

ADMET polymerization of biobased monomers deriving from syringaresinol

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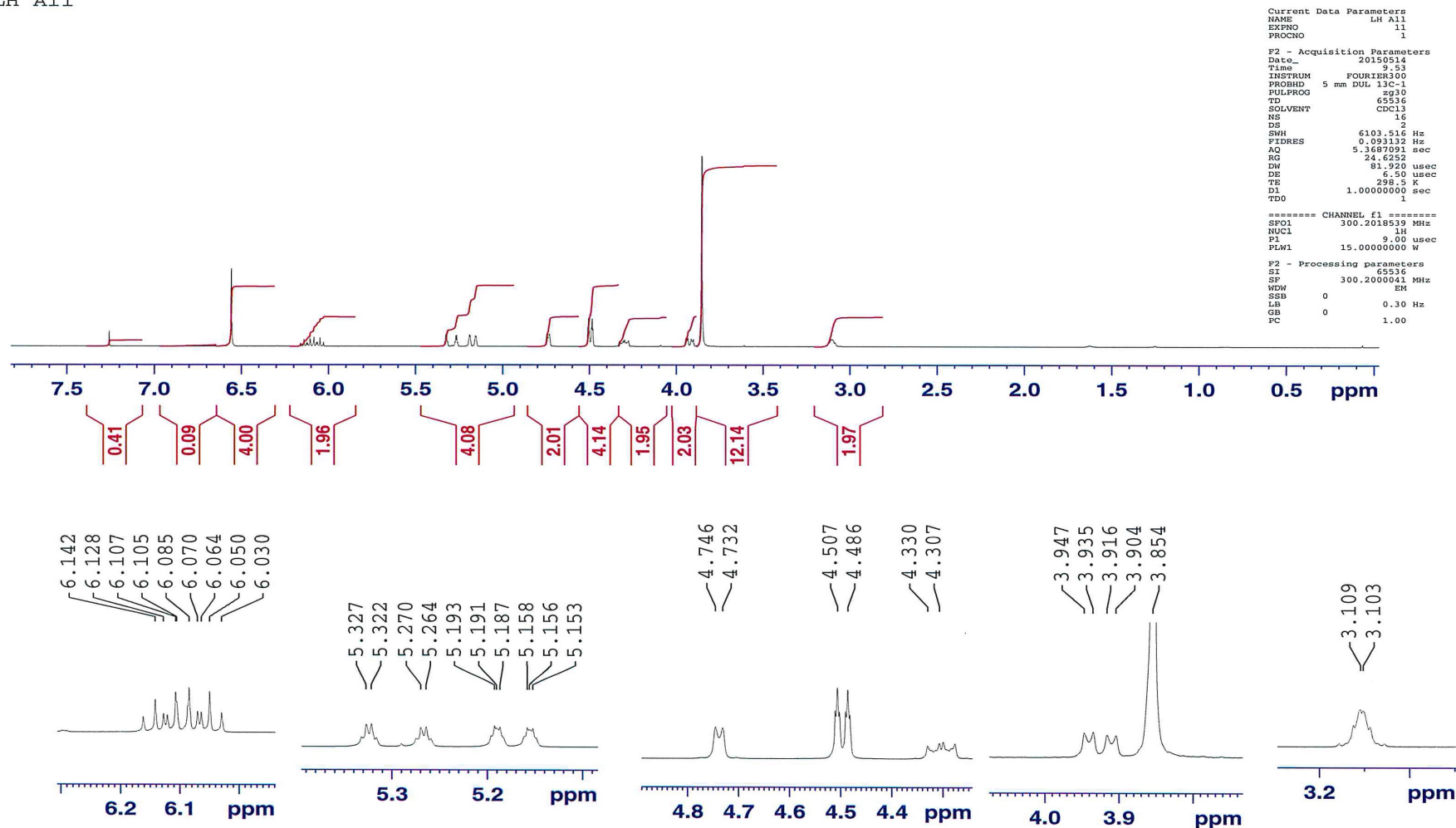
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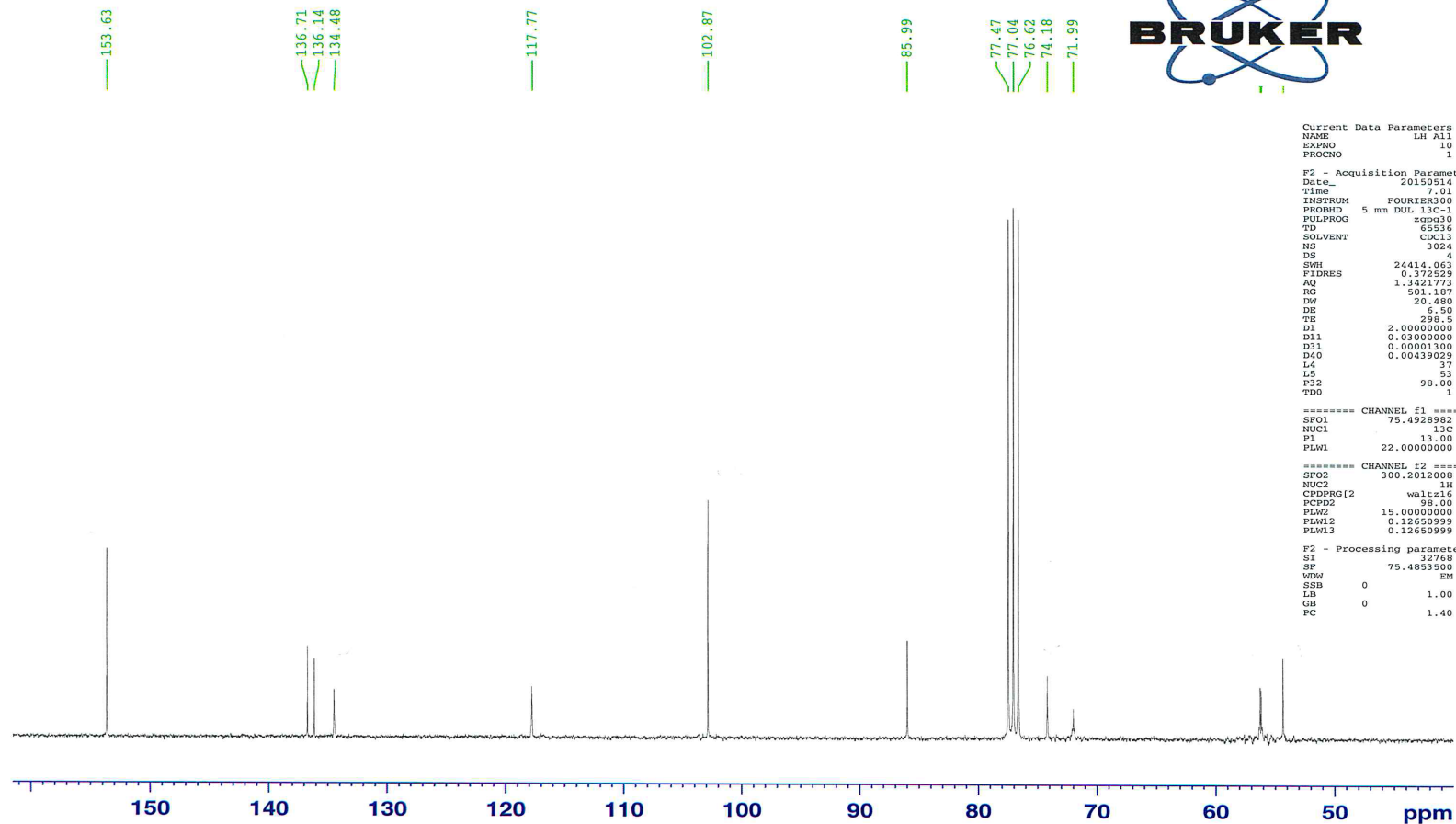
¹H NMR spectrum of SYR-A//

LH All



^{13}C NMR spectrum of SYR-A//

LH All



```

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PROCNO   1

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PULPROG  zgpg30
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NS       3024
DS       4
SWH      24414.063 Hz
FIDRES   0.372529 Hz
AQ       1.3421773 sec
RG       501.187
Dw       20.480 usec
DE       6.50 usec
TE       298.5 K
D1       2.0000000 sec
D11      0.0300000 sec
D31      0.00001300 sec
D40      0.00439023 sec
L4       37
L5       53
P32      98.00 usec
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NUC1     13C
P1       13.00 usec
PLW1     22.00000000 W

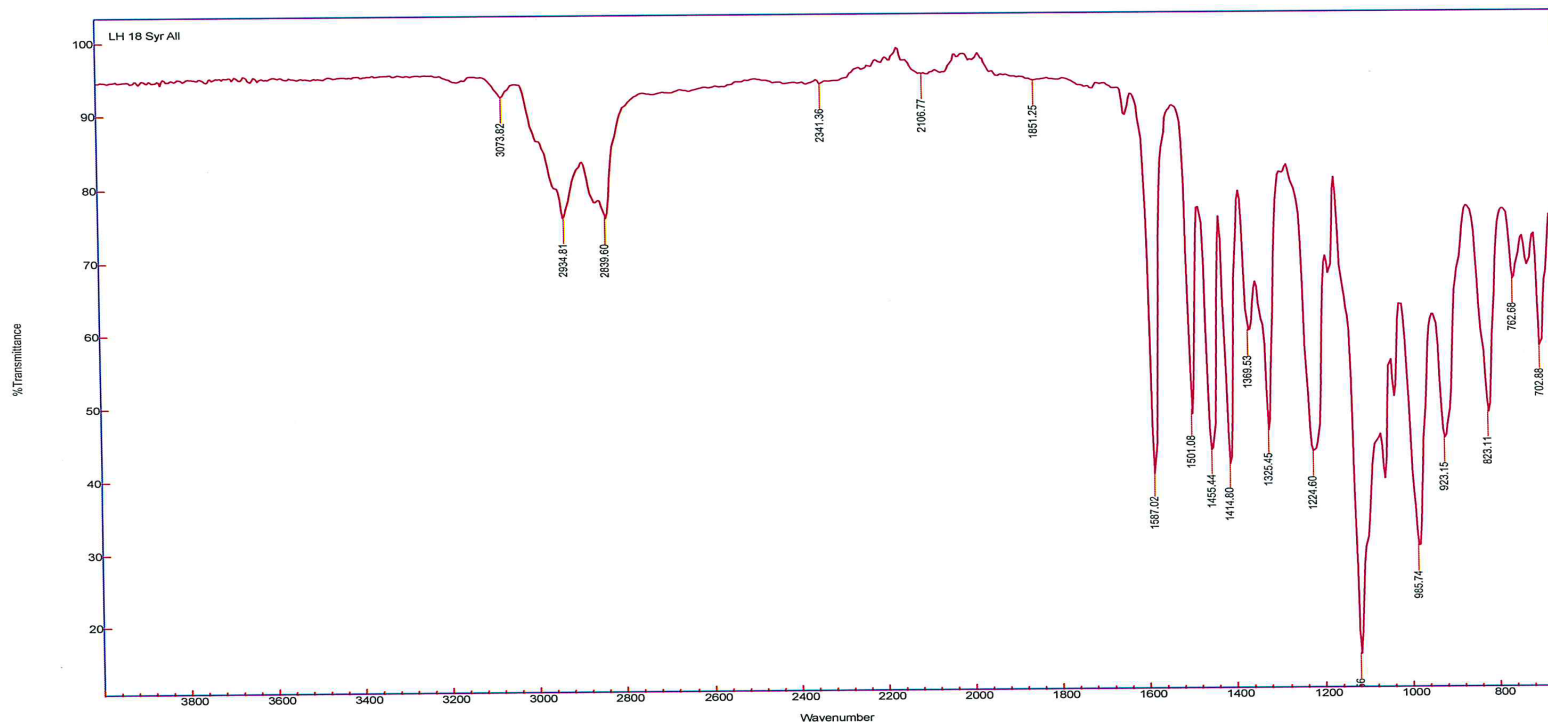
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PLW12    0.12650999 W
PLW13    0.12650999 W

F2 - Processing parameters
SI       32768
SF       75.4853500 MHz
WDW      EM
SSB      0
LB       1.00 Hz
GB       0
PC       1.40

```

FT-IR spectrum of SYR-A//

Agilent Resolutions Pro



Name
LH 18 SyrAll

HRMS spectrum of SYR-A//

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 5.0 PPM / DBE: min = -1.5, max = 50.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

