

Supporting Information

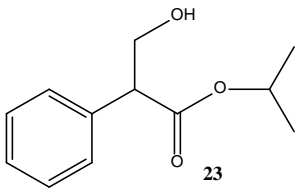
Green and efficient esterification method using dried Dowex H⁺/NaI approach

Petri A. Turhanen*, Jukka Leppänen and Jouko J. Vepsäläinen

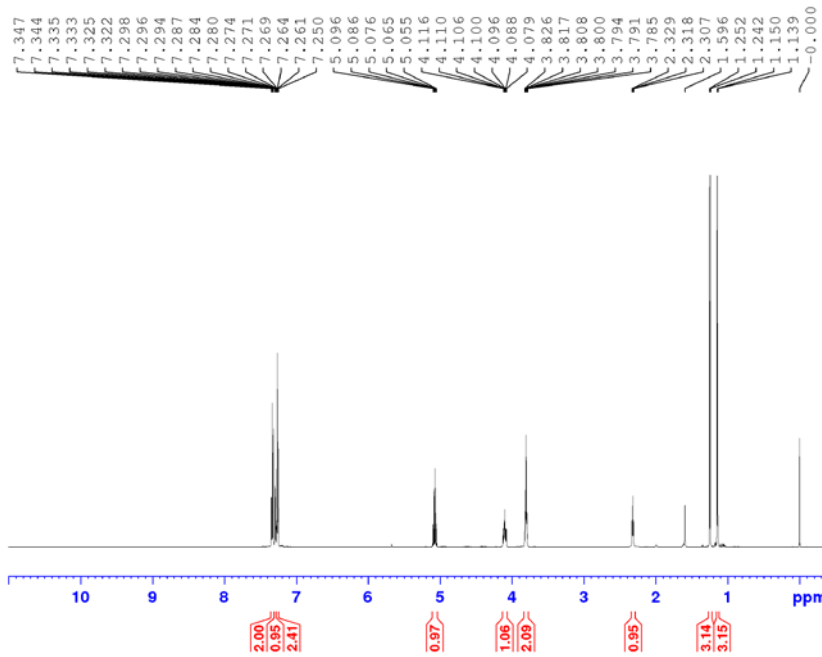
University of Eastern Finland, School of Pharmacy, Biocenter Kuopio, P.O. Box 1627, FIN-70211, Kuopio, Finland. E-mail: petri.turhanen@uef.fi

Table of Contents

¹H and ¹³C NMR spectra of compound 23	S2
¹H and ¹³C NMR spectra of compound 39	S3
¹H and ¹³C NMR spectra of compound 42	S4
¹H and ¹³C NMR spectra of compound 47	S5
¹H NMR spectra of resin acids (50) separation	S6-7
¹H NMR spectra of other isolated compounds, starting from 22	S8



1H_quick CDCl3 {C:\NMRData} nmr {1 E7 - 153}

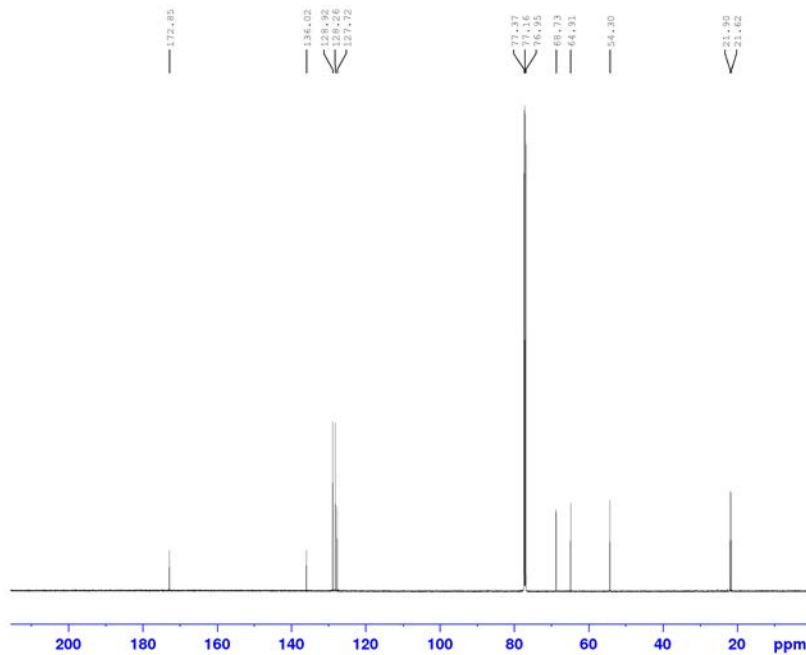


Current Data Parameters
 NAME PTMS-150118-3 rf. 0.86
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20180118
 Time 17.28 h
 INSTRUM spect
 PROBHD Z156457_0001 (4
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 69.21
 SW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDO 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLW1 21.23600006 W

F2 - Processing parameters
 SI 524288
 SF 600.1800144 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 FC 1.00

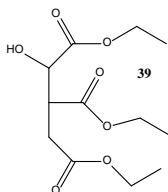
13C_quick CDCl3 {C:\NMRData} nmr {1 E7 - 153}



