

Supplementary Material

Efficient microwave synthesis and anti-cancer evaluation of new substituted 2,4-diazaspiro[5.5]undecane-1,5,9-trione (or 1,3,5,9-tetraone) derivatives

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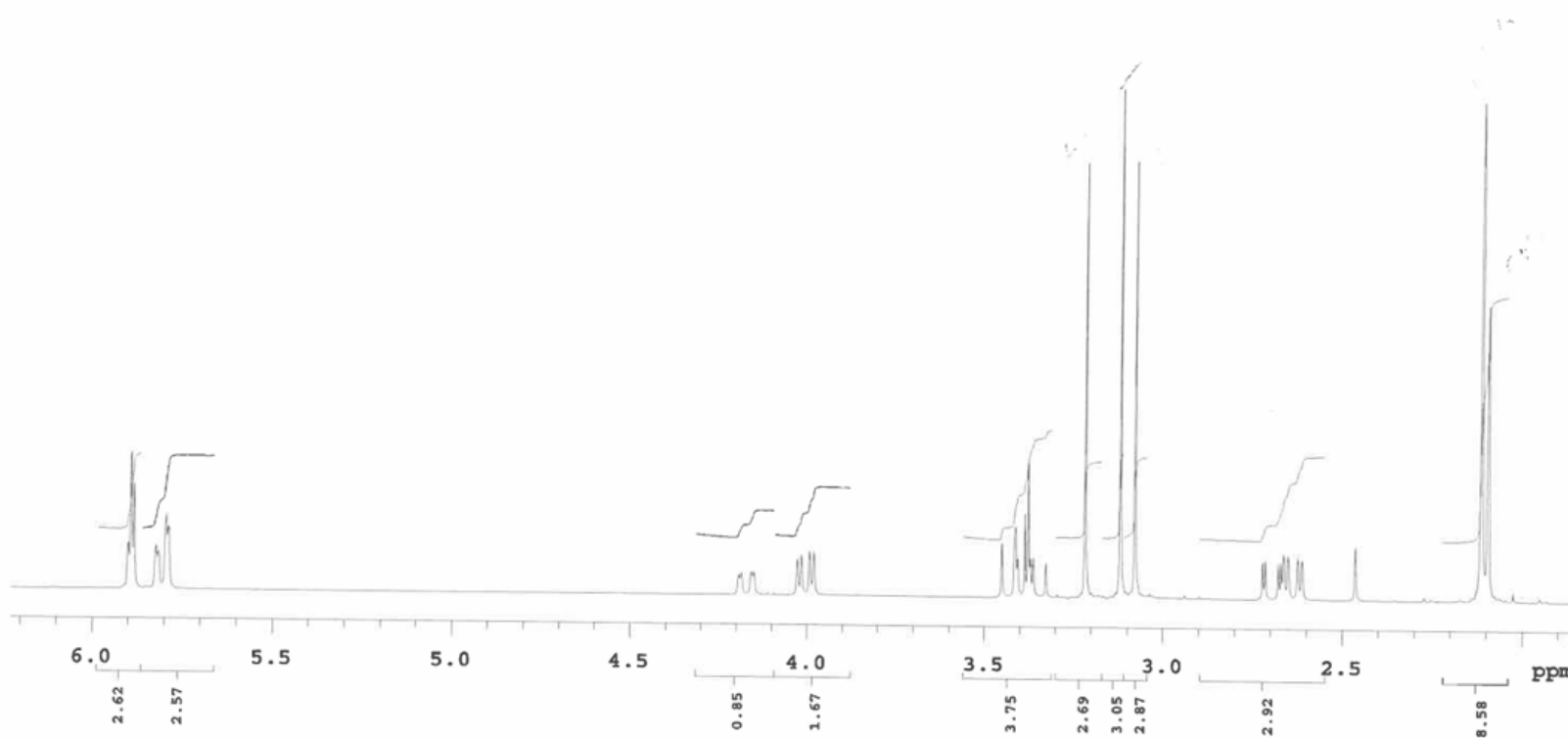
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¹ H, ¹³ C NMR and Mass Spectra of compounds 3d,e, g-j	S2
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H-NMR spectrum of 3d



C-NMR spectrum of 3d

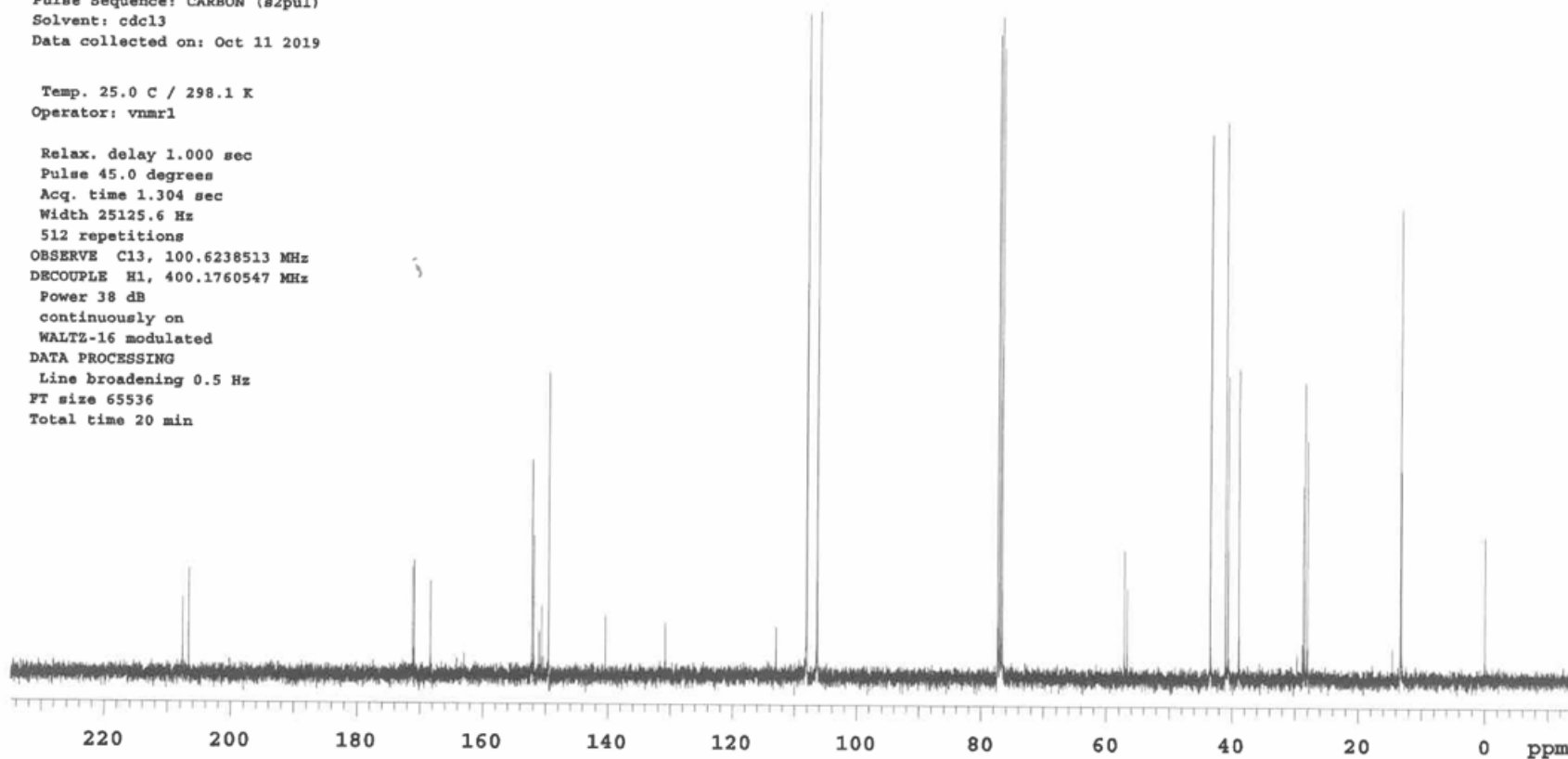
VB-29

Sample Name:
VB-29
Data Collected on:
mercury400-mercury400
Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
VB-29_20191011_01
FidFile: CARBON_01