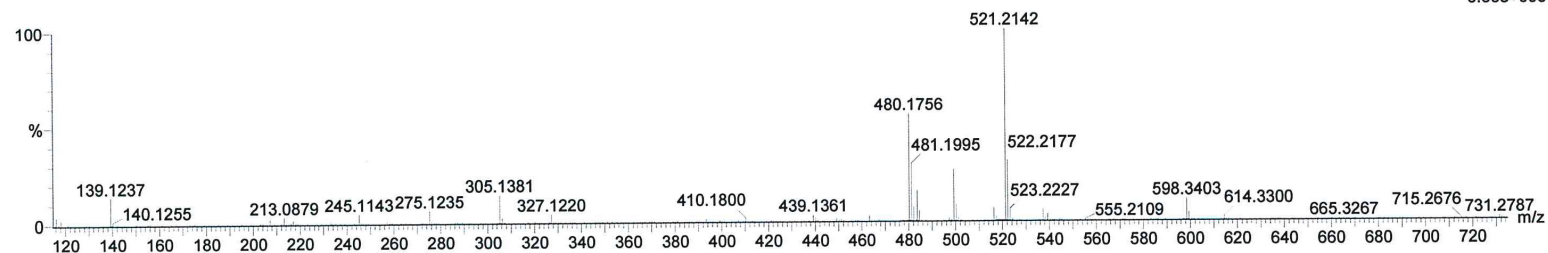
77 formula(e) evaluated with 1 results within limits (up to 50 best isotopic matches for each mass)

Elements Used:

C: 28-28 H: 0-1000 7Li: 0-1 O: 1-10 Na: 0-1 I: 0-1

SYR- ALL

15HR228 21 (0.609) AM (Cen,4, 80.00, Ar,5000.0,1072.25,0.70,LS 20); Sm (SG, 1x1.00); Sb (5,40.00); Cm (20:27)

1: TOF MS ES+
5.86e+003

Minimum: -1.5
Maximum: 5.0 5.0 50.0

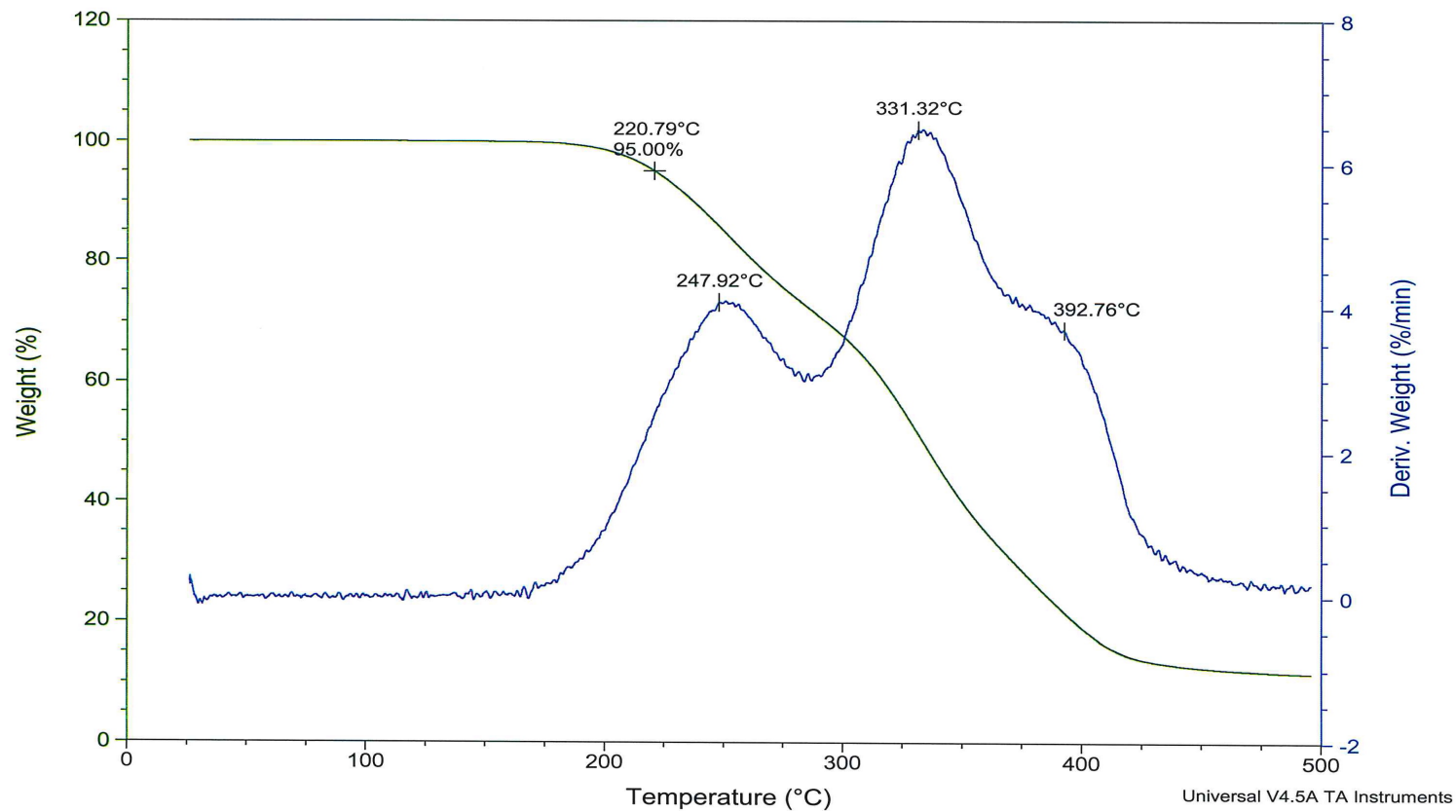
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
521.2142	521.2151	-0.9	-1.7	11.5	2.1	C28 H34 O8 Na

TGA trace of SYR-A//

Sample: LH18
Size: 3.0530 mg
Method: Ramp

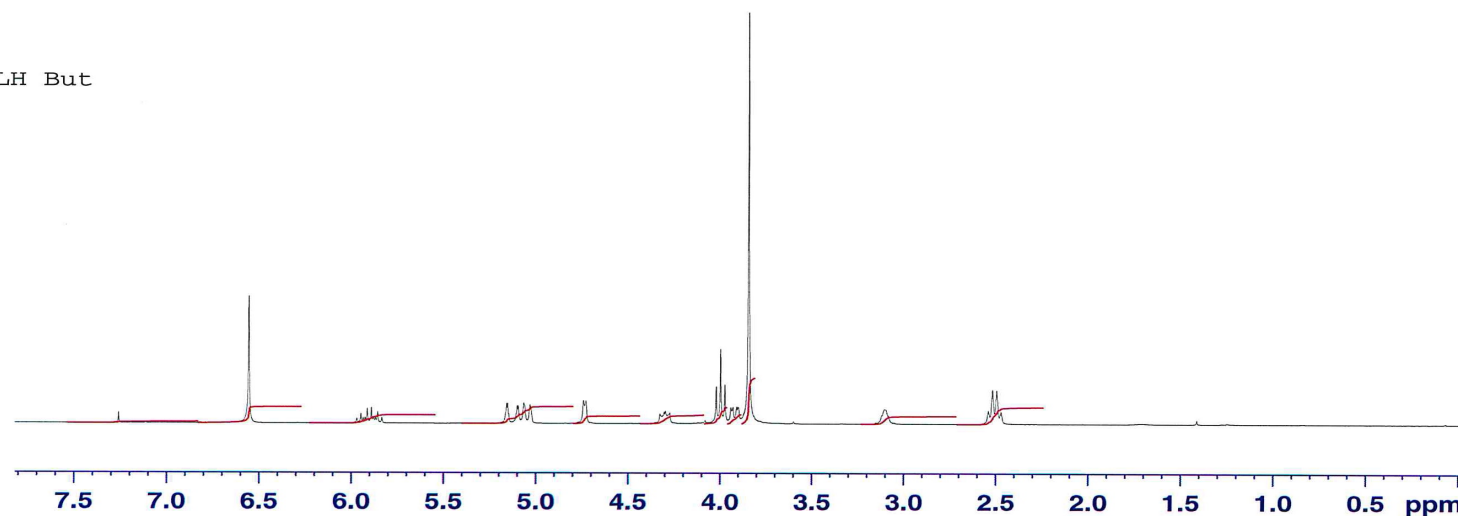
TGA

File: C:\...TGA\2015\Louis Hollande\LH 18.002
Operator: LH
Run Date: 30-Apr-2015 12:37
Instrument: TGA Q500 V20.13 Build 39



¹H NMR spectrum of SYR-But

LH But



```

Current Data Parameters
NAME      LH But
EXPNO    11
PROCNO   1

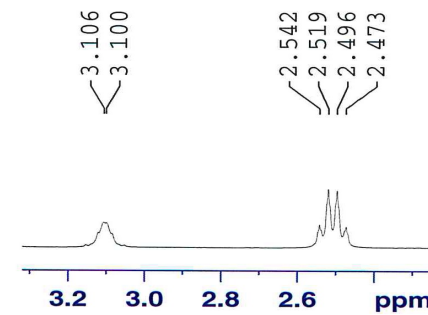
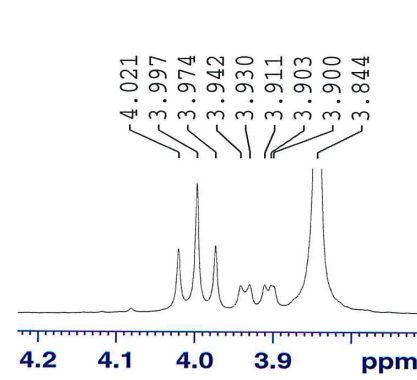
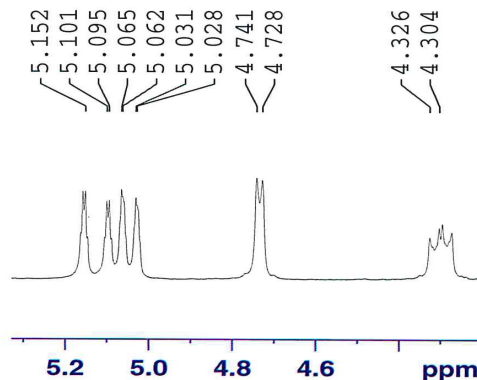
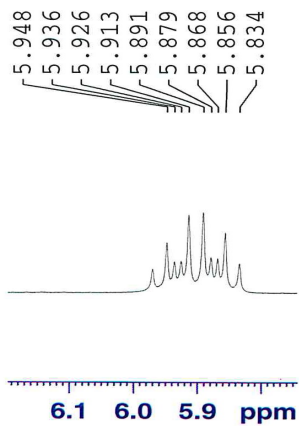
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NS       16
DS       2
SWH      6103.516 Hz
FIDRES   0.093132 Hz
AQ       5.3687091 sec
RG       10.6574
DW       81.920 usec
DE       6.50 usec
TE       298.6 K
D1       1.00000000 sec
TDO      1
  
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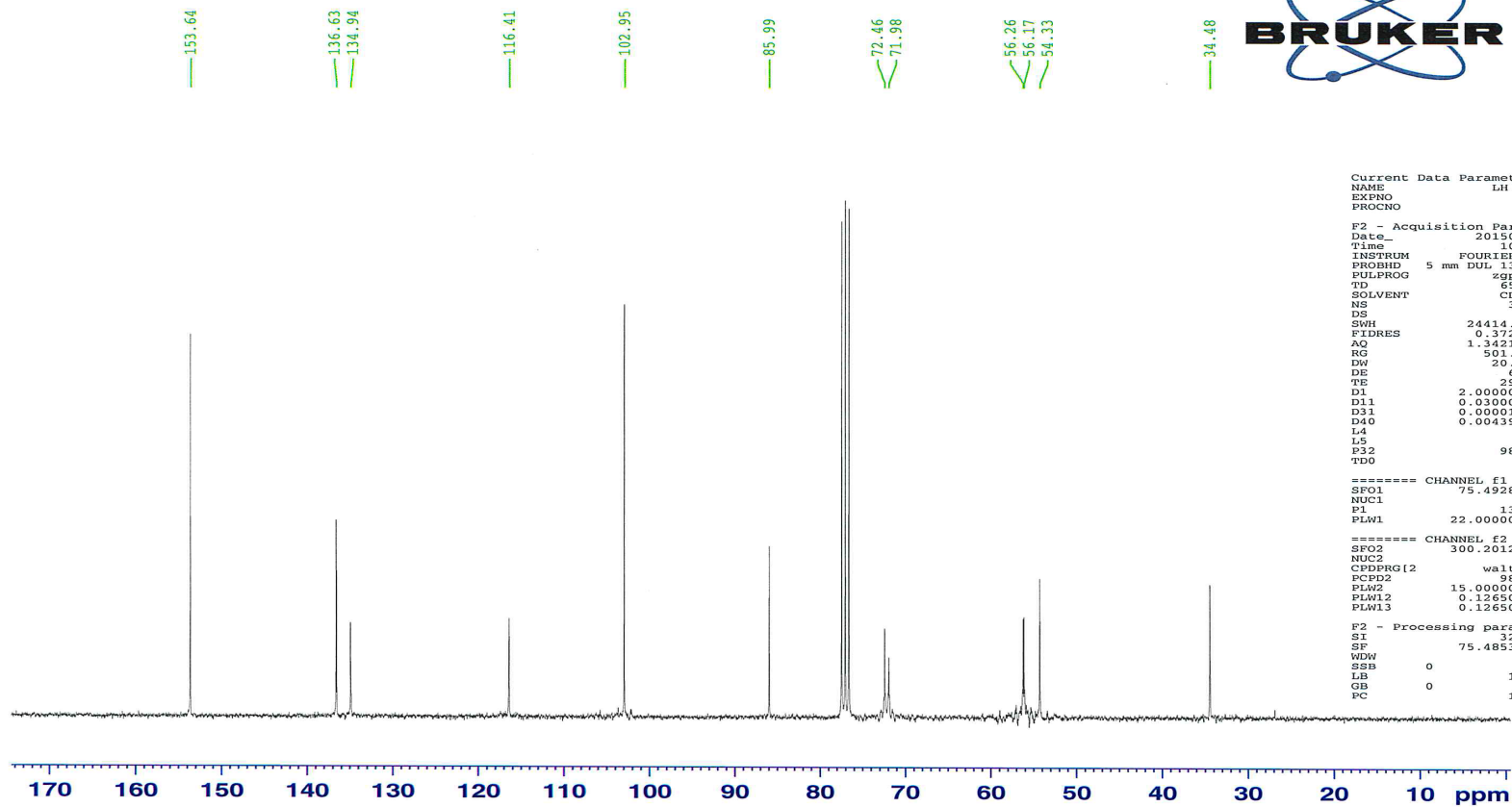
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GB       0
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^{13}C NMR spectrum of SYR-But

LH But