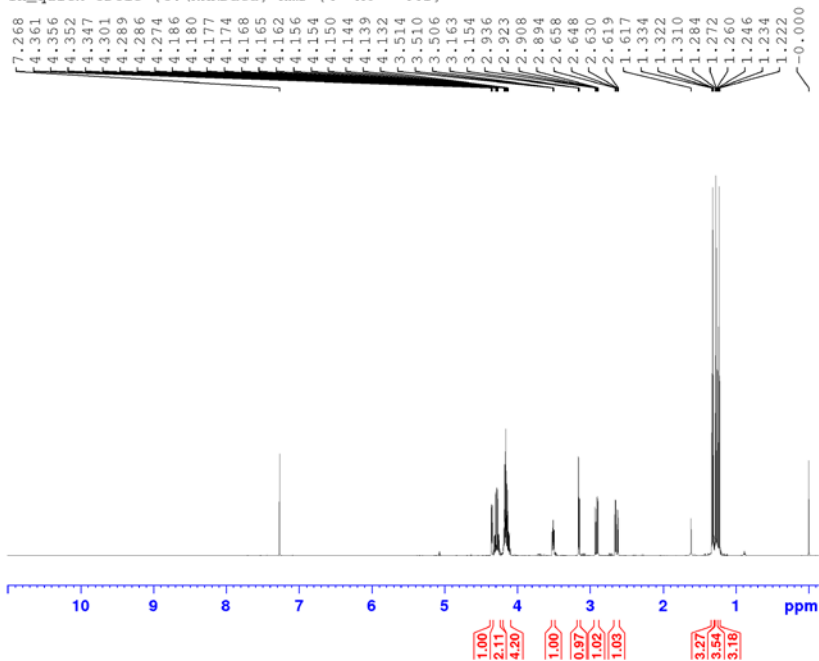
Current Data Parameters
 NAME PTMS-150118-3 rf. 0.86
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20180118
 Time 17.51 h
 INSTRUM spect
 PROBHD Z156457_0001 (4
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 256
 DS 4
 SWH 36231.883 Hz
 FIDRES 1.105709 Hz
 AQ 0.9043969 sec
 RG 200.58
 SW 13.800 usec
 DE 18.00 usec
 TE 298.1 K
 D1 4.00000000 sec
 D11 0.03000000 sec
 TDO -1
 SFO1 150.9304724 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 93.40000153 W
 SFO2 600.1824007 MHz
 NUC2 1H
 CPDPRG2 waltz16
 FCFD2 80.00 usec
 PLW2 21.23600006 W
 PLW12 0.48938000 W
 PLW13 0.24527000 W

F2 - Processing parameters
 SI 524288
 SF 150.9153622 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 FC 1.40



1H_quick CDCl3 {C:\NMRData} nmr {4 A6 - 441}

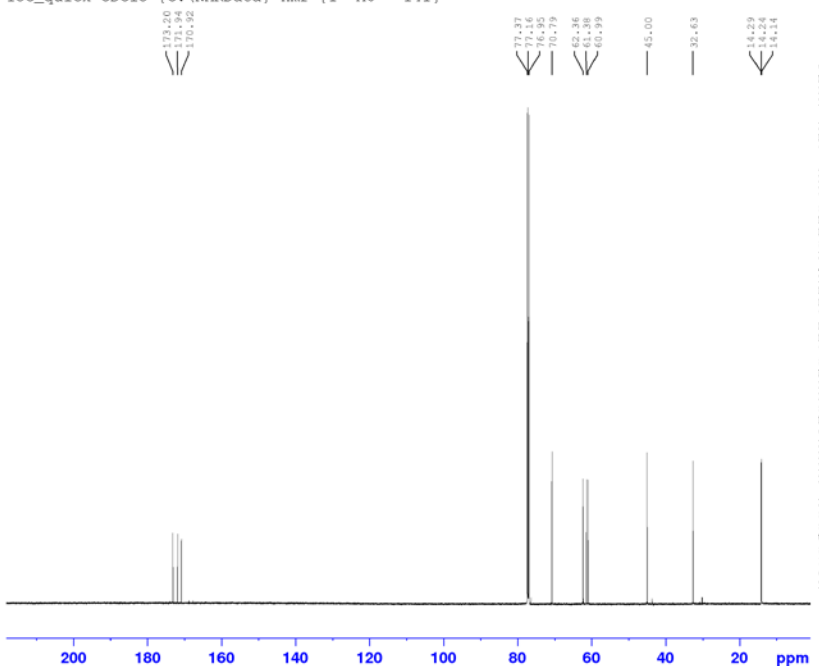


Current Data Parameters
 NAME PTMS-180117-2
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170224
 Time 10.58 h
 INSTRUM spect
 PROBHD 2156457_0001 ()
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 51.76
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.0000000 sec
 ID0 1
 SF01 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLW1 21.23600006 W

F2 - Processing parameters
 SI 524288
 SF 600.1800090 MHz
 MDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