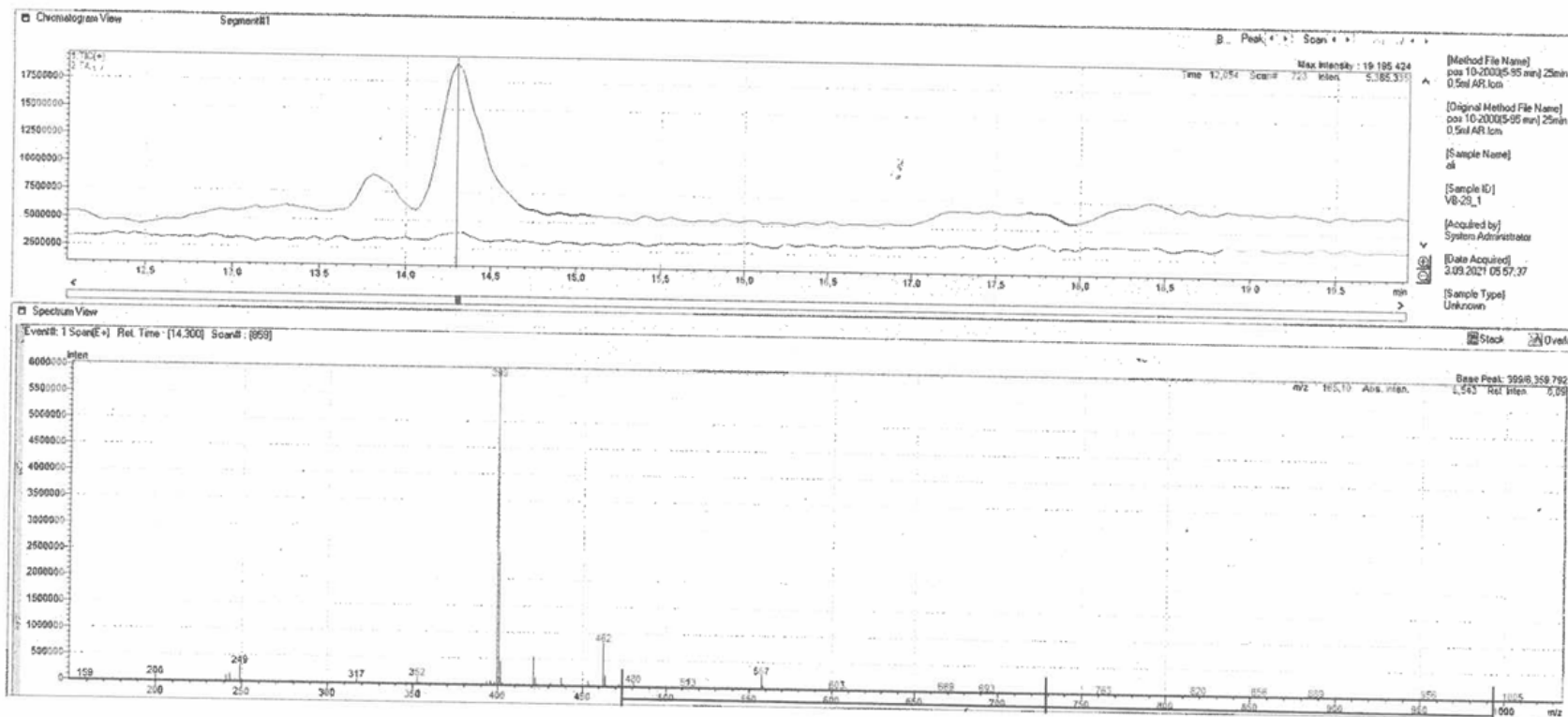
Pulse Sequence: CARBON (s2pul)
Solvent: cdcl3
Data collected on: Oct 11 2019

Temp. 25.0 C / 298.1 K
Operator: vnmr1

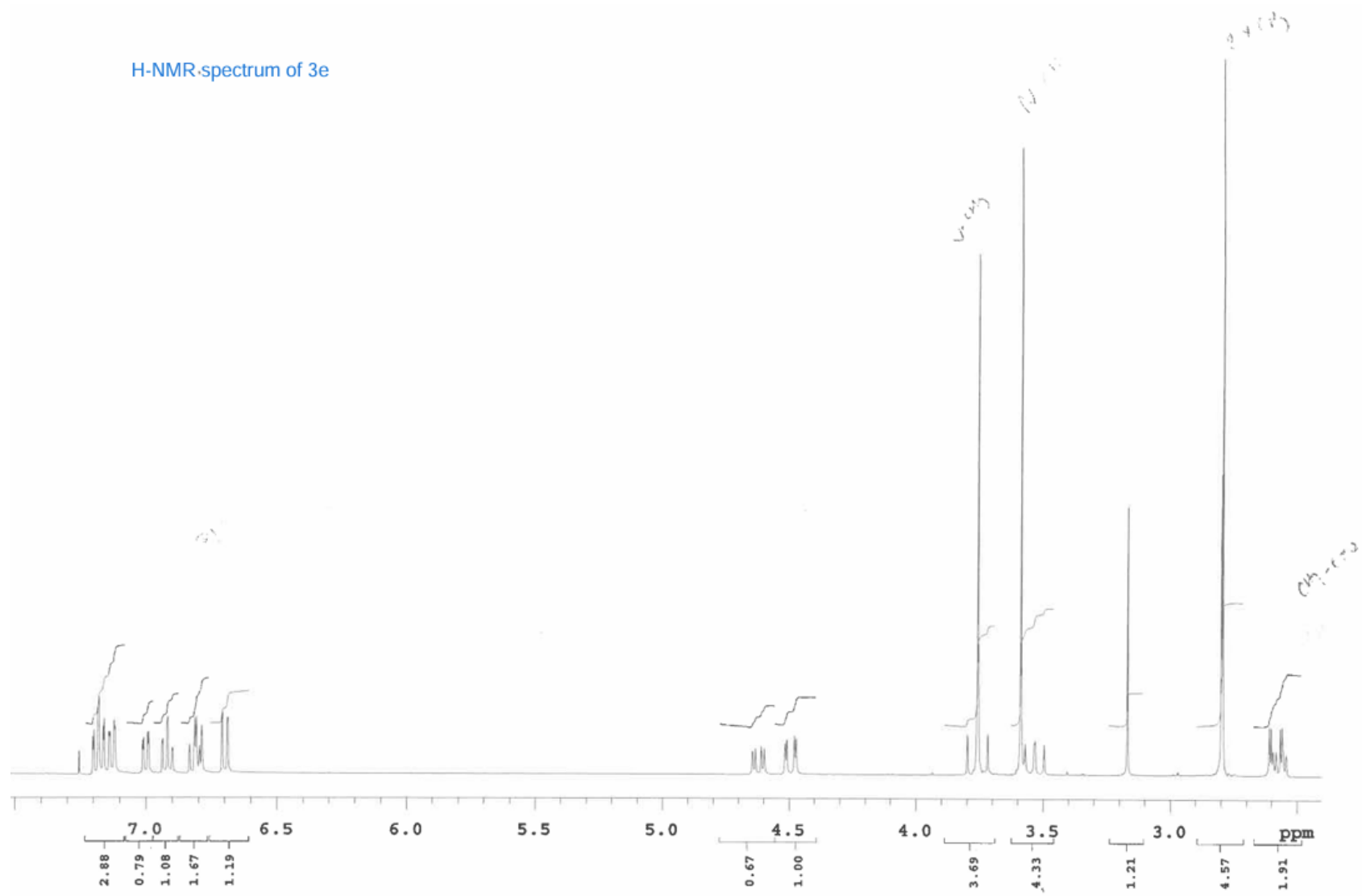
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.304 sec
Width 25125.6 Hz
512 repetitions
OBSERVE C13, 100.6238513 MHz
DECOUPLE H1, 400.1760547 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 20 min