```

Current Data Parameters
NAME          LH But
EXPNO         10
PROCNO        1

F2 - Acquisition Parameters
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Time          19.32
INSTRUM      FOURIER300
PROBHD       5 mm DUL 13C-1
PULPROG      zgpg30
TD           65536
SOLVENT      CDCl3
NS           3024
DS           4
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FIDRES       0.372529 Hz
AQ           1.3421773 sec
RG           501.187
DW           20.480 usec
DE           6.50 usec
TE           298.4 K
D1           2.00000000 sec
D11          0.03000000 sec
D31          0.0001300 sec
D40          0.00439029 sec
L4           37
L5           53
P32          98.00 usec
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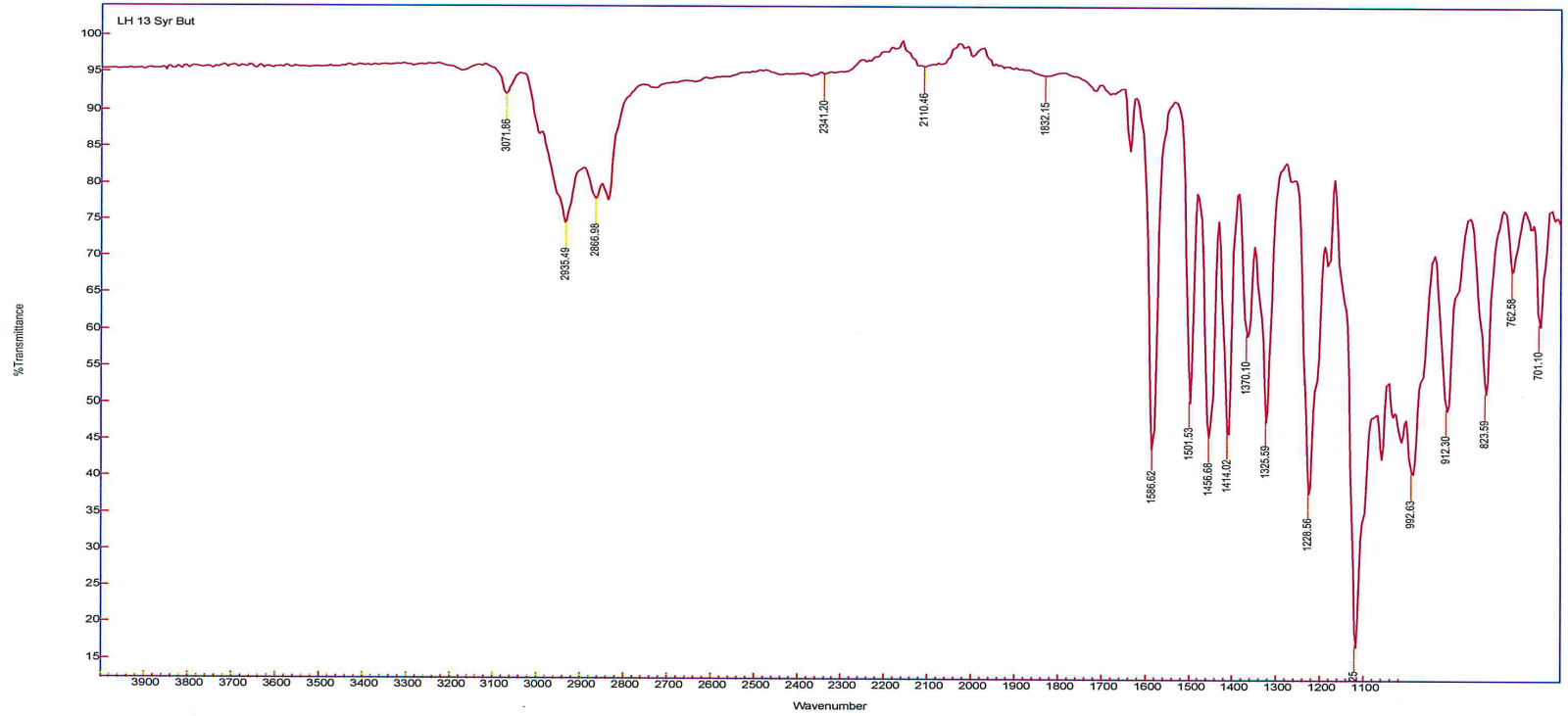
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PLW12        0.12650999 W
PLW13        0.12650999 W