13C_quick CDCl3 {C:\NMRData} nmr {1 A6 - 141}

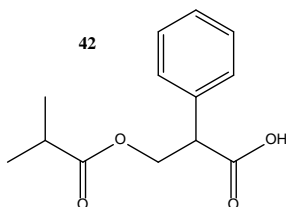


Current Data Parameters
 NAME PTMS-180117-2
 EXPNO 21
 PROCNO 1

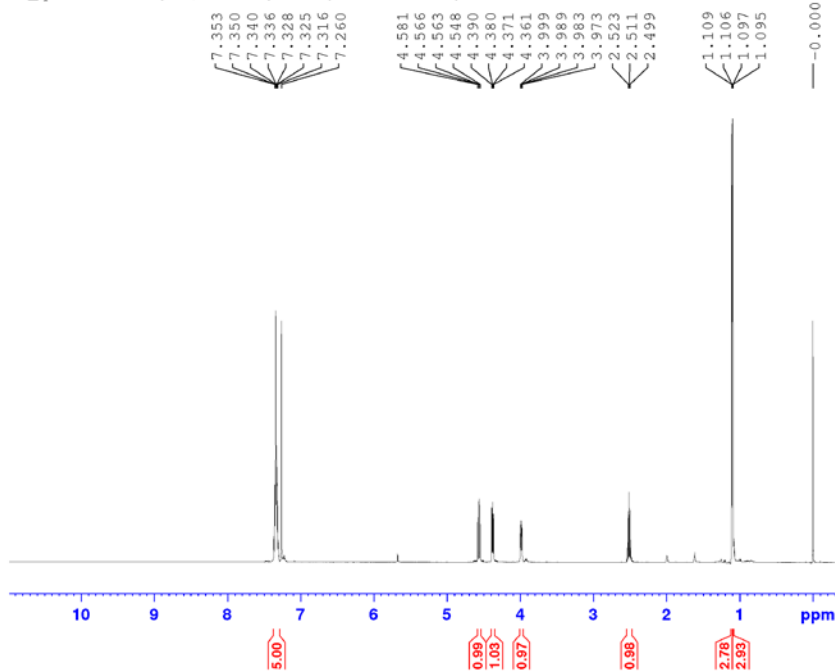
F2 - Acquisition Parameters
 Date_ 20171031
 Time 15.08 h
 INSTRUM spect
 PROBHD 2156457_0001 ()
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 256
 DS 4
 SWH 36231.883 Hz
 FIDRES 1.105709 Hz
 AQ 0.9043968 sec
 RG 200.58
 DW 13.800 usec
 DE 18.00 usec
 TE 298.1 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 ID0 1
 SF01 150.9304726 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 83.40000153 W
 SEQ2 600.1824007 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 80.00 usec
 PLW2 21.23600006 W
 PLM2 0.48938000 W
 PLM3 0.24527000 W

F2 - Processing parameters
 SI 524288
 SF 150.9153618 MHz
 MDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

42



1H_quick CDC13 {C:\NMRData} nmr {1 D10 - 176}

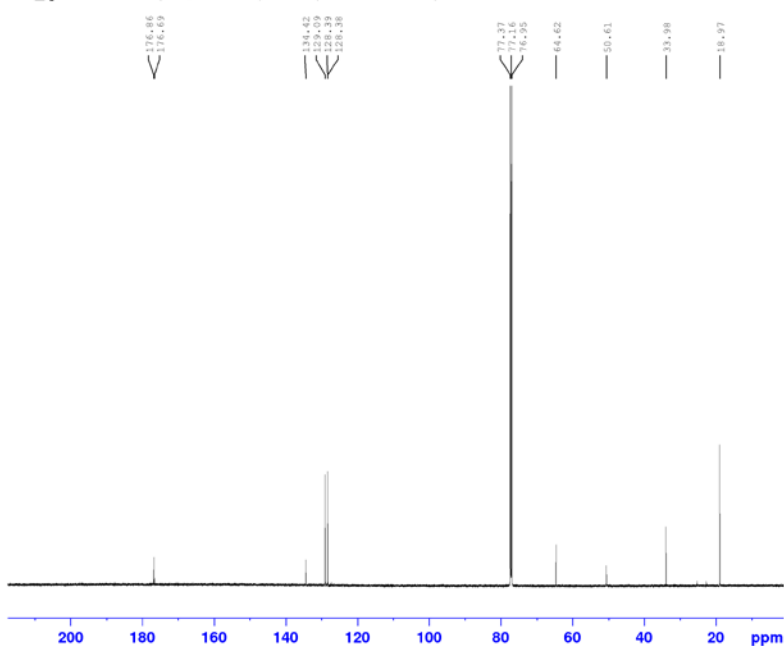


Current Data Parameters
NAME FIMS-220118-1 rf. 0.67
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20180125
Time 11.52 h
INSTRUM spect
PROBHD Z156457_0001 f
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 16
DS 2
SNH 12019.230 Hz
FIDRES 0.366798 Hz
AQ 2.7262976 sec
RG 80.09
DN 41.600 usec
DE 18.00 usec
TE 298.1 K
D1 1.00000000 sec
TDO 1
SFO1 600.1837061 MHz
NUC1 1H
P1 12.00 usec
PLW1 21.23600006 W