MS Spectrum of 3d



H-NMR spectrum of 3e



C-NMR spectrum of 3e

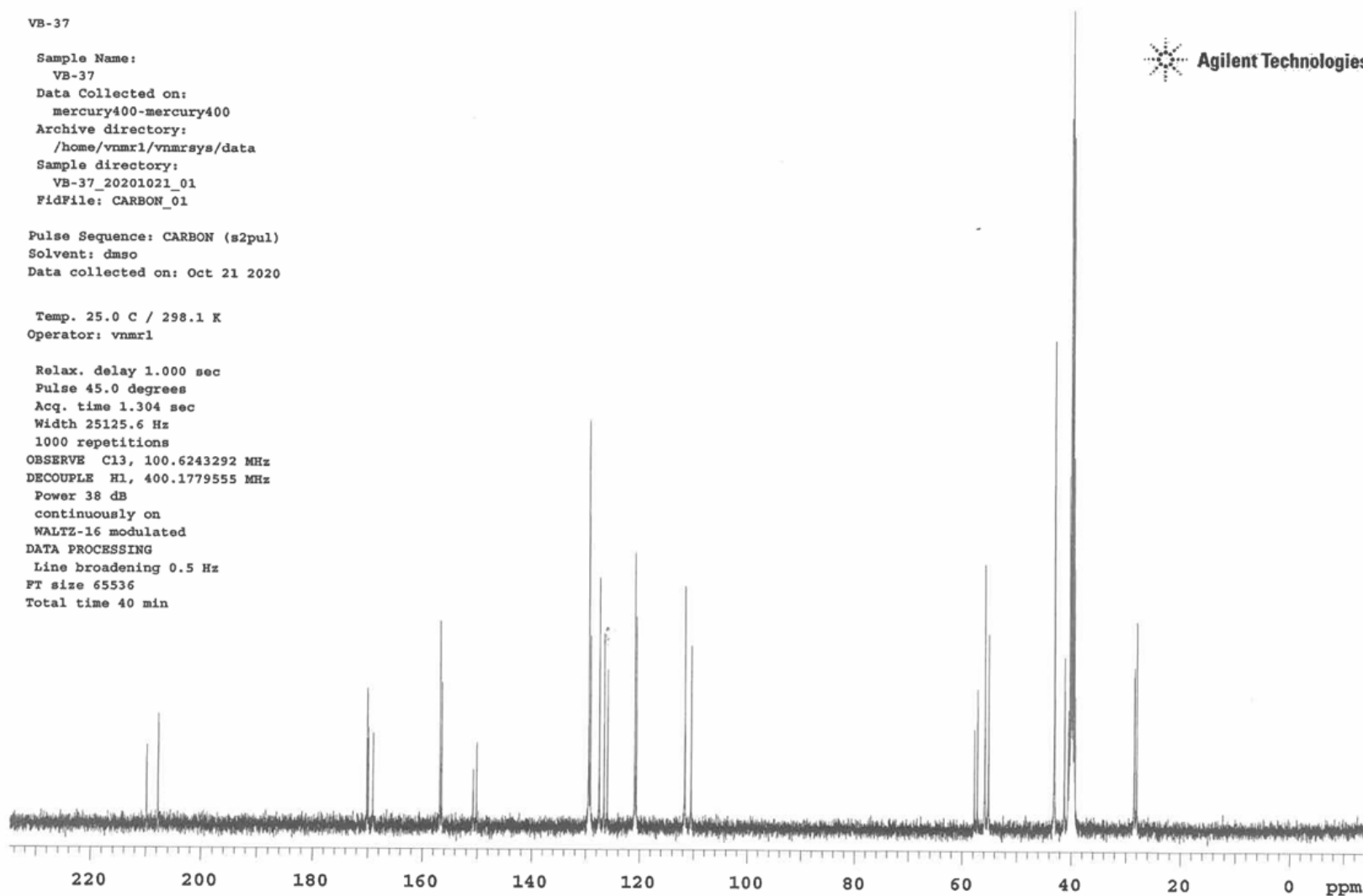
VB-37

Sample Name:
VB-37
Data Collected on:
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Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
VB-37_20201021_01
FidFile: CARBON_01

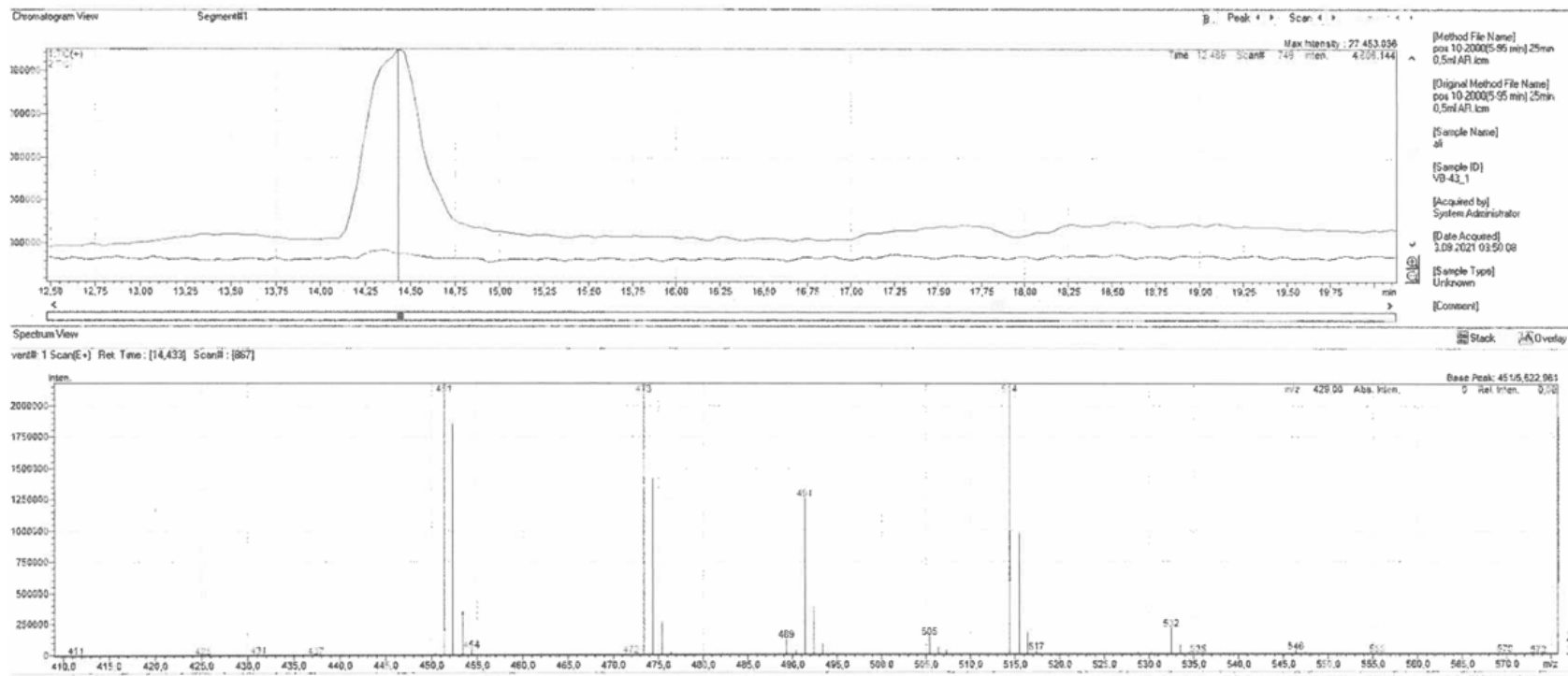
Pulse Sequence: CARBON (s2pul)
Solvent: dmsc
Data collected on: Oct 21 2020