F2 - Processing parameters
SI           32768
SF           75.4853500 MHz
WDW          EM
SSB          0
LB           1.00 Hz
GB           0
PC           1.40

```

FT-IR spectrum of SYR-But

Agilent Resolutions Pro



Name
LH 13 Syr But

HRMS spectrum of SYR-But

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 5.0 mDa / DBE: min = -1.5, max = 50.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

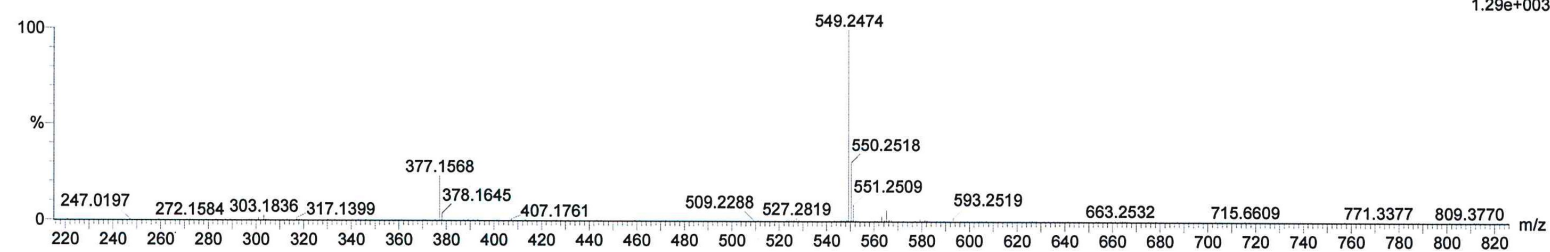
158 formula(e) evaluated with 1 results within limits (up to 50 best isotopic matches for each mass)

Elements Used:

C: 30-30 H: 0-1000 7Li: 0-1 O: 1-20 Na: 0-1 I: 0-1

SYR BUT

15HR201 63 (2.029) AM (Cen,4, 80.00, Ar,5000.0,922.36,0.70,LS 20); Sm (SG, 1x1.00); Sb (5,40.00); Cm (62:65)

1: TOF MS ES+
1.29e+003

Minimum: -1.5
Maximum: 5.0 10.0 50.0

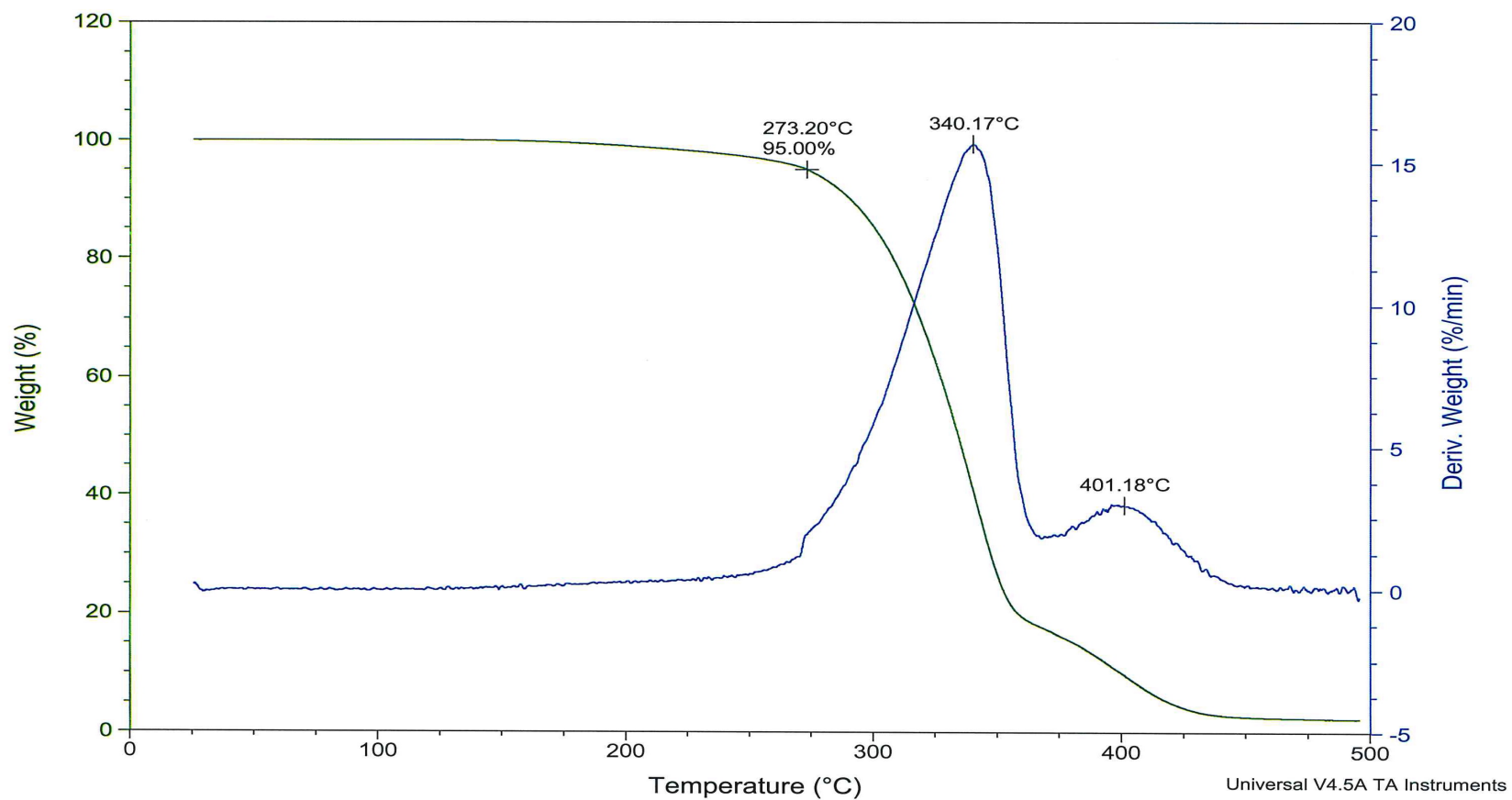
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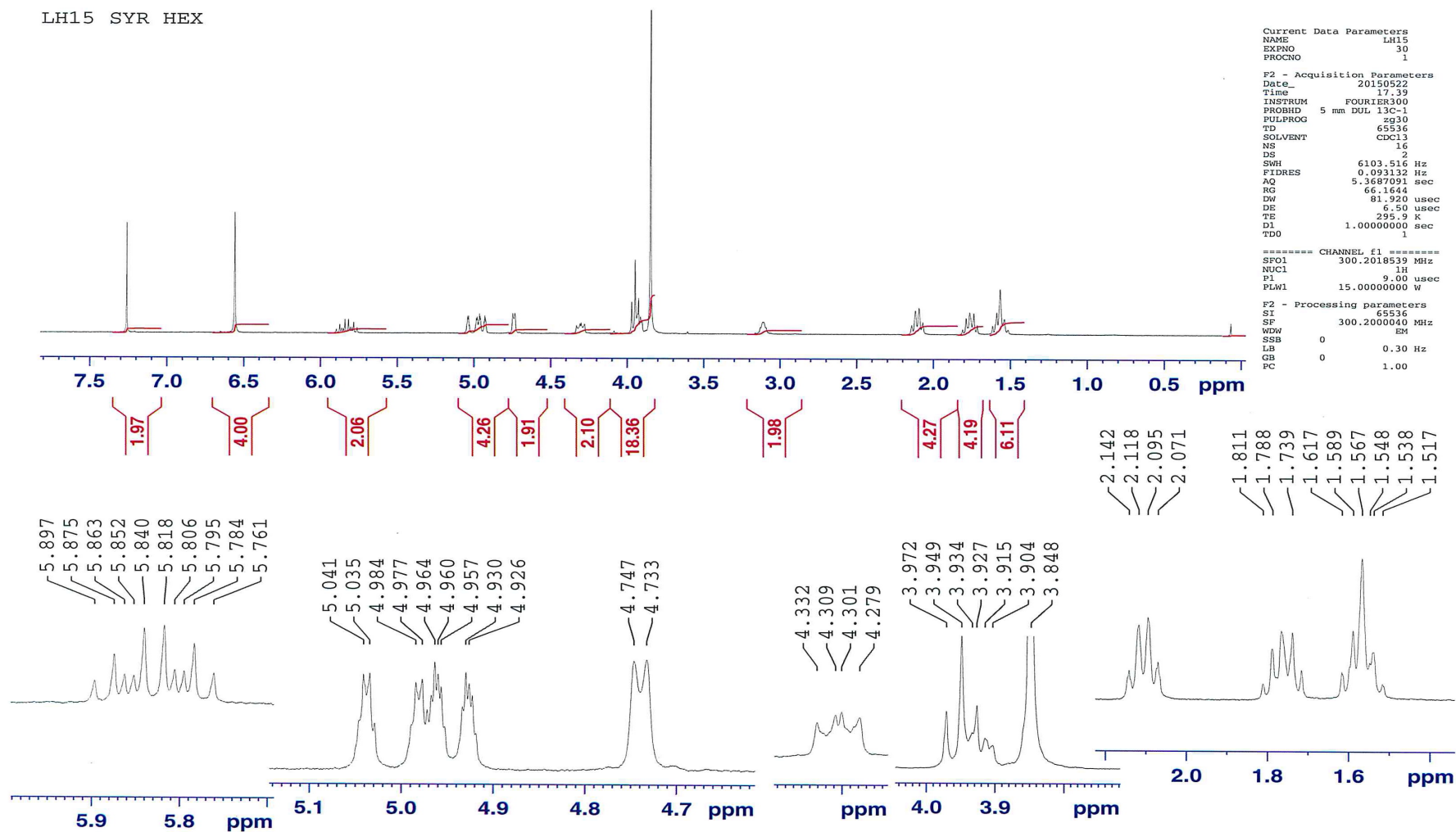
TGA trace of SYR-But

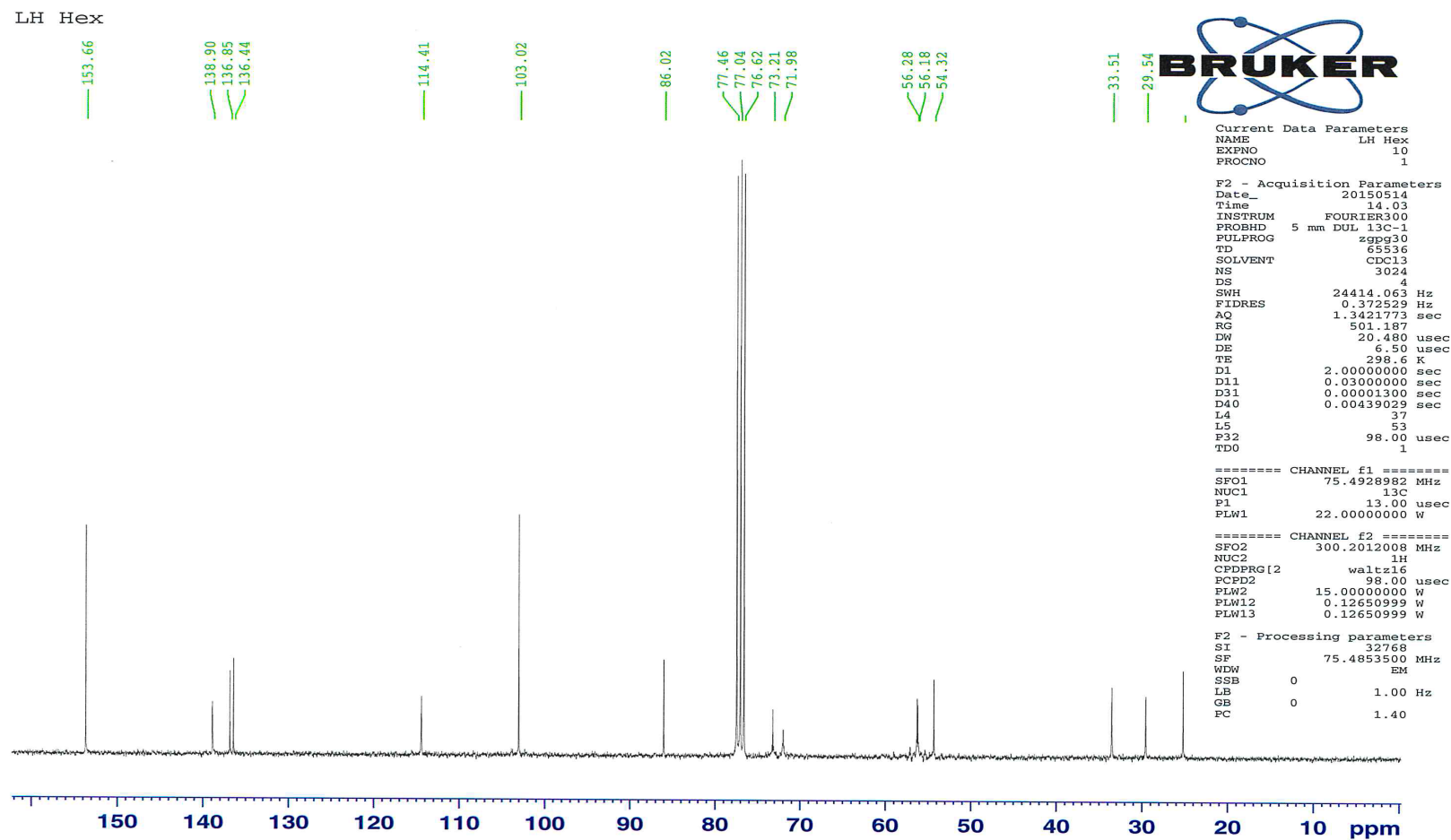
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Size: 3.0800 mg
Method: Ramp

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Run Date: 30-Apr-2015 13:52
Instrument: TGA Q500 V20.13 Build 39

