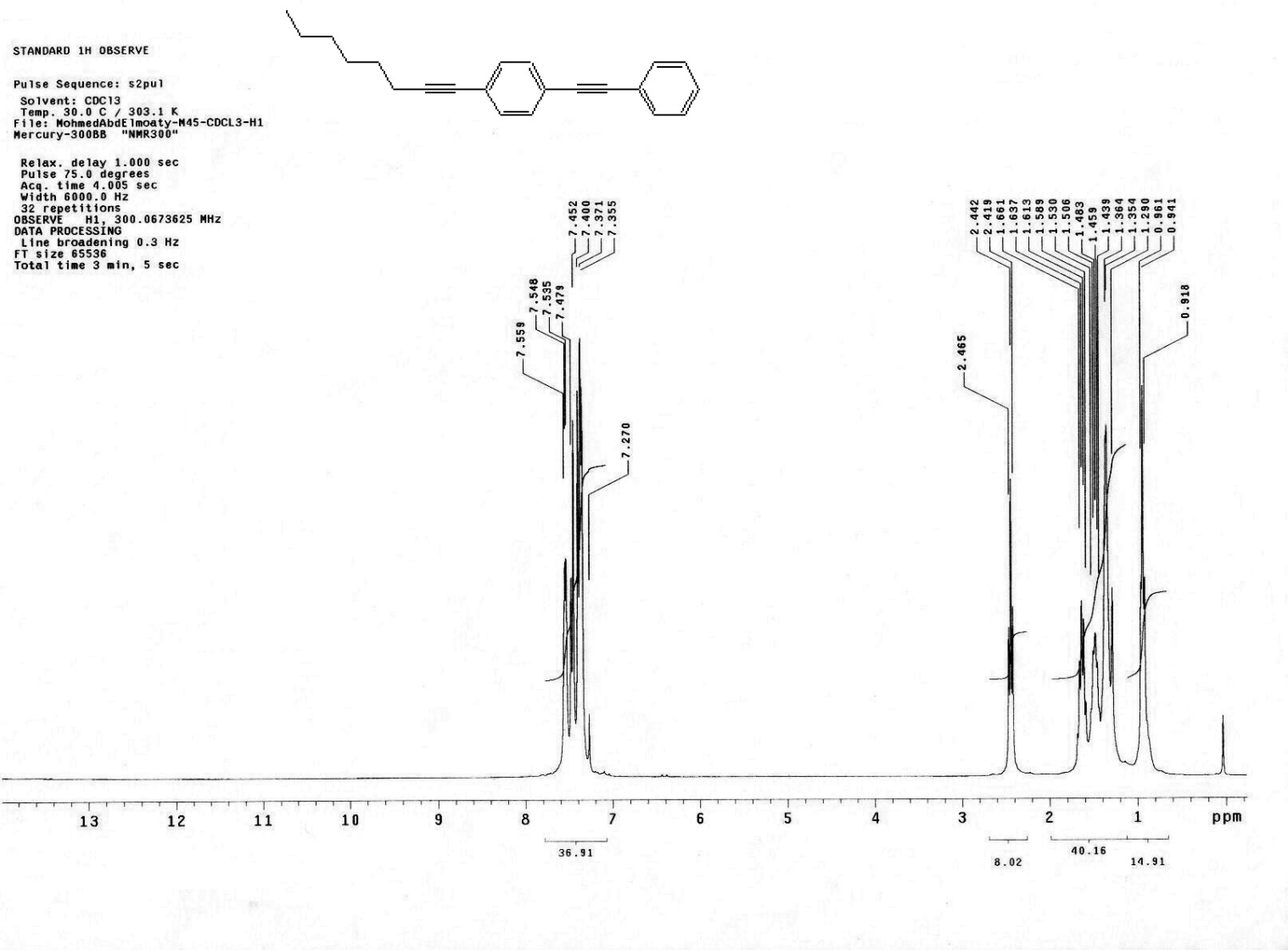
¹³C NMR of compound 15

^{13}C NMR of compound 15

¹H NMR of compound 16

^{13}C NMR of compound 16

¹H NMR of compound 17

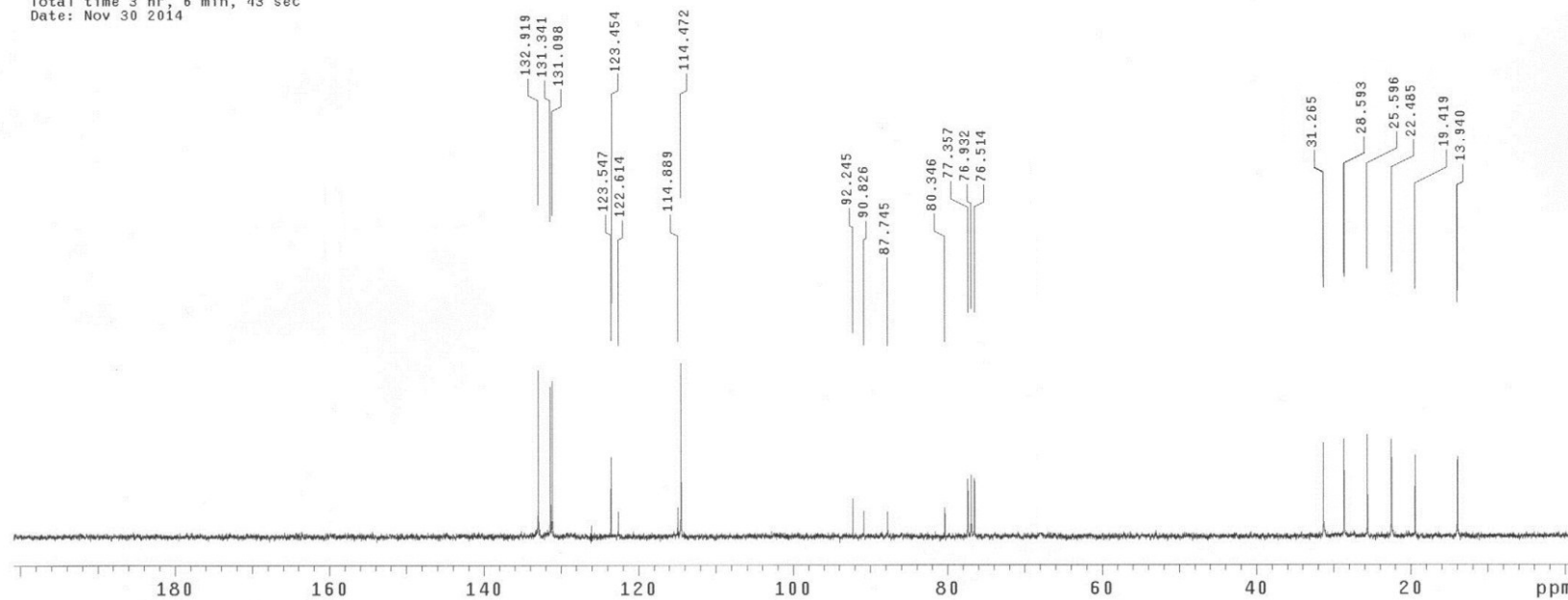
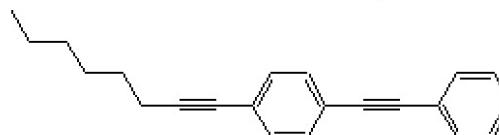
¹H NMR of compound 18

^1H NMR of compound 19

MohammedAbdo1Moaty-M43-CDC13-C13

Archive directory: /export/home/vnmr1/vnmrsys/data
Sample directory: DD5mm_test_12Mar2014-21:34:40
File: PROTON