F2 - Processing parameters
SI 524288
SF 600.1800141 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

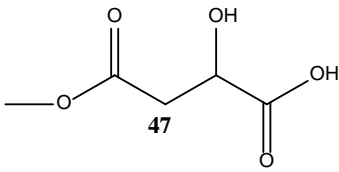
13C_quick CDC13 {C:\NMRData} nmr {1 D10 - 176}



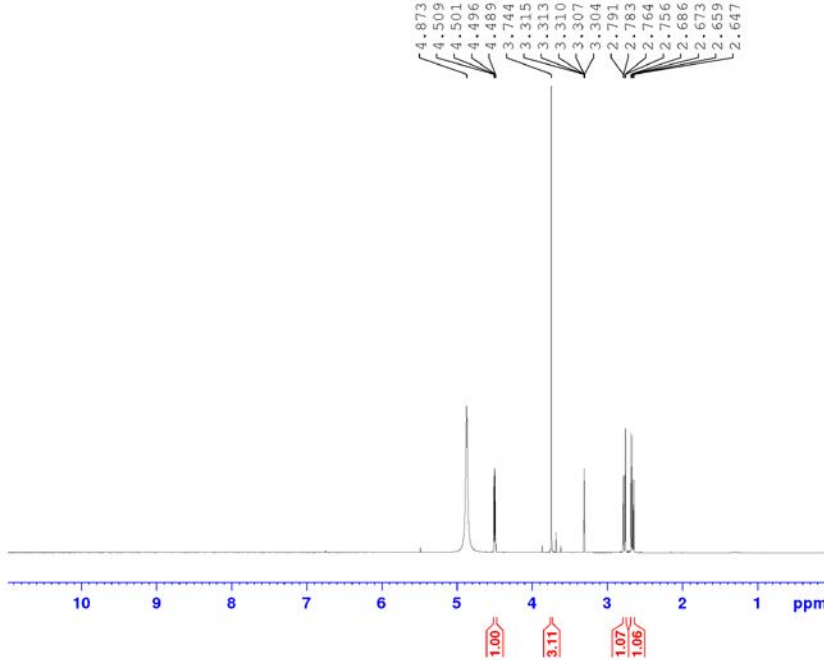
Current Data Parameters
NAME FIMS-220118-1 rf. 0.67
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20180125
Time 12.07 h
INSTRUM spect
PROBHD Z156457_0001 f
PULPROG zgpg30
TD 65536
SOLVENT CDC13
NS 256
DS 4
SNH 36231.888 Hz
FIDRES 1.105709 Hz
AQ 0.9043968 sec
RG 200.58
DN 13.800 usec
DE 18.00 usec
TE 298.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TDO 1
SFO1 150.9304726 MHz
NUC1 13C
P1 10.00 usec
PLW1 83.40000153 W
SFO2 600.1824007 MHz
NUC2 1H
CPDPRG[2] waltz16
PCPD2 80.00 usec
PLW2 21.23600006 W
PLW12 8.48928000 W
PLW13 0.24527000 W

F2 - Processing parameters
SI 524288
SF 150.9153611 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

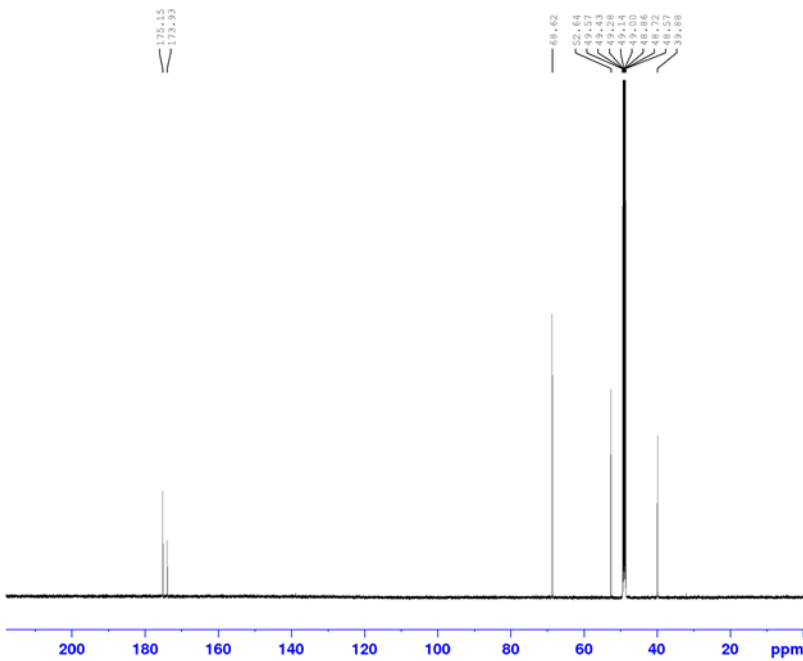


1H_quick MeOD (C:\NMRData) Petri {1 D4 - 128}



Current Data Parameters
 NAME F2MS-031018-1 fr. 5-10 akkha
 EXPNO 1
 PROCNO 1
 F2 - Acquisition Parameters
 Date_ 20181011
 Time 14:23 h
 INSTRUM spect
 PROBRD s156457_0001 i
 PULPROG zgpg30
 TD 65536
 SOLVENT MeOD
 NS 16
 DS 2
 SWH 13019.230 Hz
 FIDRES 0.366799 Hz
 AQ 1.7262976 sec
 RG 26.02
 DM 81.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TSD
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PL1 33.14099884 K
 F2 - Processing parameters
 SI 262144
 SF 600.1801113 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