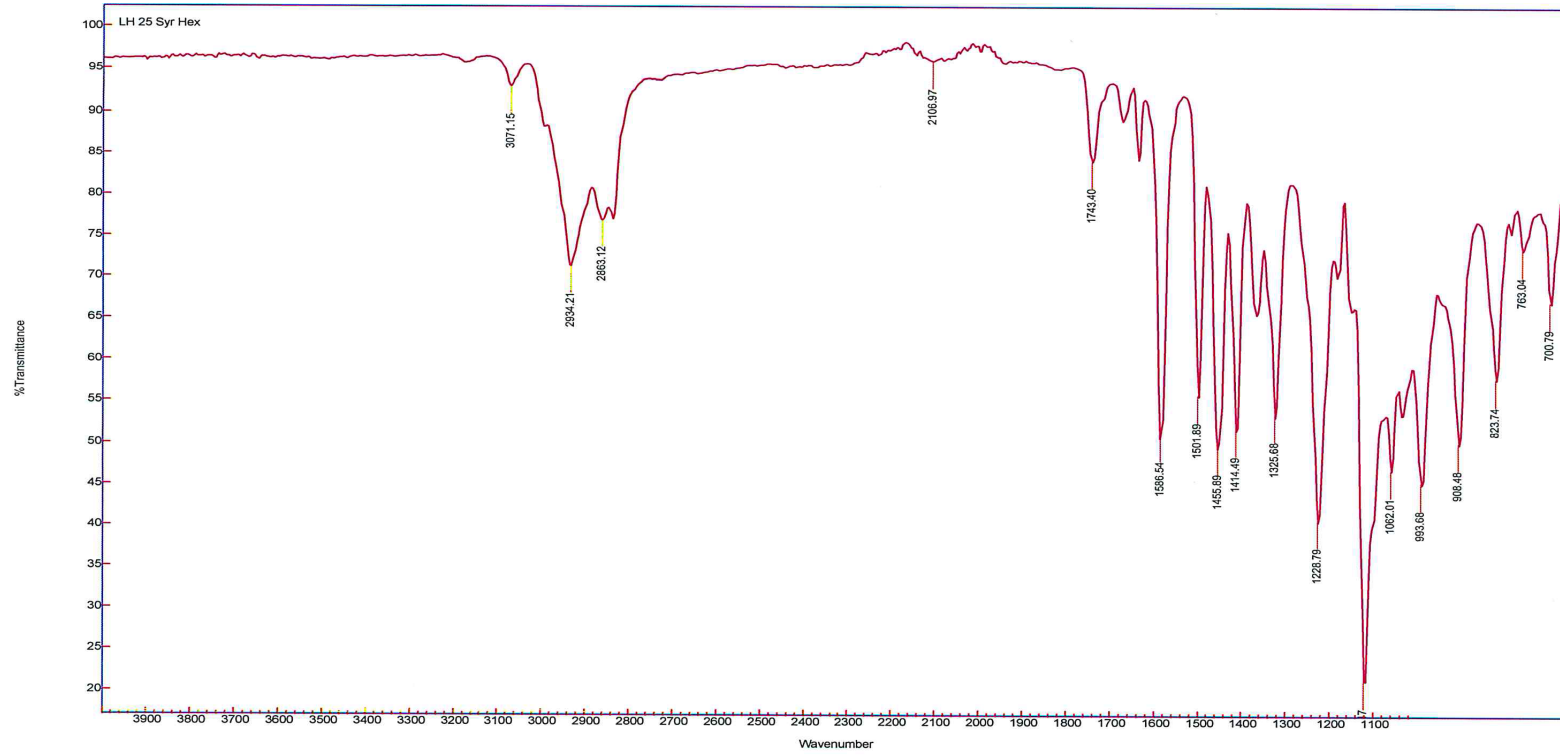


¹H NMR spectrum of SYR-Hex

^{13}C NMR spectrum of SYR-Hex

FT-IR spectrum of SYR-Hex

Agilent Resolutions Pro



Name
LH 25 Syr Hex ———

HRMS spectrum of SYR-Hex

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 5.0 mDa / DBE: min = -1.5, max = 50.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

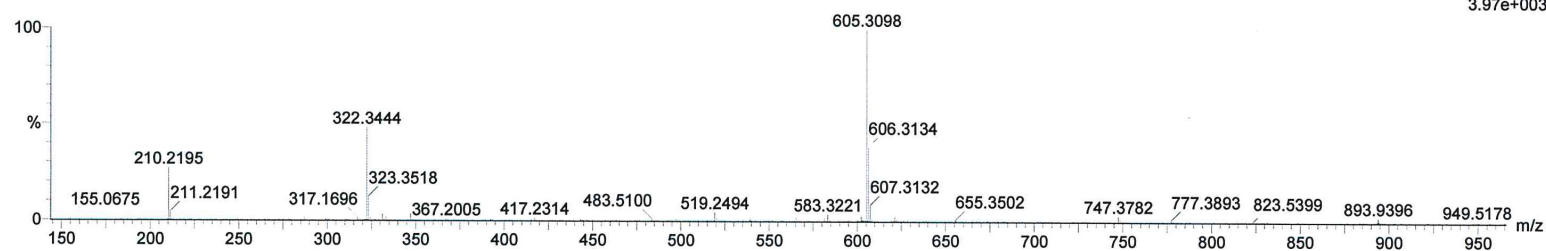
158 formula(e) evaluated with 1 results within limits (up to 50 best isotopic matches for each mass)

Elements Used:

C: 34-34 H: 0-1000 7Li: 0-1 O: 1-20 Na: 0-1 I: 0-1

SYR_HEX

15HR202 181 (5.885) AM (Cen,4, 80.00, Ar,5000.0,772.46,0.70,LS 20); Sm (SG, 1x1.00); Sb (5,40.00); Cm (165:185)

1: TOF MS ES+
3.97e+003

Minimum: -1.5
Maximum: 5.0 10.0 50.0

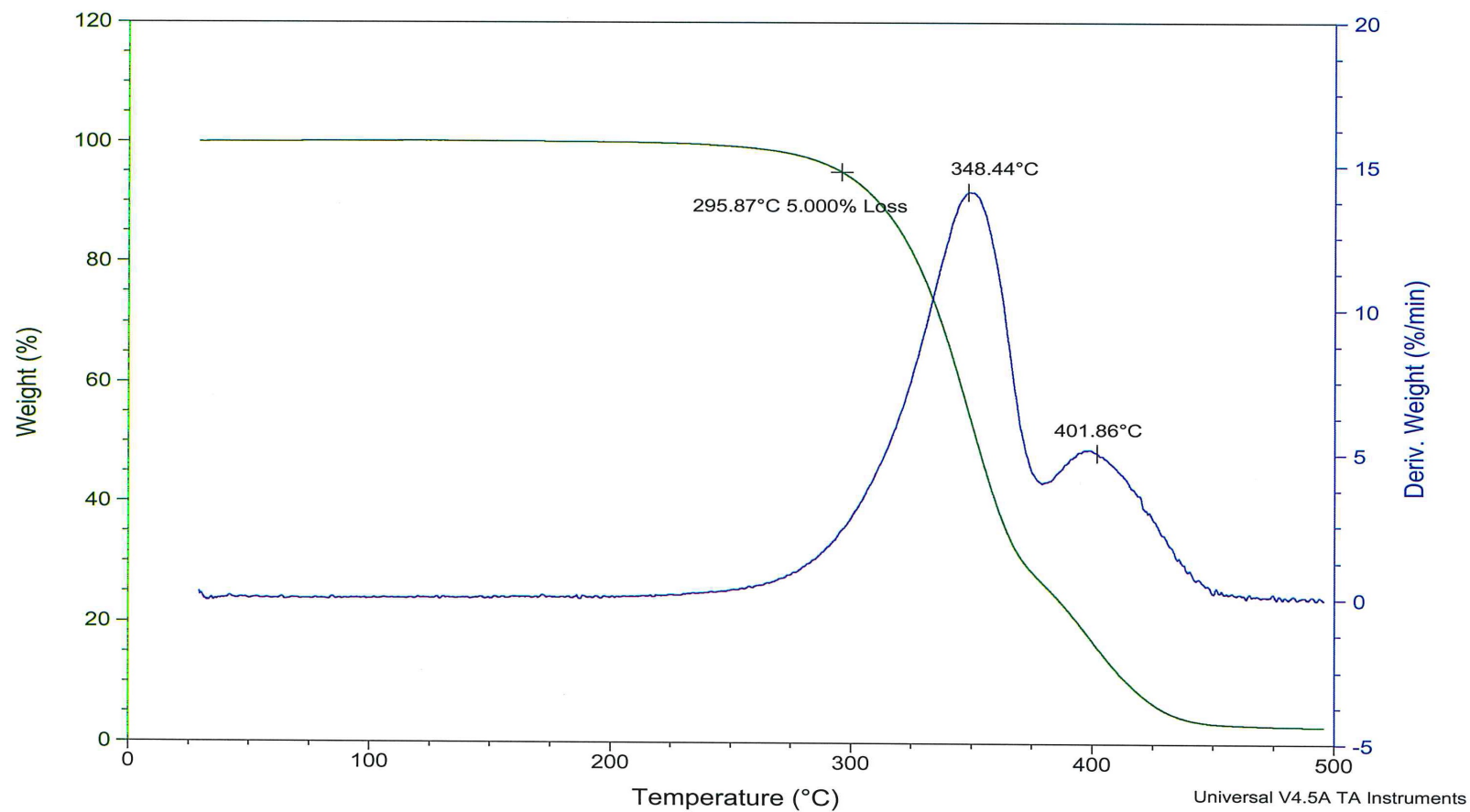
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
605.3098	605.3090	0.8	1.3	11.5	0.8	C34 H46 O8 Na

TGA trace of SYR-Hex

Sample: LH25
Size: 2.9160 mg
Method: Ramp

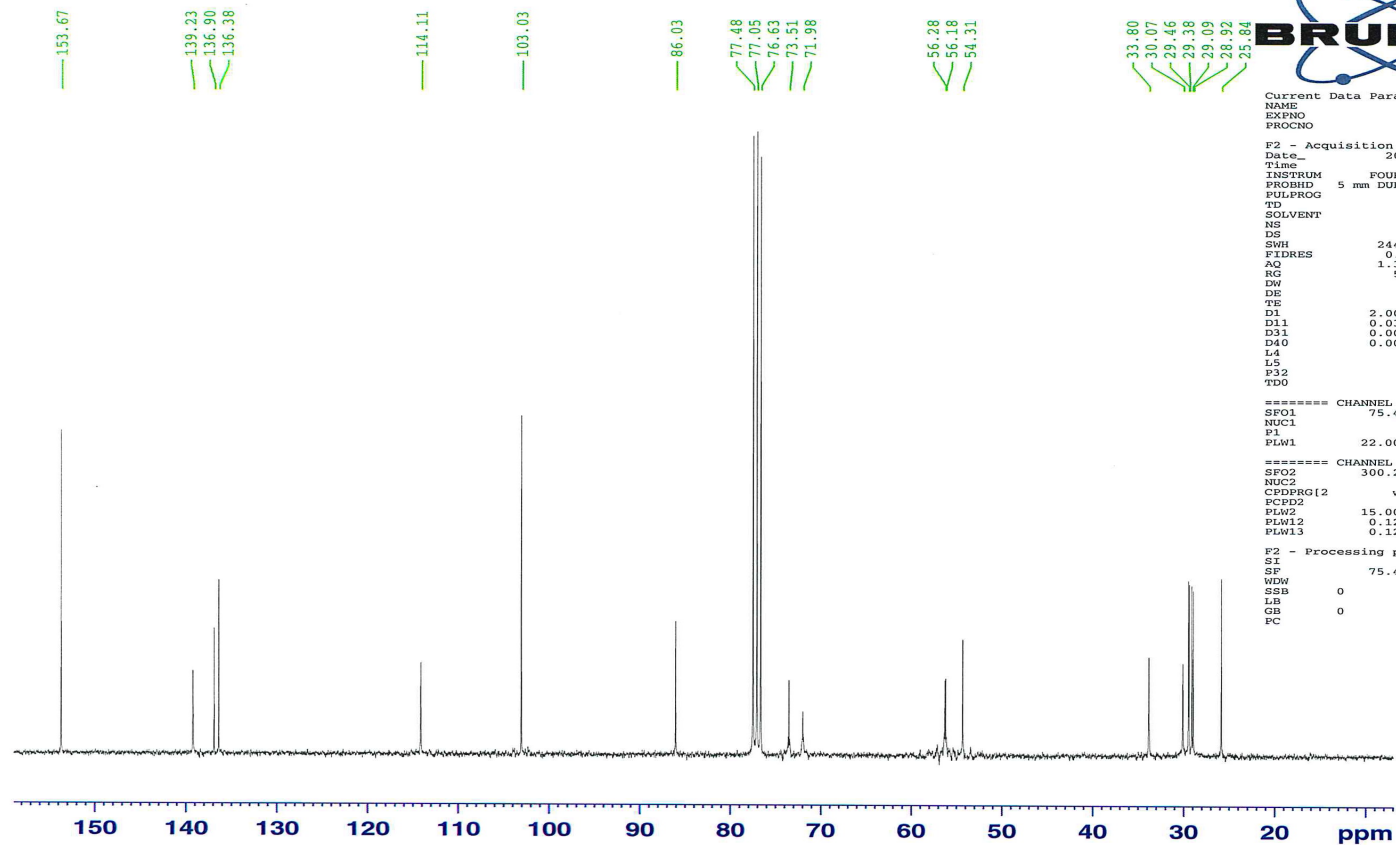
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Operator: LH
Run Date: 30-Apr-2015 17:35
Instrument: TGA Q500 V20.13 Build 39



¹³C NMR spectrum of SYR-Dec

LH Dec