Pulse Sequence: s2pu1

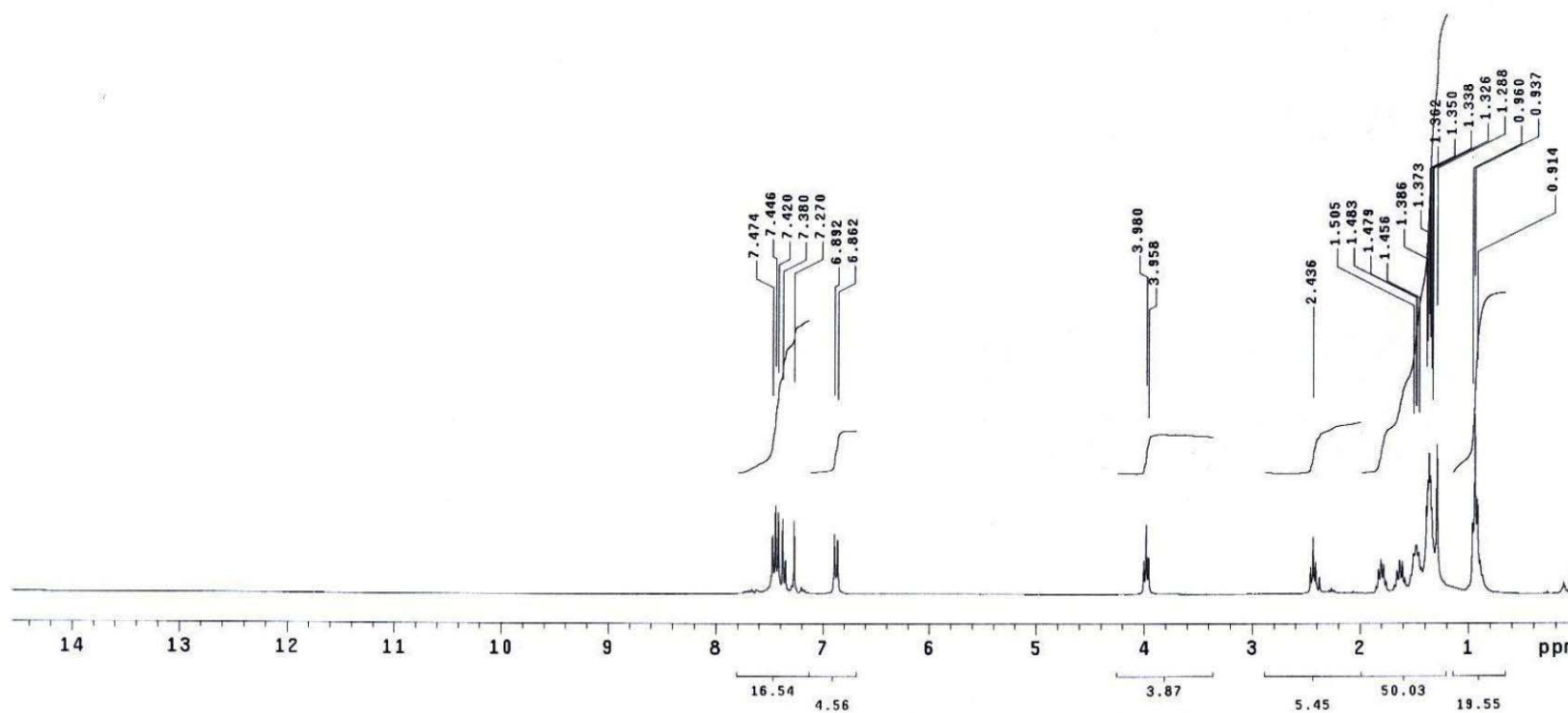
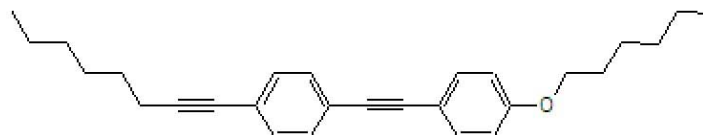
Solvent: CDC13
Temp. 30.0 C / 303.1 K
Mercury-300BB "NMR300"Pulse 48.7 degrees
Acq. time 1.707 sec
Width 18761.7 Hz
864 repetitions
OBSERVE C13, 75.452062 MHz
DECOUPLE H1, 300.0688576 MHz
Power 33 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 65536
Total time 3 hr, 6 min, 43 sec
Date: Nov 30 2014