Temp. 25.0 C / 298.1 K
Operator: vnmr1

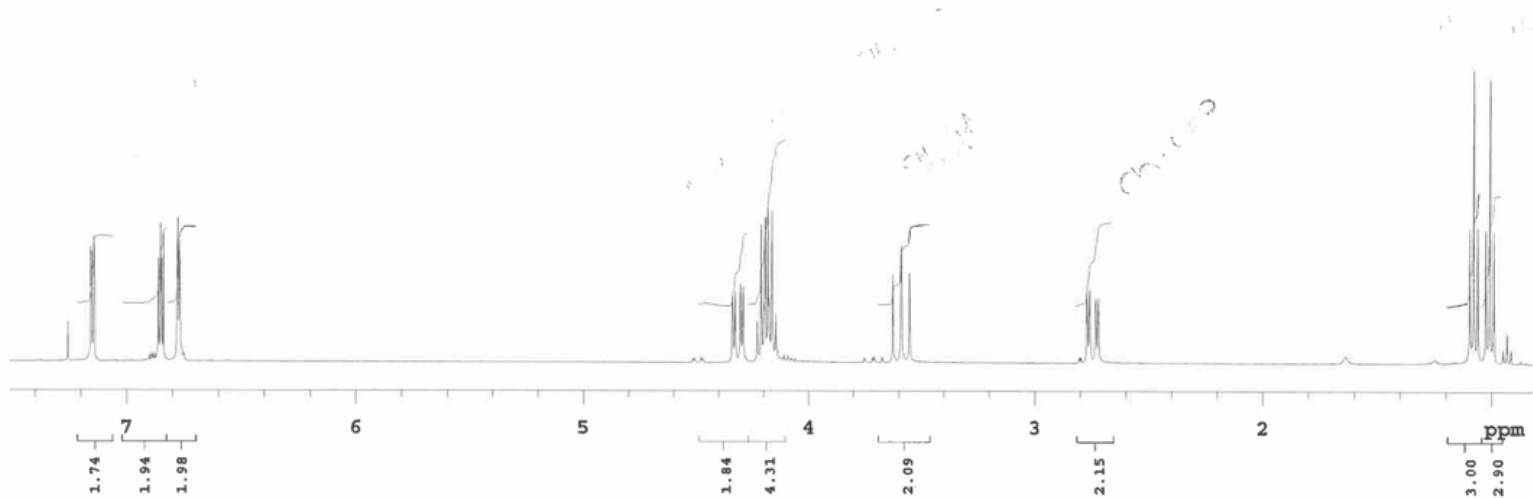
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.304 sec
Width 25125.6 Hz
1000 repetitions
OBSERVE C13, 100.6243292 MHz
DECOUPLE H1, 400.1779555 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 40 min



MS spectrum of 3e



H-NMR spectrum of 3g



C-NMR spectrum of 3g

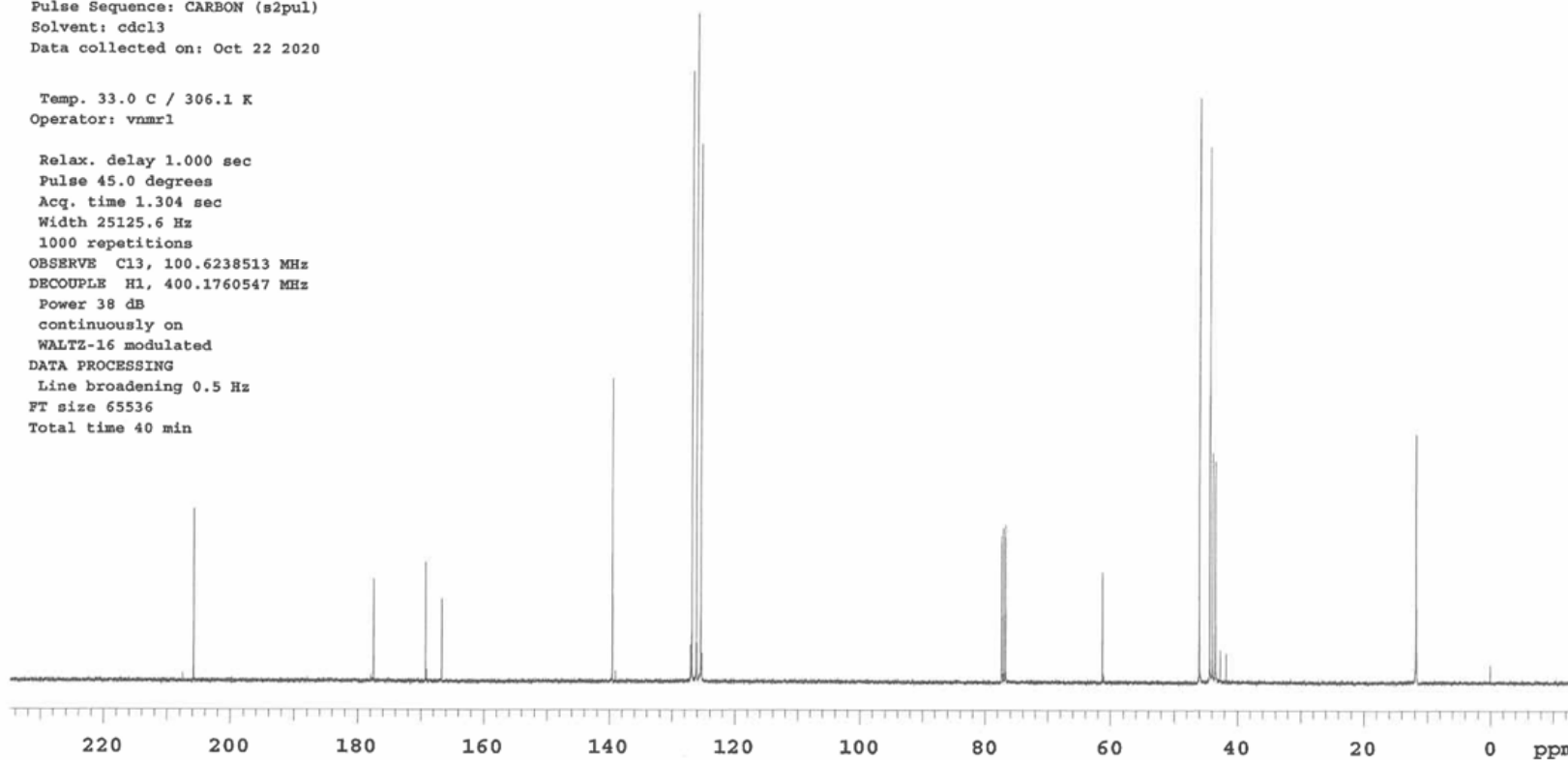
VB-32

Sample Name:
VB-32
Data Collected on:
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Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
VB-32_20201022_01
FidFile: CARBON_01