```

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EXPNO     10
PROCNO    1

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FIDRES     0.372529 Hz
AQ         1.3421773 sec
RG         501.187
DW         20.480 usec
DE         6.50 usec
TE         298.8 K
D1         2.0000000 sec
D11        0.0300000 sec
D31        0.0001300 sec
D40        0.00439029 sec
L4         37
L5         53
P32        98.00 usec
TD0        1

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P1         13.00 usec
PLW1       22.0000000 W

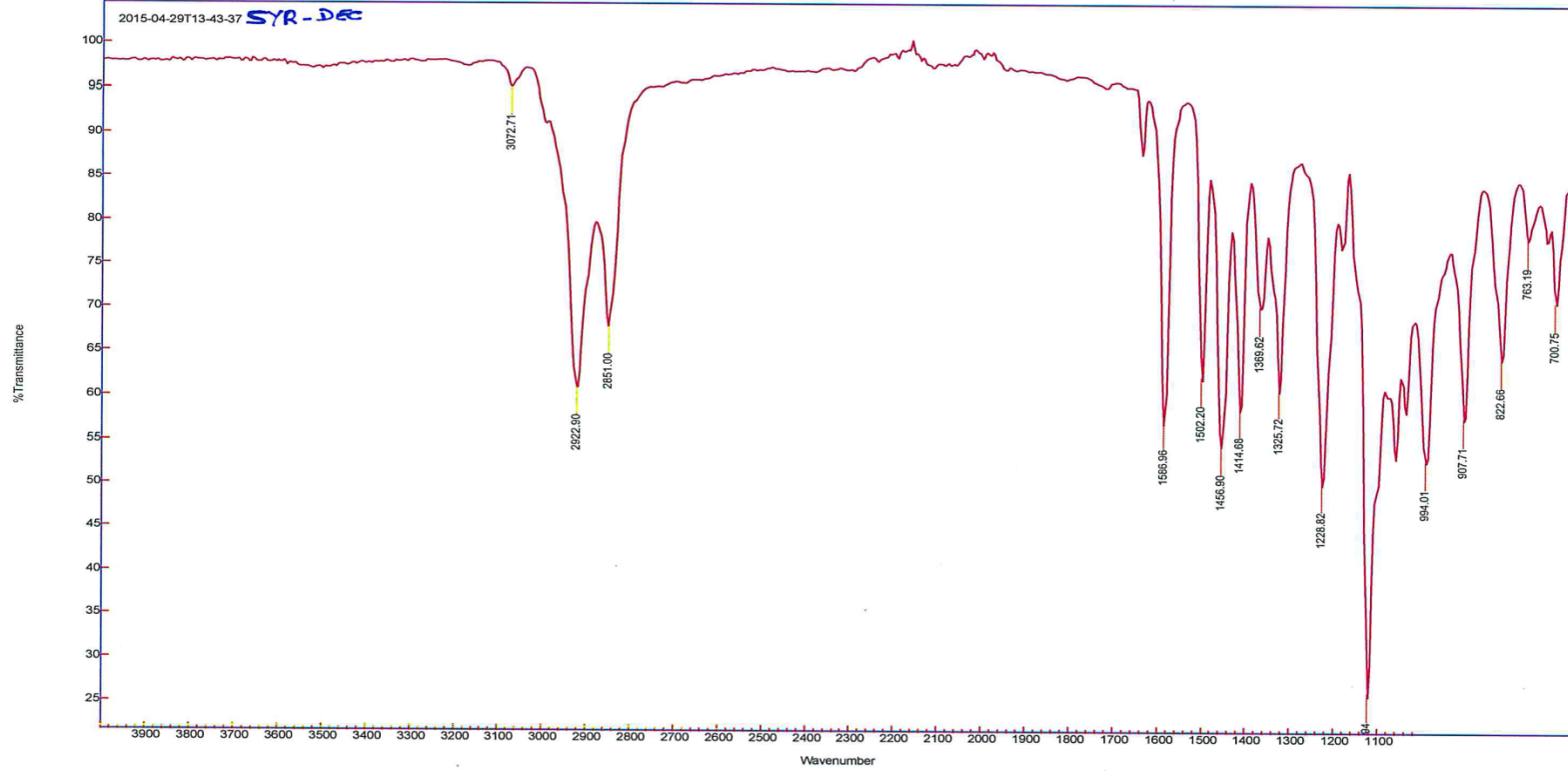
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PCPD2      98.00 usec
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PLW12      0.12650999 W
PLW13      0.12650999 W