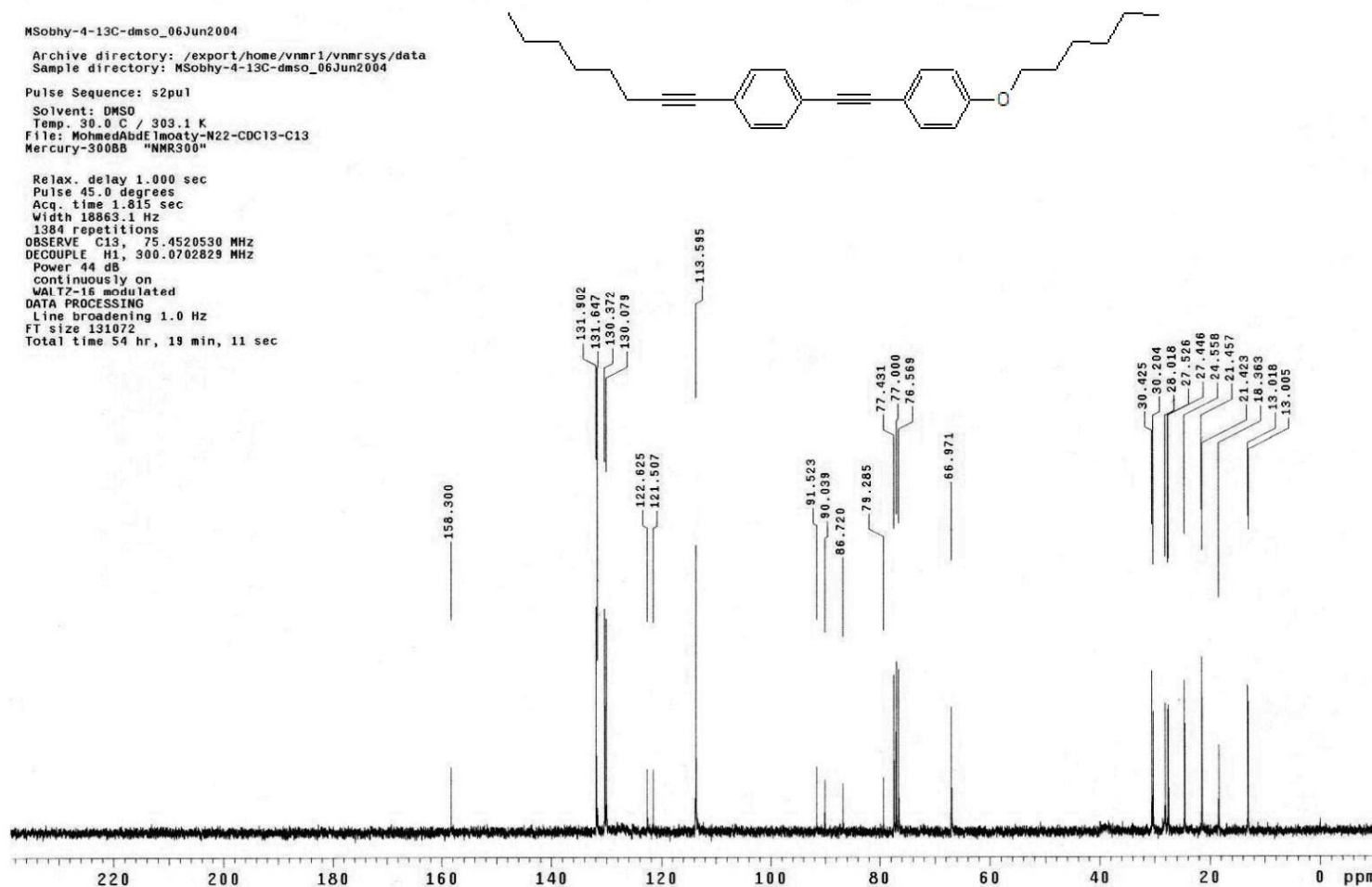
^{13}C NMR of compound 19

STANDARD 1H OBSERVE

Pulse Sequence: s2pul
Solvent: CDCl₃
Temp. 30.0 C / 303.1 K
File: MohamadAbdelmoety-MC9-CDCl₃-H
Mercury-300BB "NMR300"

Relax. delay 1.000 sec
Pulse 75.0 degrees
Acq. time 4.005 sec
Width 6000.0 Hz
12 repetitions
OBSERVE H1, 300.0673627 MHz
DATA PROCESSING
Line broadening 0.3 Hz
FT size 65536
Total time 3 min, 5 sec



¹H NMR of compound 20

^{13}C NMR of compound 20