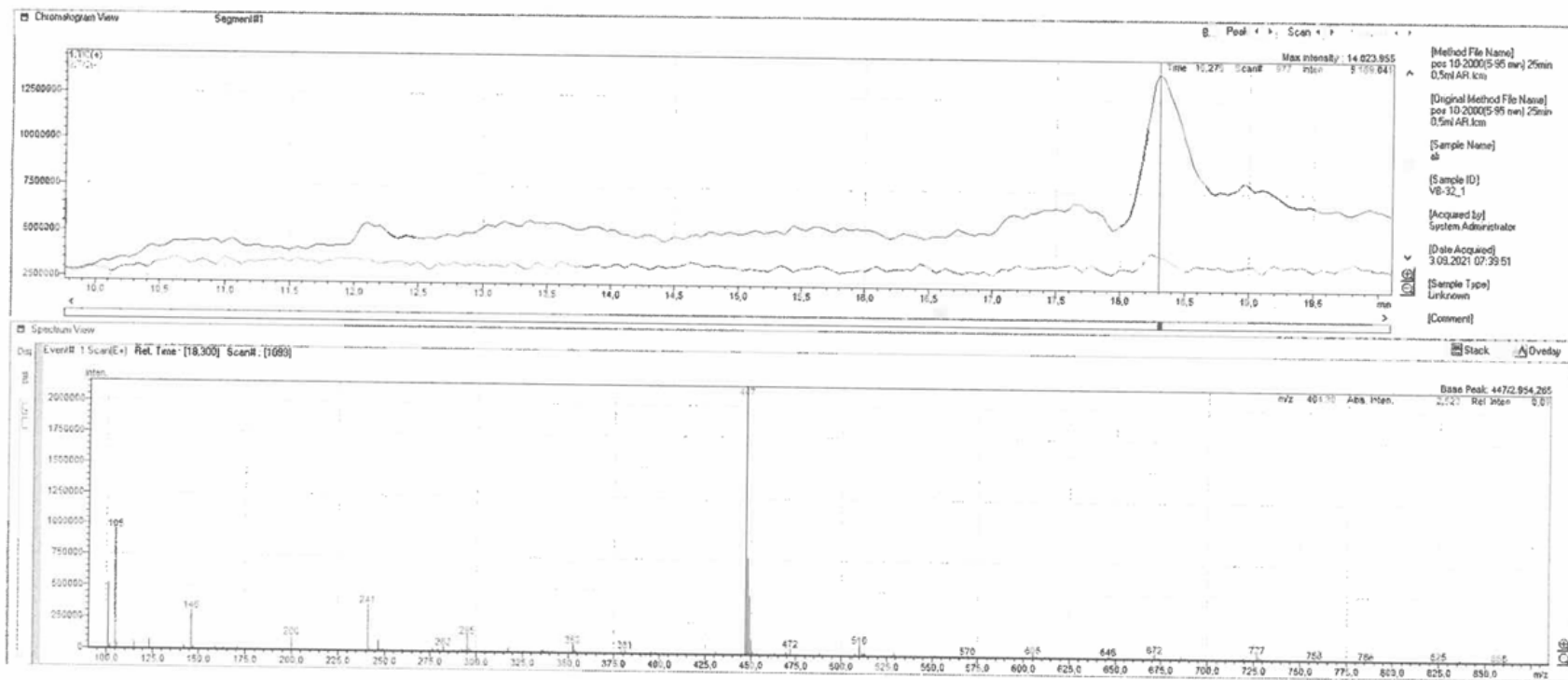
Pulse Sequence: CARBON (s2pul)
Solvent: cdcl3
Data collected on: Oct 22 2020

Temp. 33.0 C / 306.1 K
Operator: vnmr1

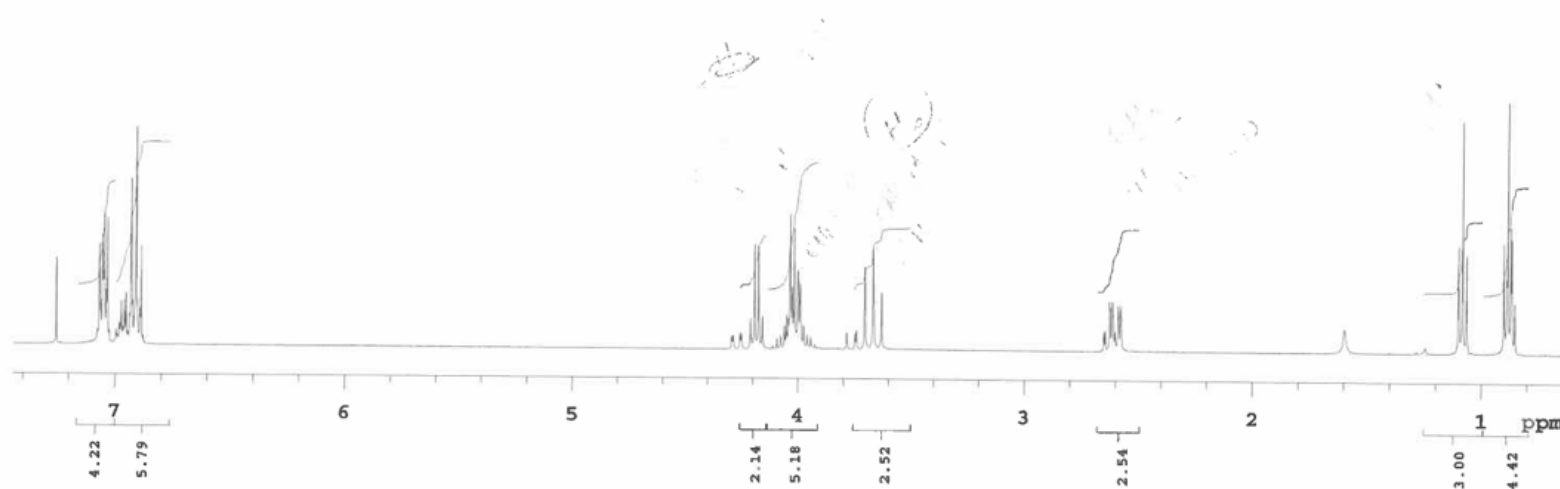
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.304 sec
Width 25125.6 Hz
1000 repetitions
OBSERVE C13, 100.6238513 MHz
DECOUPLE H1, 400.1760547 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 40 min