F2 - Processing parameters
SI         32768
SF         75.4853500 MHz
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SSB        0
LB         1.00 Hz
GB         0
PC         1.40

```

FT-IR spectrum of SYR-Dec

Agilent Resolutions Pro



Name
2015-04-29T13-43-37

HRMS spectrum of SYR-Dec

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 5.0 PPM / DBE: min = -1.5, max = 50.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

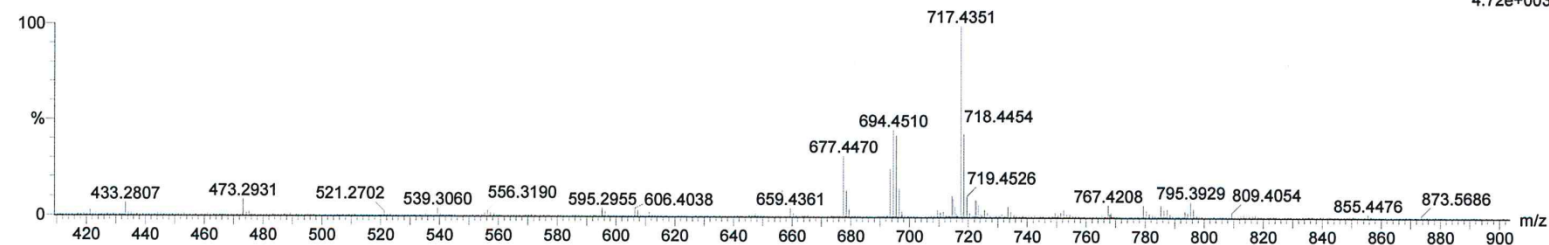
80 formula(e) evaluated with 1 results within limits (up to 50 best isotopic matches for each mass)

Elements Used:

C: 42-42 H: 0-1000 7Li: 0-1 O: 1-10 Na: 0-1 I: 0-1

SYR-DEC

15HR225 132 (3.973) AM (Cen,4, 80.00, Ar,5000.0,1072.25,0.70,LS 20); Sm (SG, 1x1.00); Sb (5,40.00); Cm (132:133)

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4.72e+003

Minimum:

Maximum: 5.0 5.0 -1.5

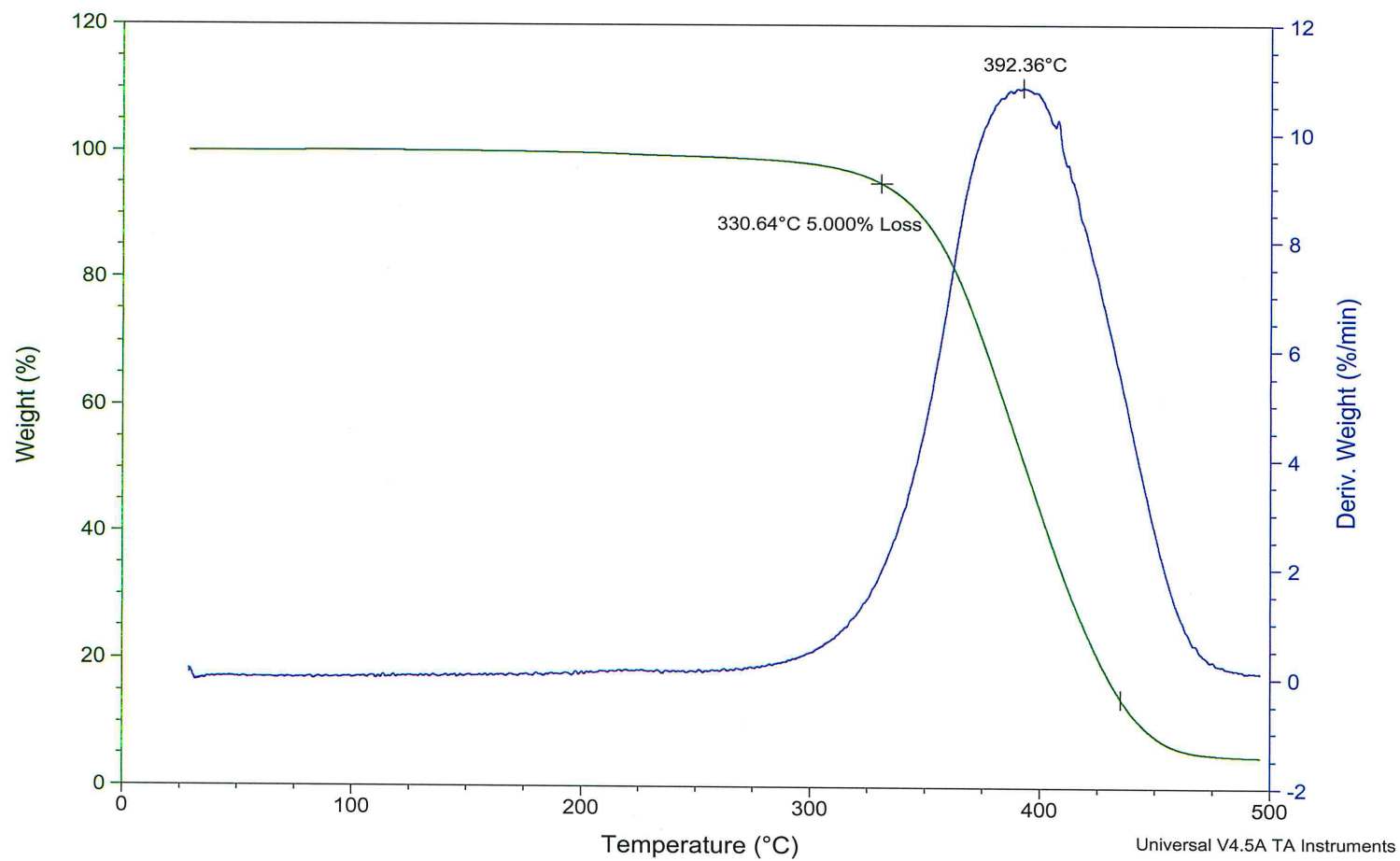
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
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TGA trace of SYR-Dec

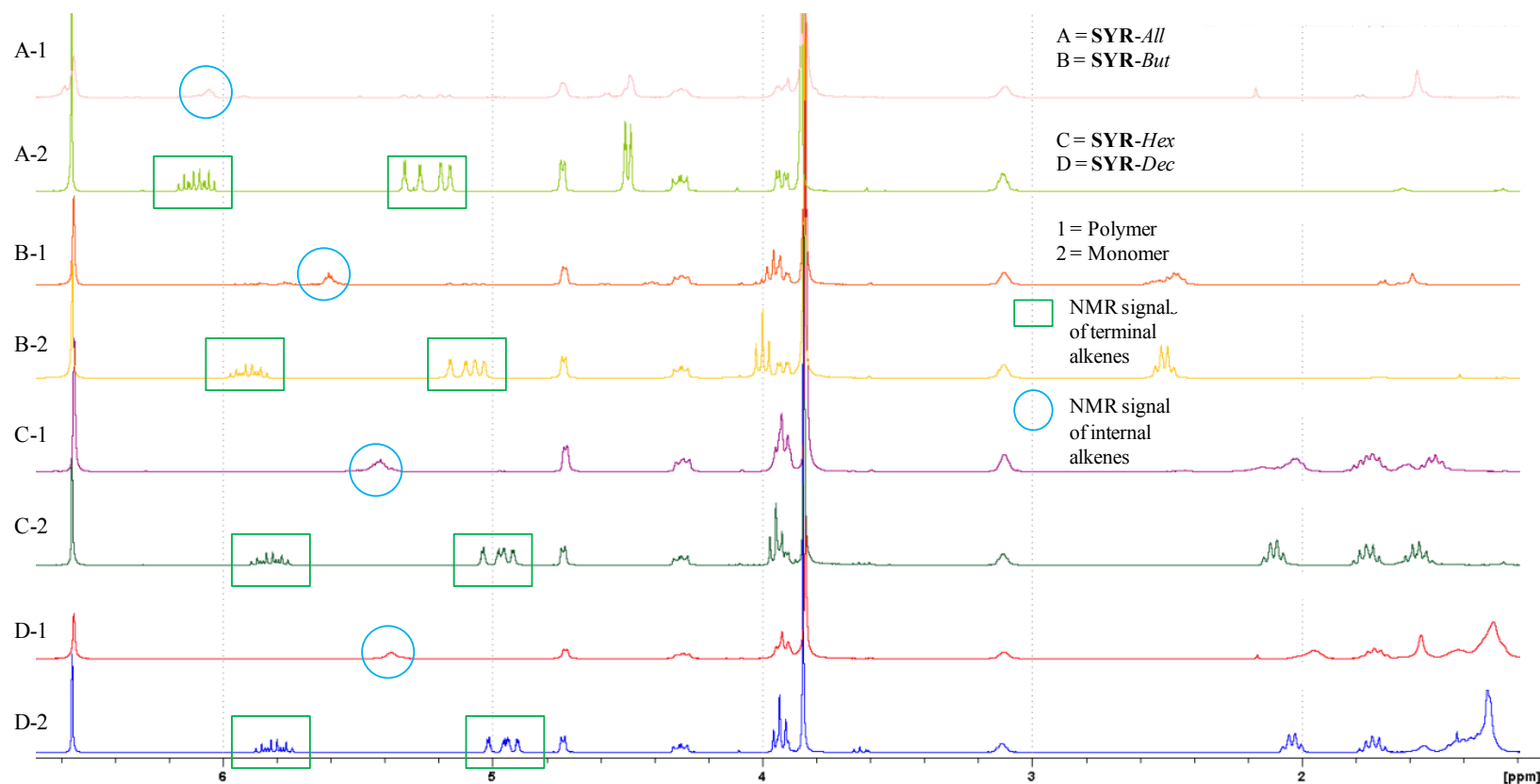
Sample: LH26
Size: 4.4090 mg
Method: Ramp

TGA

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Operator: LH
Run Date: 30-Apr-2015 18:49
Instrument: TGA Q500 V20.13 Build 39

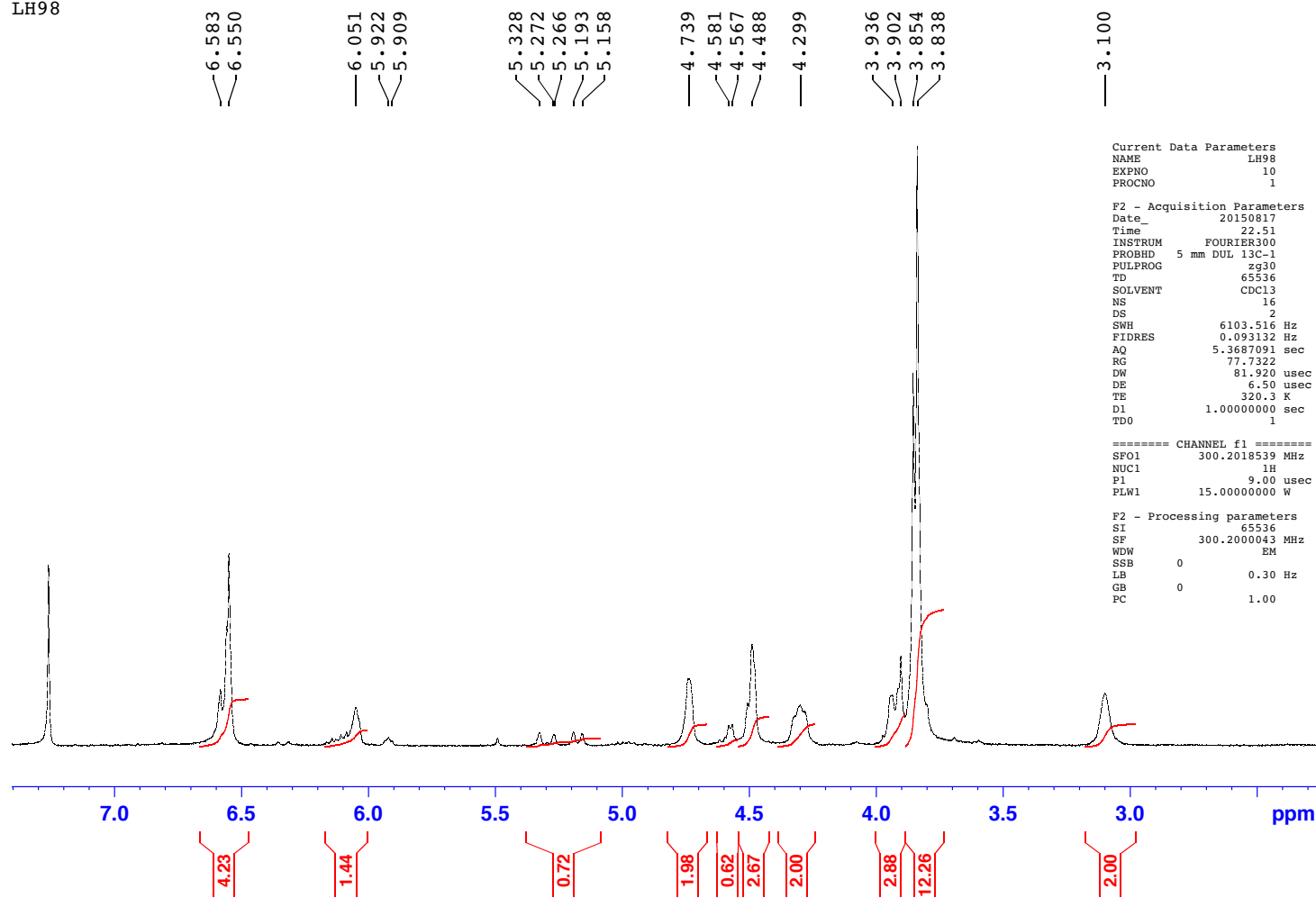


¹H NMR monitoring of ADMET of SYR-*All* (A), SYR-*But* (B), SYR-*Hex* (C), SYR-*Dec* (D) in mass



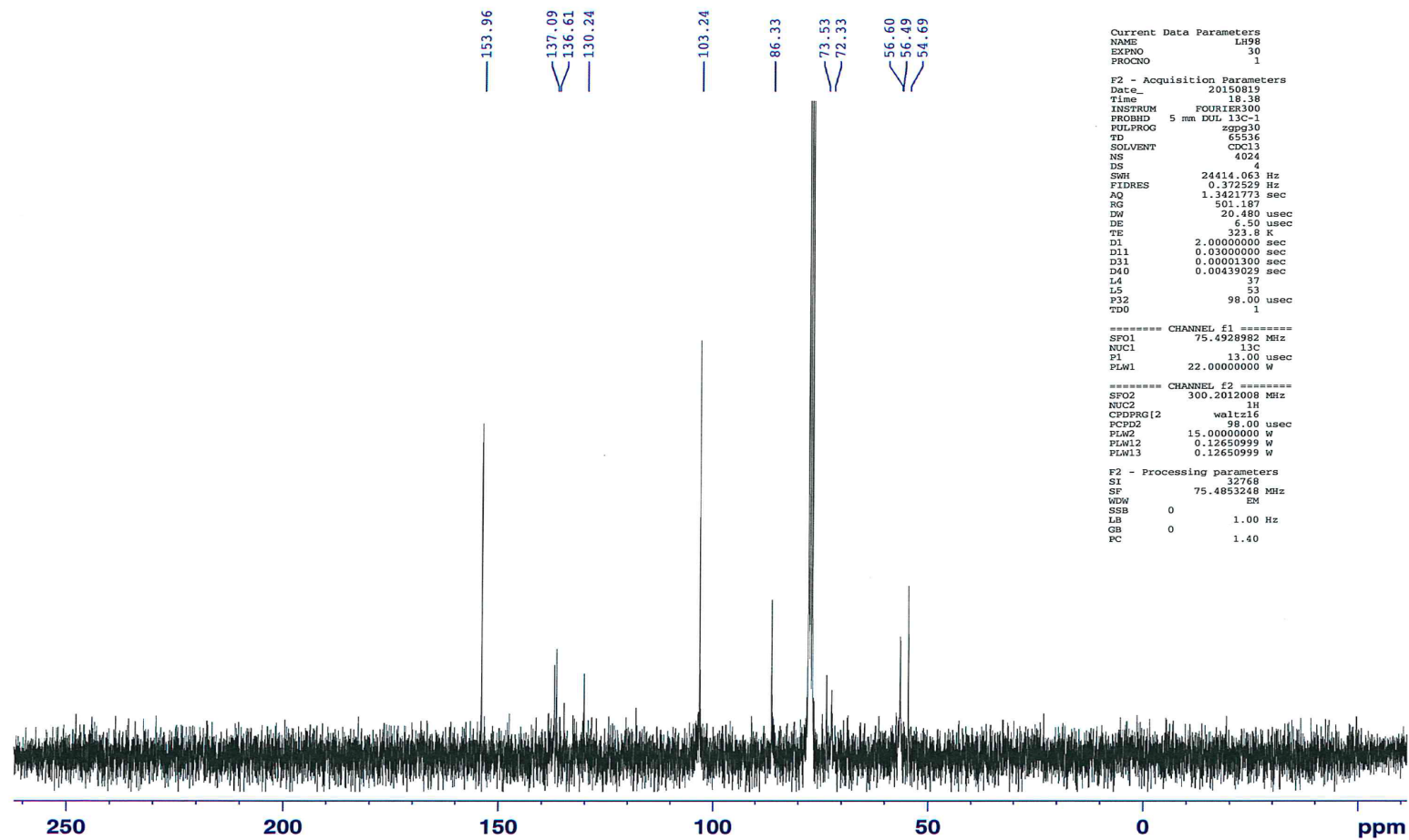
¹H NMR spectrum of P1

LH98



^{13}C NRM spectrum of P1

LH98



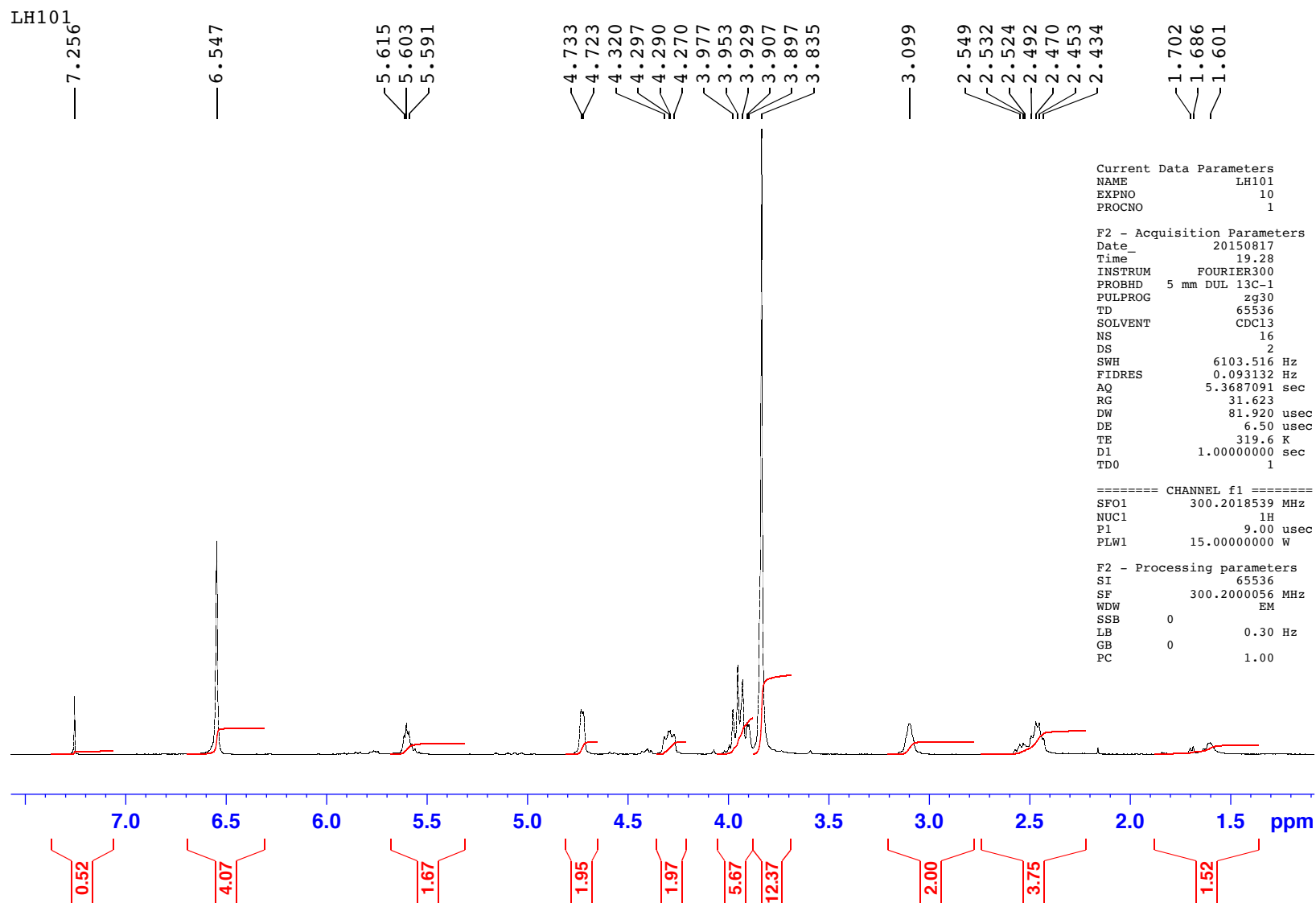
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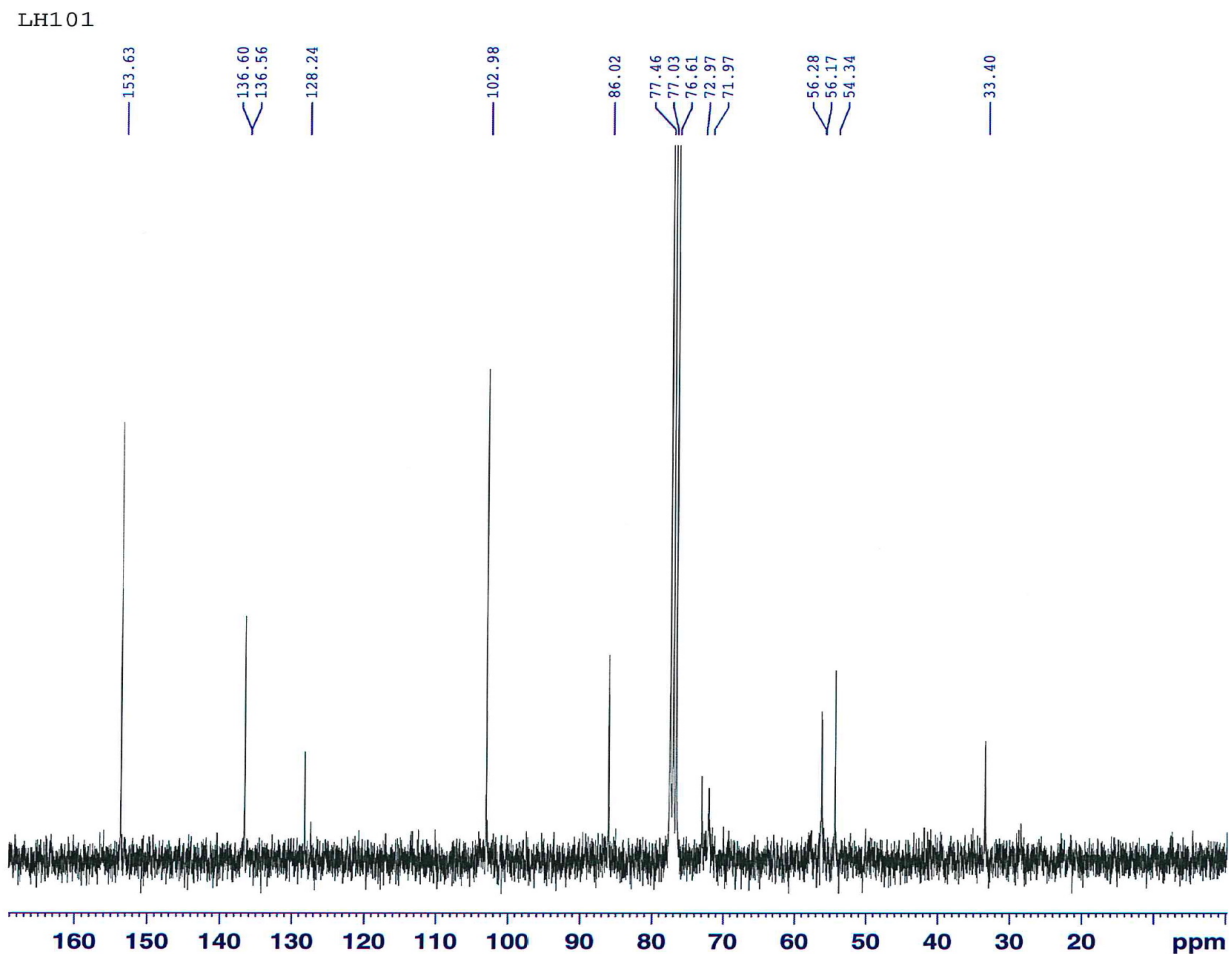
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FIDRES     0.372529 Hz
AQ         1.3421773 sec