13C_quick MeOD (C:\NMRData) Petri {1 D4 - 128}

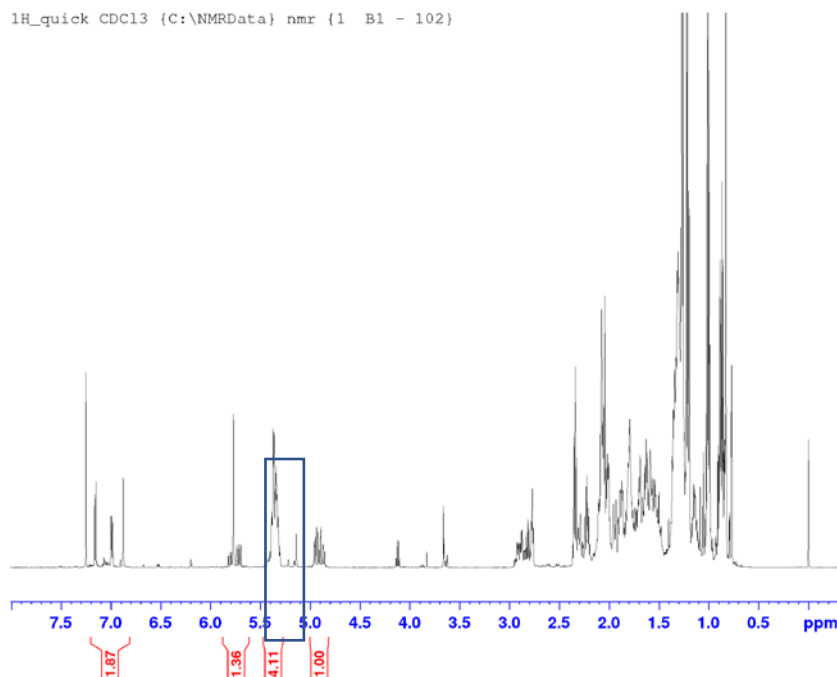


Current Data Parameters
 NAME F2MS-031018-1 fr. 5-10 akkha
 EXPNO 1
 PROCNO 1
 F2 - Acquisition Parameters
 Date_ 20181011
 Time 16:35 h
 INSTRUM spect
 PROBRD s156457_0001 i
 PULPROG zgpg30
 TD 65536
 SOLVENT MeOD
 NS 256
 DS 4
 SWH 36231.883 Hz
 FIDRES 1.105709 Hz
 AQ 0.2043965 sec
 RG 201.58
 DM 13.800 usec
 DE 18.00 usec
 TE 298.1 K
 D1 2.00000000 sec
 TSD
 SFO1 150.9304726 MHz
 NUC1 13C
 P1 10.00 usec
 PL1 83.4000153 M
 SFO2 600.1824007 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCDP2 85.00 usec
 PLW2 33.14099884 K
 PLW12 0.74566001 M
 PLW13 0.37446001 M
 F2 - Processing parameters
 SI 131072
 SF 150.9151702 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

Prepurified wood extract sample containing resin acids and unsaturated fatty acids (signals in rectangle)

Prepurified wood extract sample

1H_quick CDCl3 {C:\NMRData} nmr {1 B1 - 102}



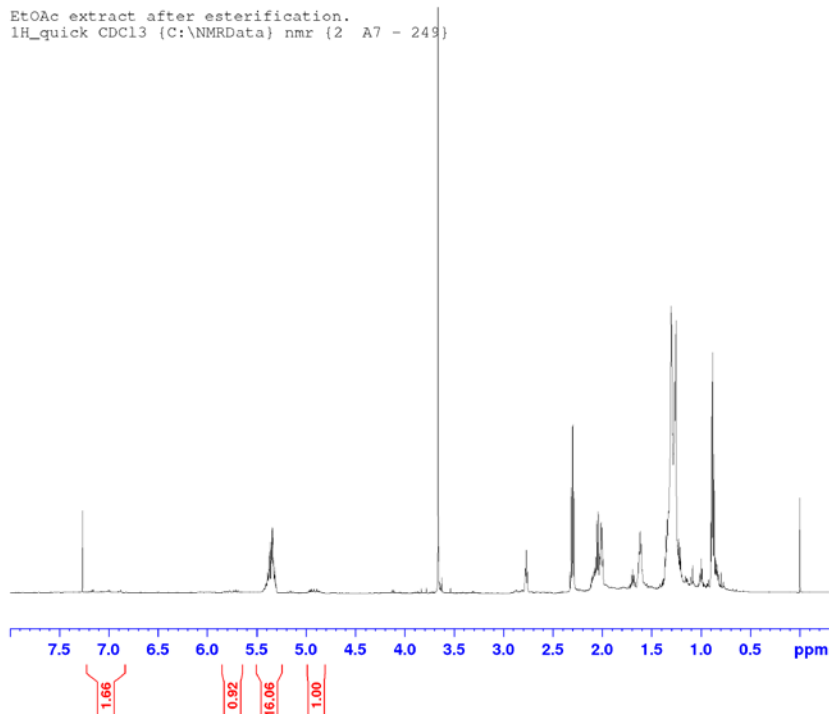
Current Data Parameters
 NAME VWC-4 FC F3
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20160413
 Time 14.53 h
 INSTRUM spect
 PROBHD 2114607_0215 ()
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.183399 Hz
 AQ 2.7262976 sec
 RG 19.53
 DW 41.600 usec
 DE 6.50 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDO 1
 SF01 600.1837061 MHz
 NUC1 1H
 P1 10.00 usec
 PLW1 24.28499985 W