MS spectrum of 3g



H-NMR spectrum of 3h



VB-26

C-NMR spectrum of 3h

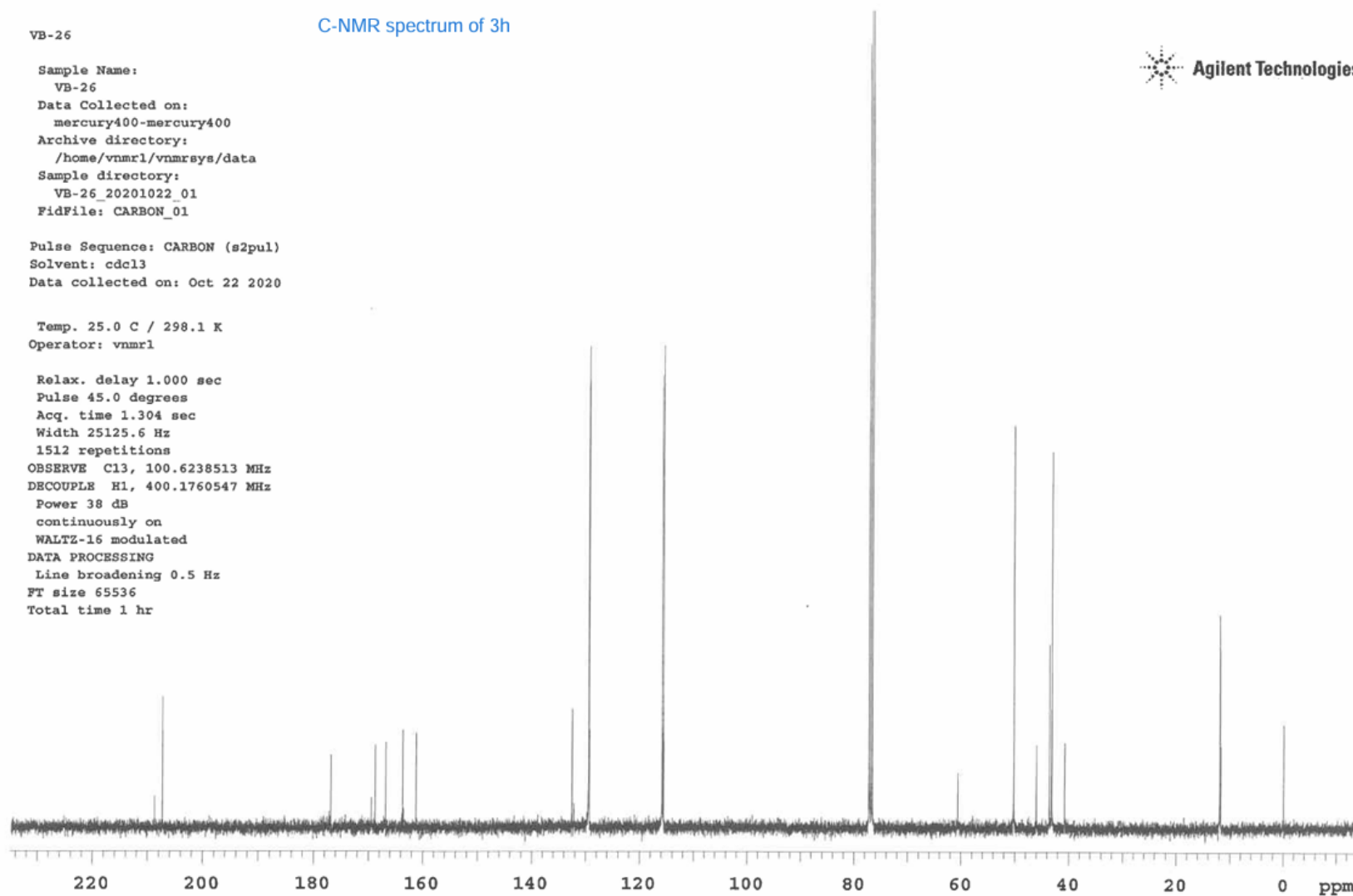


Sample Name:
VB-26
Data Collected on:
mercury400-mercury400
Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
VB-26_20201022_01
FidFile: CARBON_01

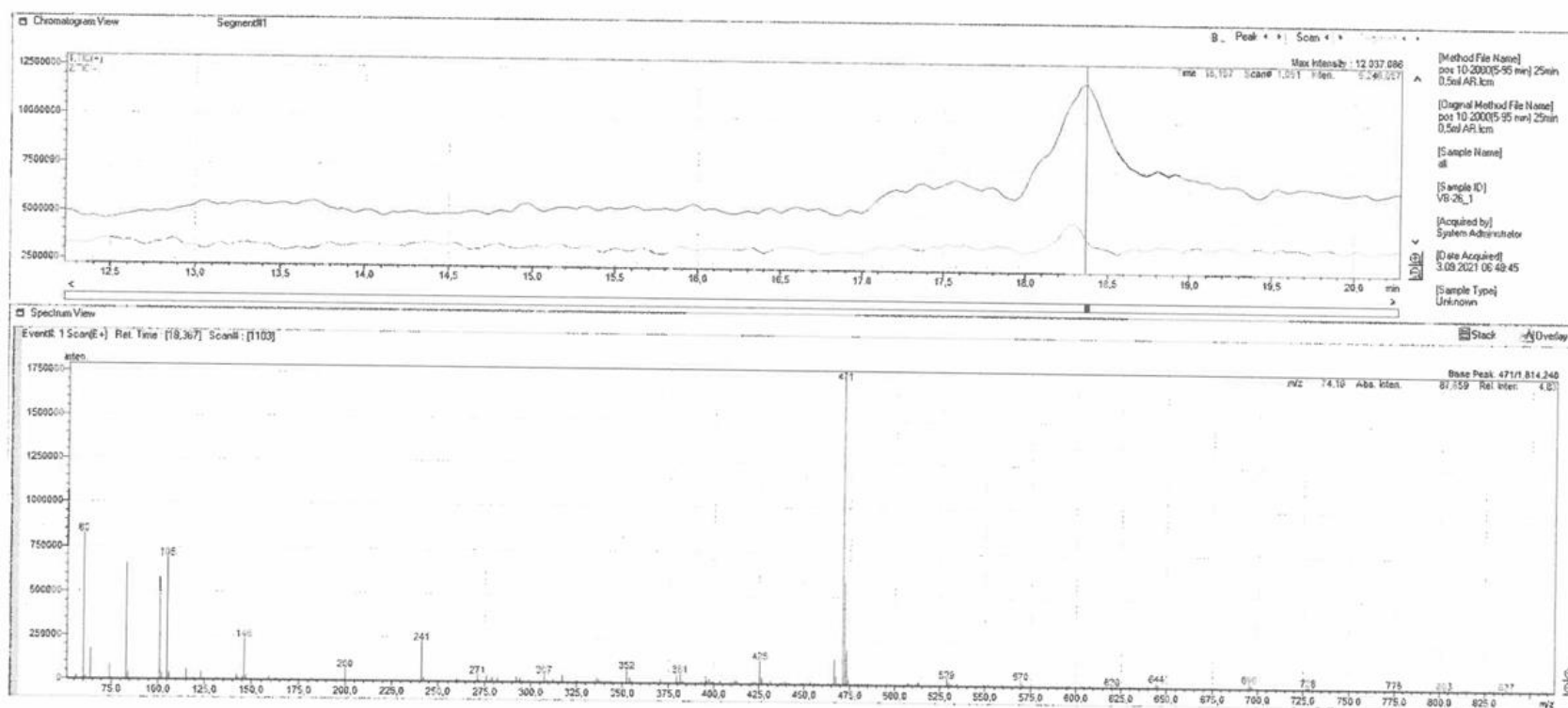
Pulse Sequence: CARBON (s2pul)
Solvent: cdcl3
Data collected on: Oct 22 2020