RG         501.187
DW         20.480 usec
DE         6.50 usec
TE         323.8 K
D1         2.0000000 sec
D11        0.0300000 sec
D31        0.00001300 sec
D40        0.00439029 sec
L4         37
L5         53
P12        98.00 usec
TDO        1

===== CHANNEL F1 =====
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NUC1      13C
P1        13.00 usec
PLW1      22.0000000 W

===== CHANNEL F2 =====
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PLW13     0.12650999 W

F2 - Processing parameters
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WDW       EM
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GB        0
PC        1.40
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¹H NMR spectrum of P2

^{13}C NRM spectrum of P2

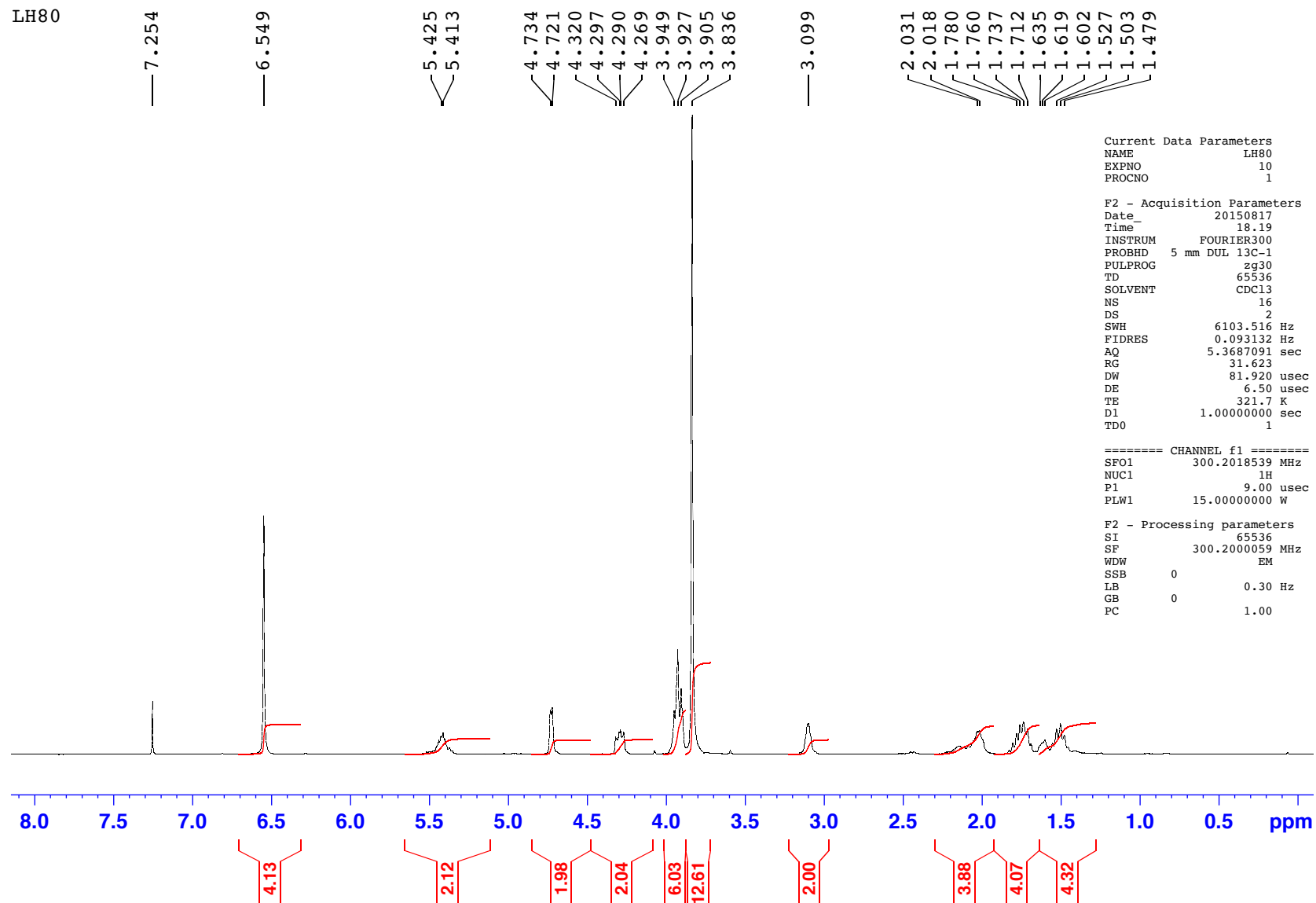
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 PROCNO 1

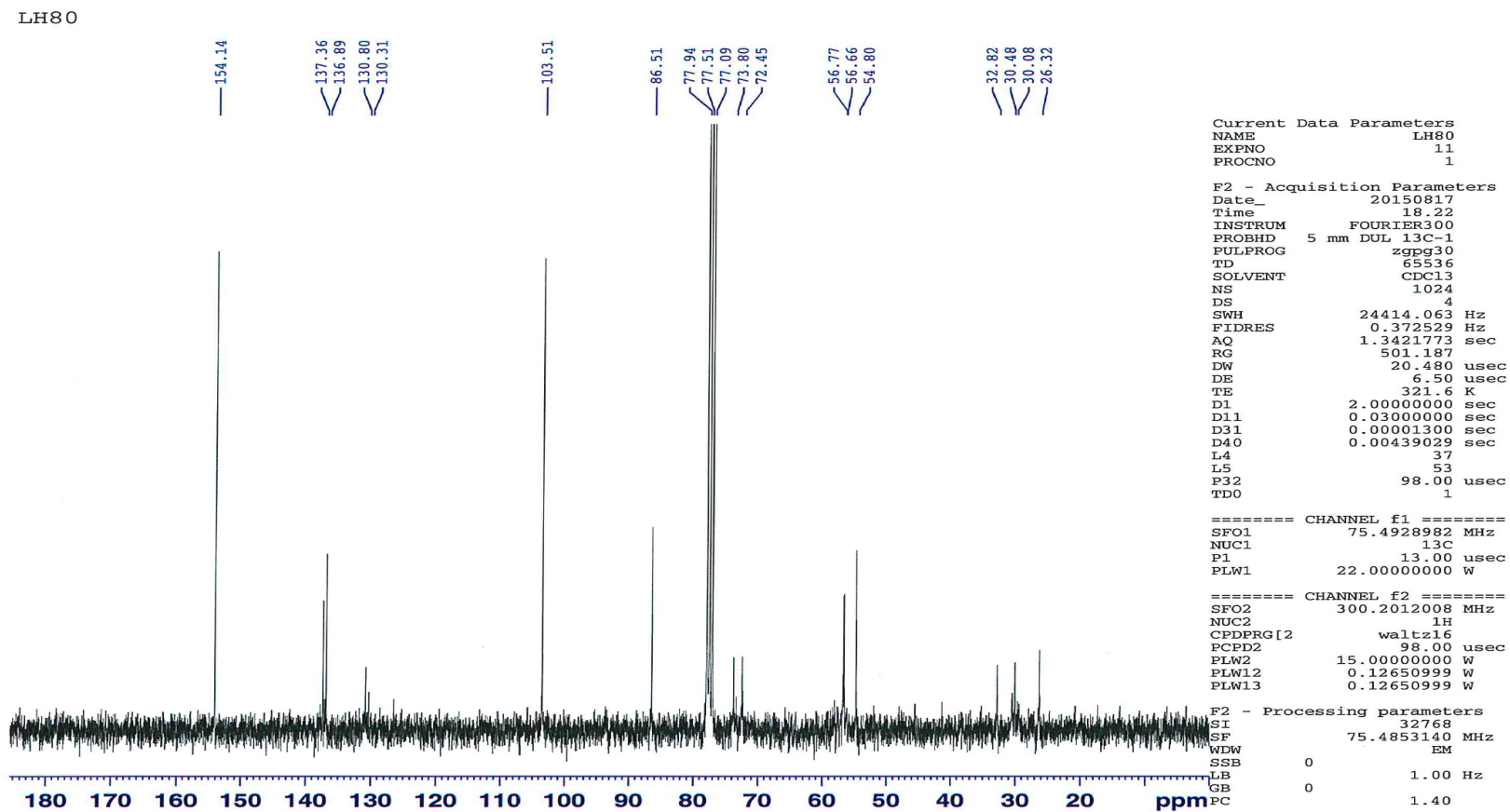
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 DS 4
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 AQ 1.3421773 sec
 RG 501.187
 DW 20.480 usec
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 TE 320.1 K
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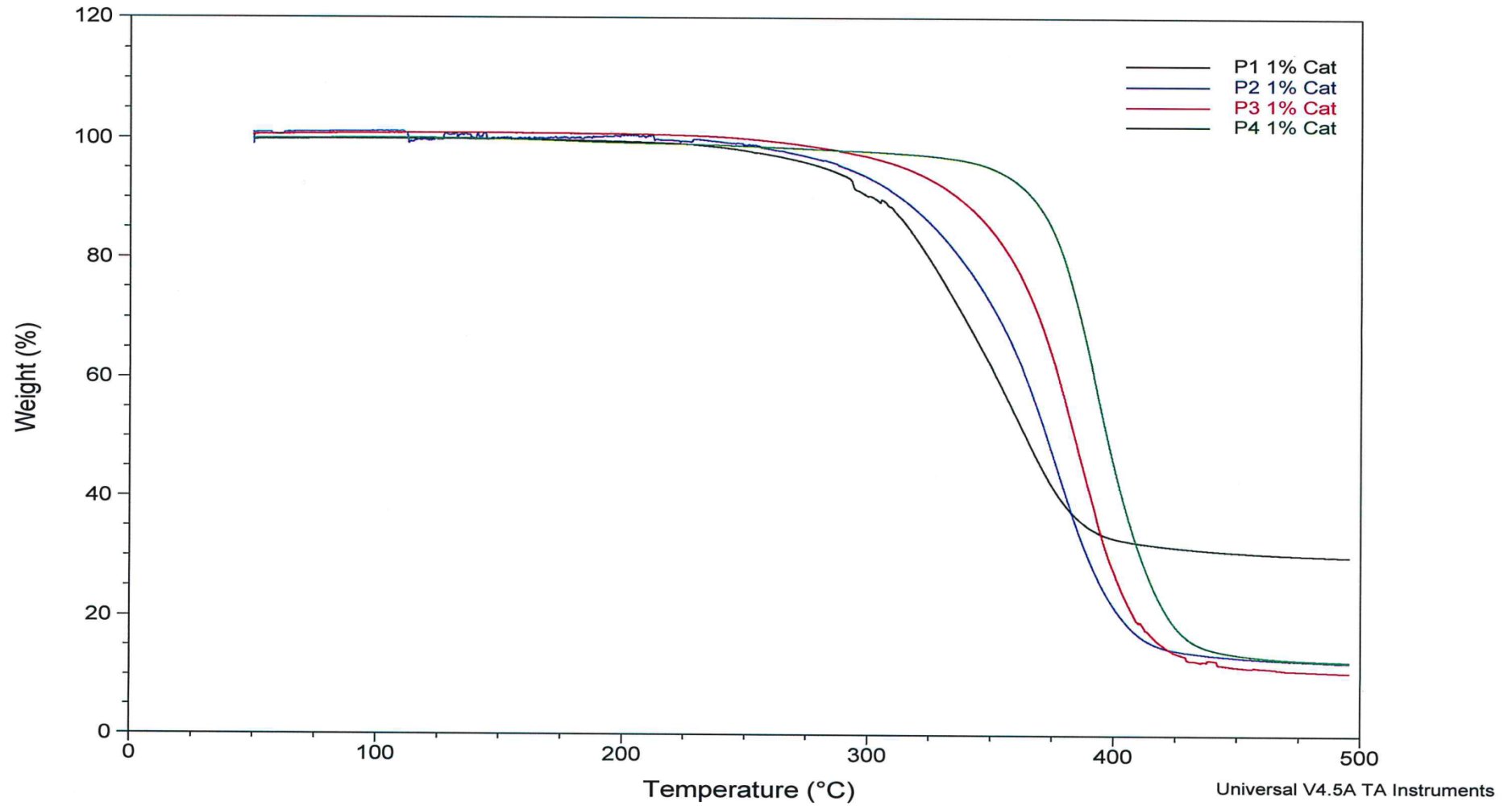
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 PLW2 15.00000000 W
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 PLW13 0.12650999 W

F2 - Processing parameters
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 SF 75.4853500 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

^1H NMR spectrum of P3

^{13}C NRM spectrum of P3

TGA analyses for polymers P1, P2, P3, and P4 (Under nitrogen, 10 °C.min⁻¹)



DSC analyses of P1, P2, P3 and P4 (2nd heating cycle) (Under nitrogen, 10 °C.min⁻¹)