F2 - Processing parameters
 SI 65536
 SF 600.1800188 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

Ethyl acetate extract after esterification reaction, containing methyl esters of unsaturated fatty acids

EtOAc extract after esterification.
 1H_quick CDCl3 {C:\NMRData} nmr {2 A7 - 249}



Current Data Parameters
 NAME VWC-24
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20160603
 Time 12.22 h
 INSTRUM spect
 PROBHD 2156457_0001 ()
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.386798 Hz
 AQ 2.7262976 sec
 RG 19.53
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDO 1
 SF01 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLW1 21.23600006 W

F2 - Processing parameters
 SI 65536
 SF 600.1800102 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

Extracted resin acids

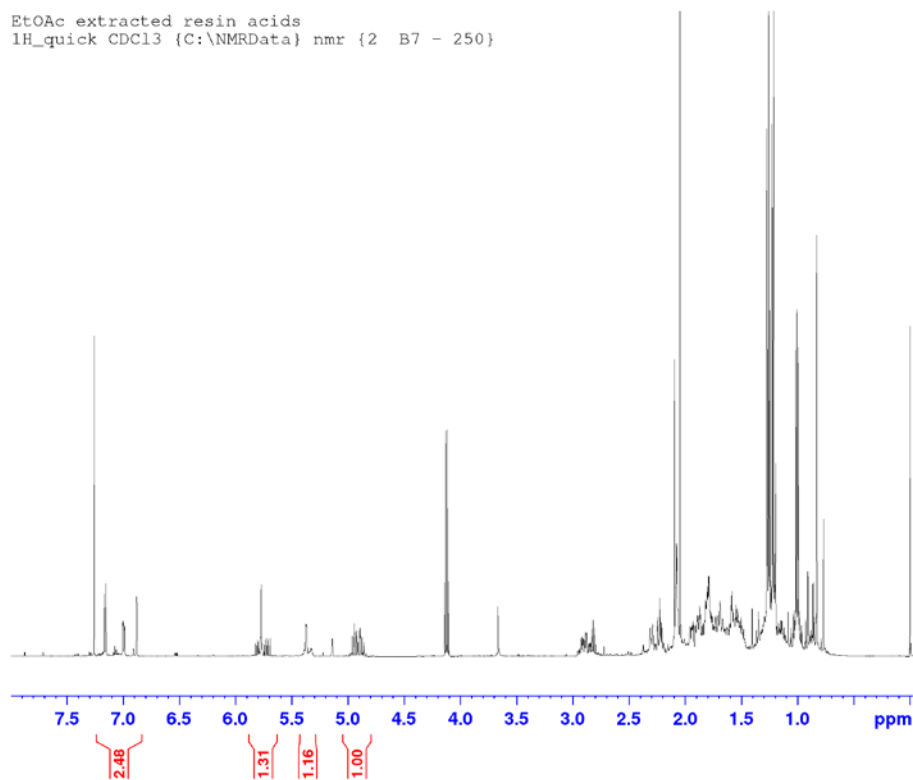
EtOAc extracted resin acids
1H_quick CDCl3 {C:\NMRData} nmr {2 B7 - 250}