Temp. 25.0 C / 298.1 K
Operator: vnmr1

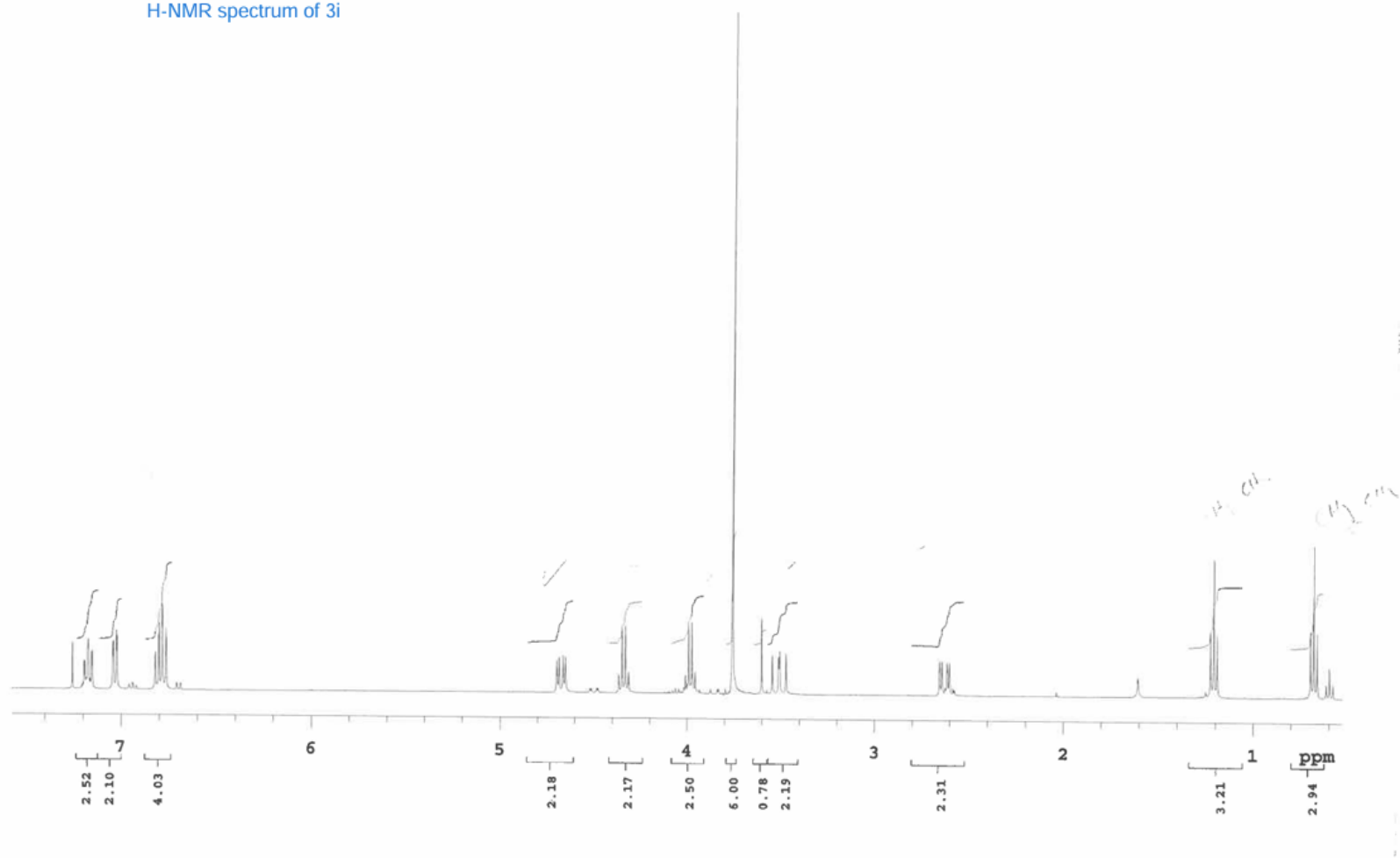
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.304 sec
Width 25125.6 Hz
1512 repetitions
OBSERVE C13, 100.6238513 MHz
DECOUPLE H1, 400.1760547 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 1 hr



H-NMR spectrum of 3h



H-NMR spectrum of 3i



C-NMR spectrum of 3i

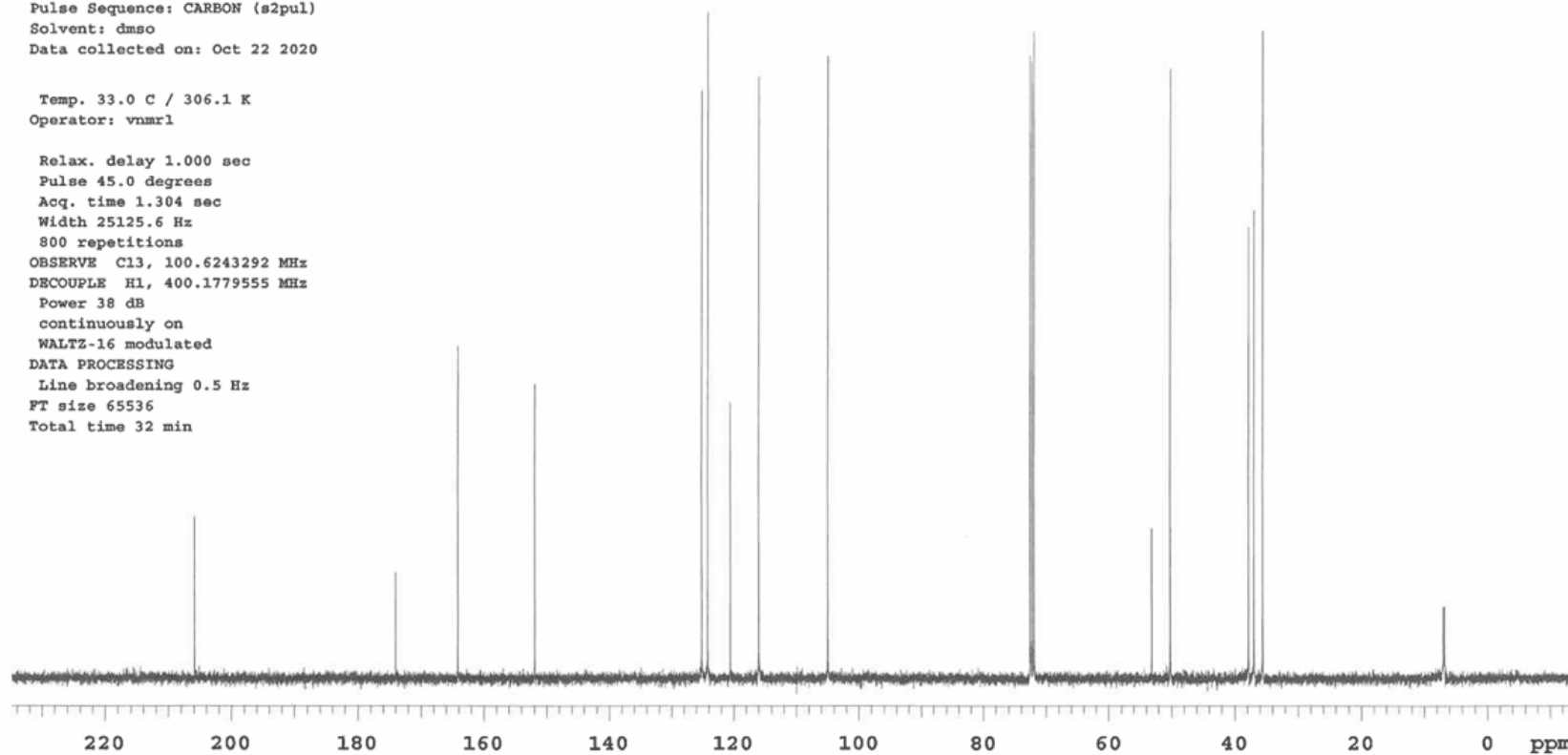
VB-33-Rf1

Sample Name:
VB-33-Rf1
Data Collected on:
mercury400-mercury400
Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
VB-33-Rf1_20201022_01
FidFile: CARBON_01