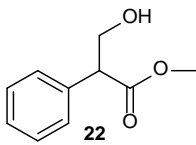


Current Data Parameters
NAME VWC-24
EXFNO 20
PROCNO 1

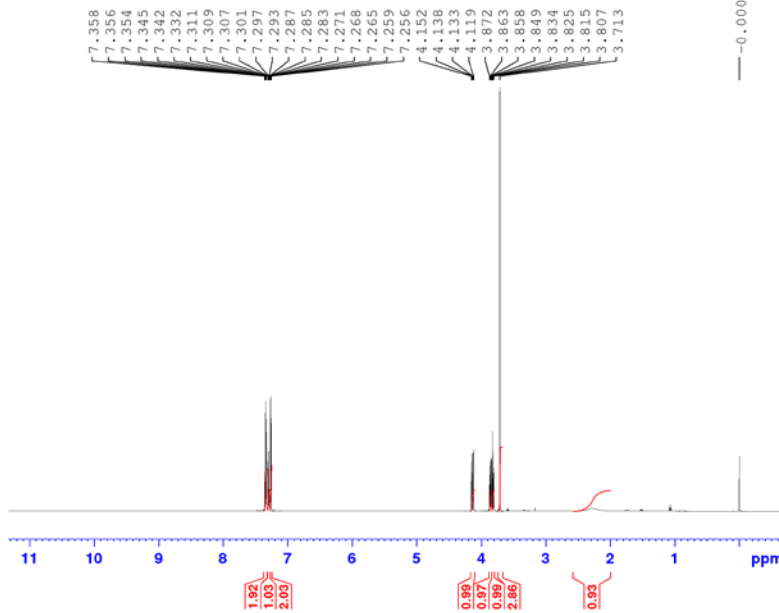
F2 - Acquisition Parameters
Date_ 20160603
Time 12.29 h
INSTRUM spect
PROBHD 2156457_0001 (zg30)
PULPROG zg30
ID 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 12019.230 Hz
FIDRES 0.366798 Hz
AQ 2.7262976 sec
RG 30.52
SW 41.600 usec
DE 18.00 usec
TE 298.1 K
D1 1.00000000 sec
TDO 1
SFOL 600.1837061 MHz
NUC1 1H
P1 12.00 usec
PLW1 21.23600006 W

F2 - Processing parameters
SI 65536
SF 600.1800145 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





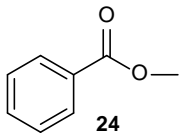
1H_quick CDCl3 {C:\NMRData} nmr {3 H11 - 388}



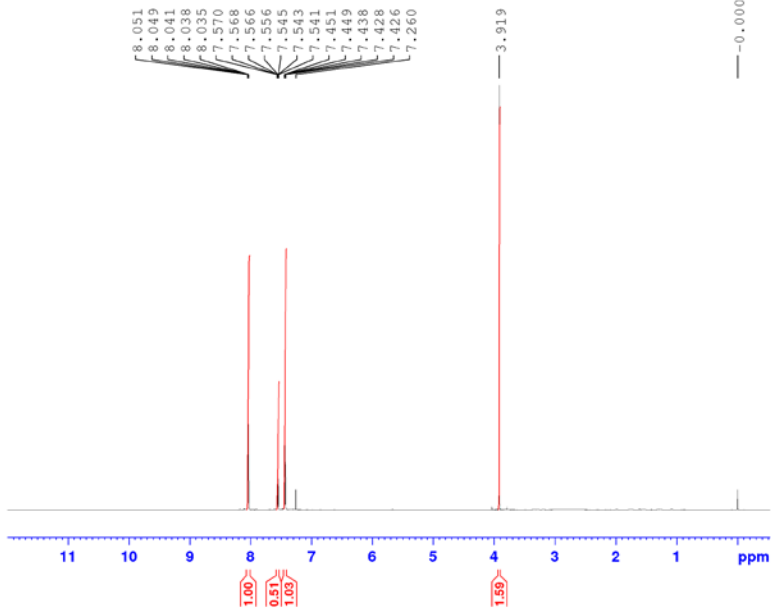
Current Data Parameters
 NAME PTMS-040118-3
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20180105
 Time 12.01 h
 INSTRUM spect
 PROBRD 2156457_0001 ()
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 32
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 61.76
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.0000000 sec
 TDO 1
 SFO1 600.1837061 MHz
 NUCL 1H
 F1 12.00 usec
 PLW1 21.23600006 W

F2 - Processing parameters
 SI 524288
 SF 600.1800143 MHz
 MW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



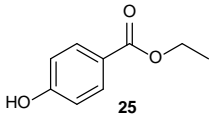
1H_quick CDCl3 {C:\NMRData} nmr {1 G11 - 187}



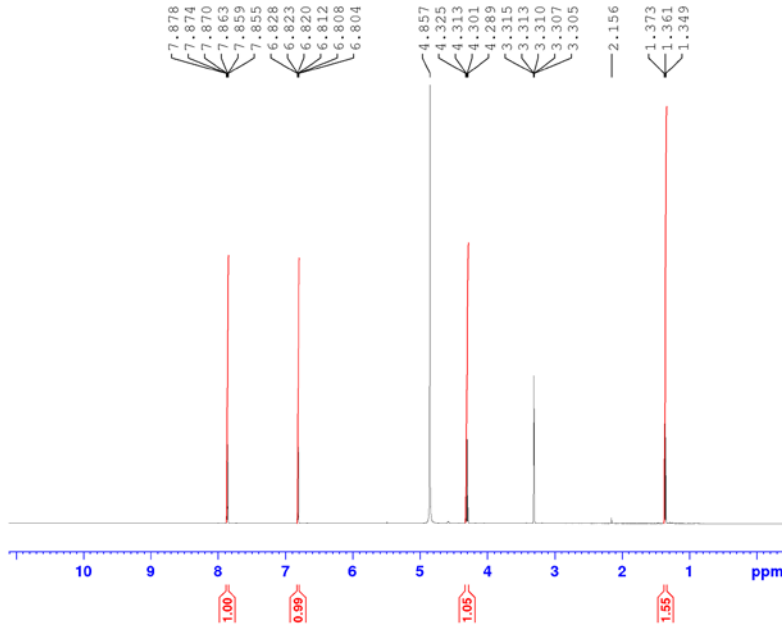
Current Data Parameters
 NAME PTMS-250118-1
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20180130
 Time 9.54 h
 INSTRUM spect
 PROBRD 2156457_0001 ()
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 16.27
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.0000000 sec
 TDO 1
 SFO1 600.1837061 MHz
 NUCL 1H
 F1 12.00 usec
 PLW1 21.23600006 W