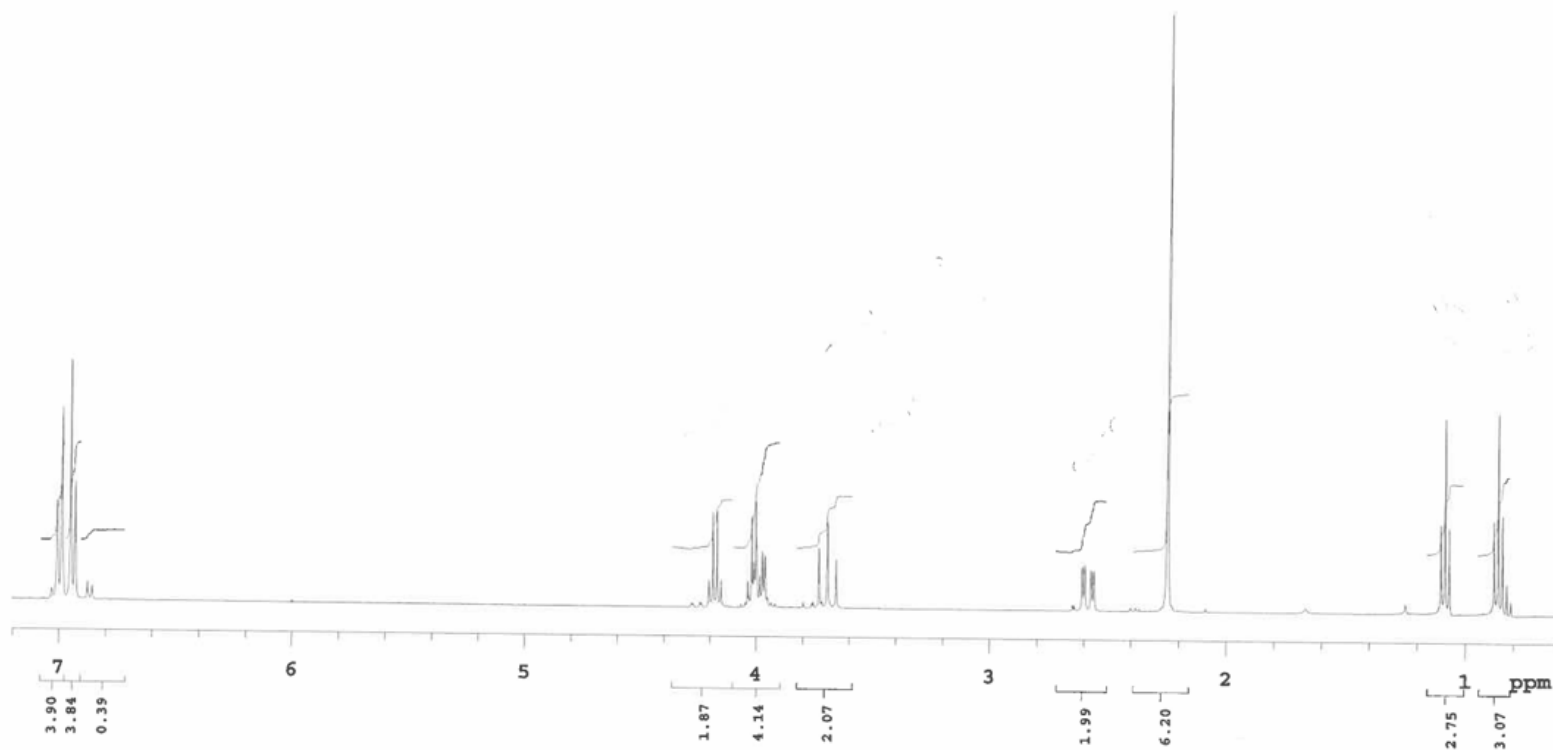
Pulse Sequence: CARBON (s2pul)
Solvent: dmsc
Data collected on: Oct 22 2020

Temp. 33.0 C / 306.1 K
Operator: vnmr1

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.304 sec
Width 25125.6 Hz
800 repetitions
OBSERVE C13, 100.6243292 MHz
DECOUPLE H1, 400.1779555 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 32 min



H-NMR spectrum of 3j



C-NMR spectrum of 3j

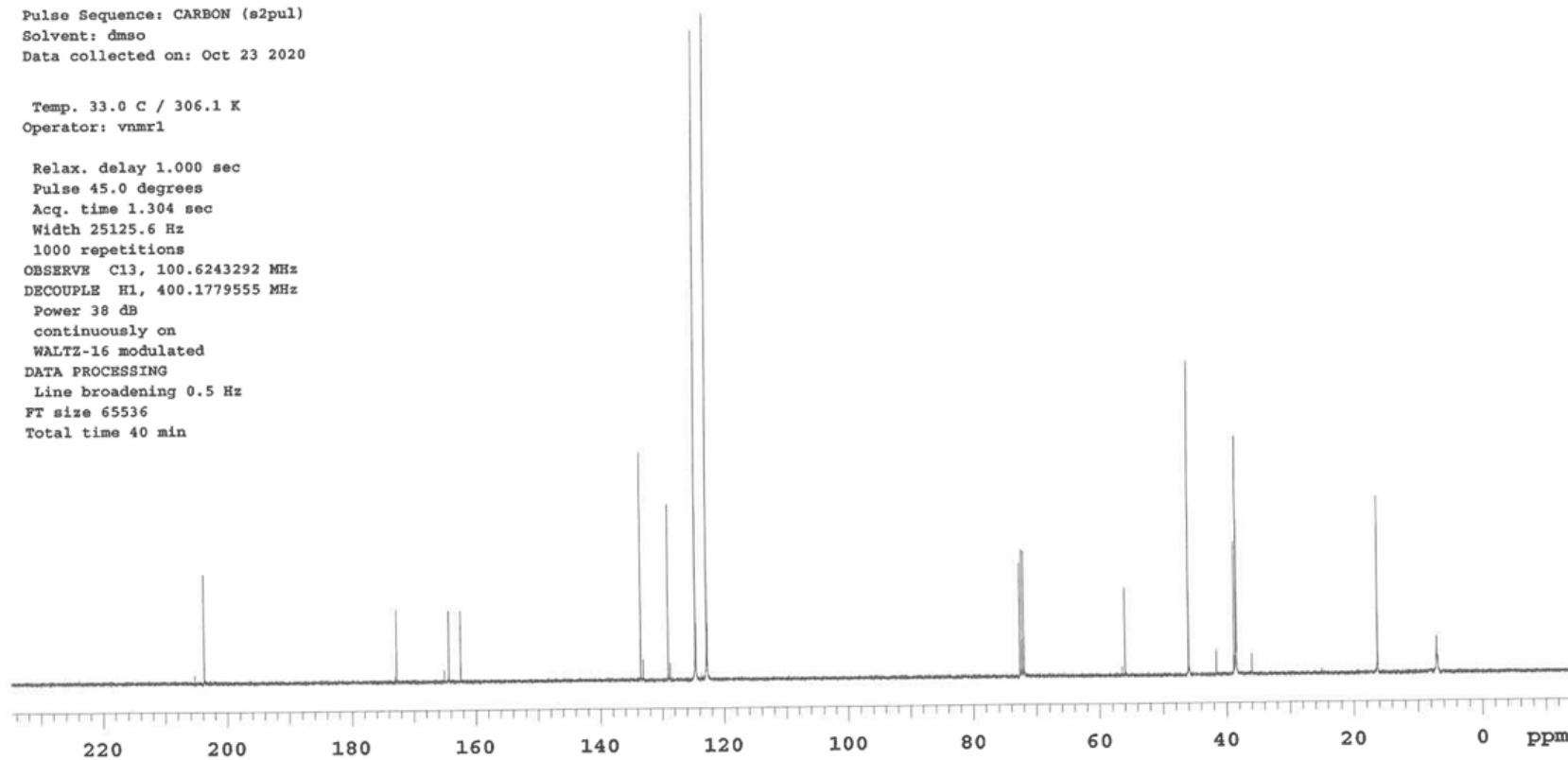
VB-30

Sample Name:
VB-30
Data Collected on:
mercury400-mercury400
Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
VB-30_20201023_01
FidFile: CARBON_01

Pulse Sequence: CARBON (s2pul)
Solvent: dmsc
Data collected on: Oct 23 2020

Temp. 33.0 C / 306.1 K
Operator: vnmr1

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.304 sec
Width 25125.6 Hz
1000 repetitions
OBSERVE C13, 100.6243292 MHz
DECOUPLE H1, 400.1779555 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 40 min



MS spectrum of 3j