F2 - Processing parameters
 SI 524288
 SF 600.1800139 MHz
 MW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



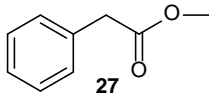
1H_quick MeOD (C:\NMRData) Petri (1 F12 - 194)



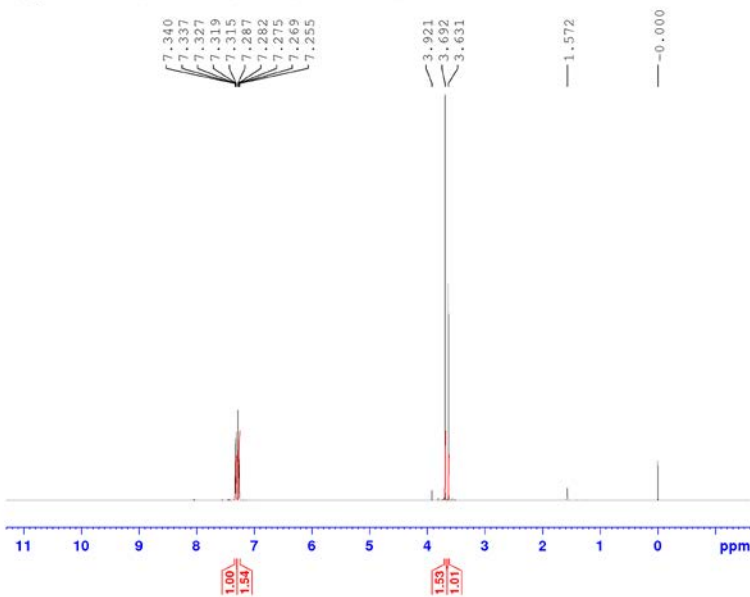
Current Data Parameters
 NAME PTMS-070918-2
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20180910
 Time 15.35 h
 INSTRUM spect
 PROBRD 2156497_0001 ()
 PULPROG zg30
 ID 65536
 SOLVENT MeOD
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 69.21
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 DL 1.0000000 sec
 TDO 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLM1 33.14098884 W

F2 - Processing parameters
 SI 262144
 SF 600.1800114 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



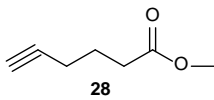
1H_quick CDCl3 (C:\NMRData) nmr (4 E2 - 413)



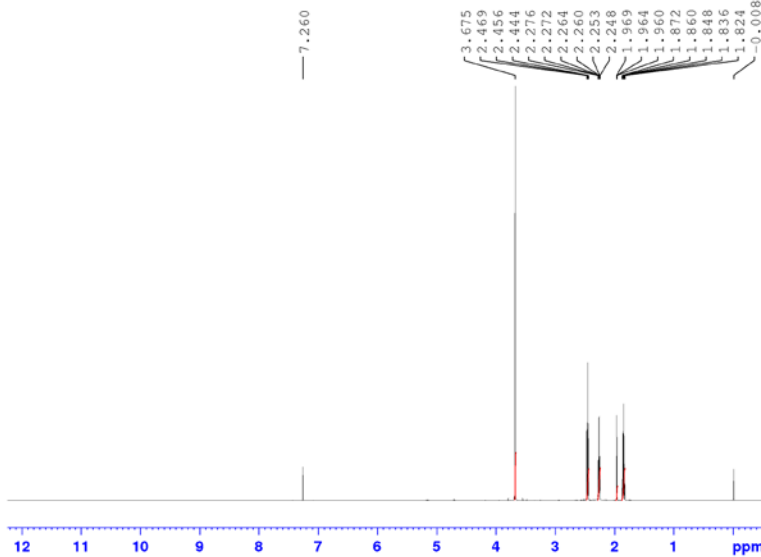
Current Data Parameters
 NAME PTMS-260617-2c
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170627
 Time 11.17 h
 INSTRUM spect
 PROBRD 2156497_0001 ()
 PULPROG zg30
 ID 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 61.76
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 DL 1.0000000 sec
 TDO 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLM1 21.23860006 W

F2 - Processing parameters
 SI 324288
 SF 600.1800180 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



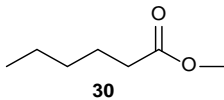
1H_quick CDC13 [C:\NMRData] Petri (3 A1 - 301)



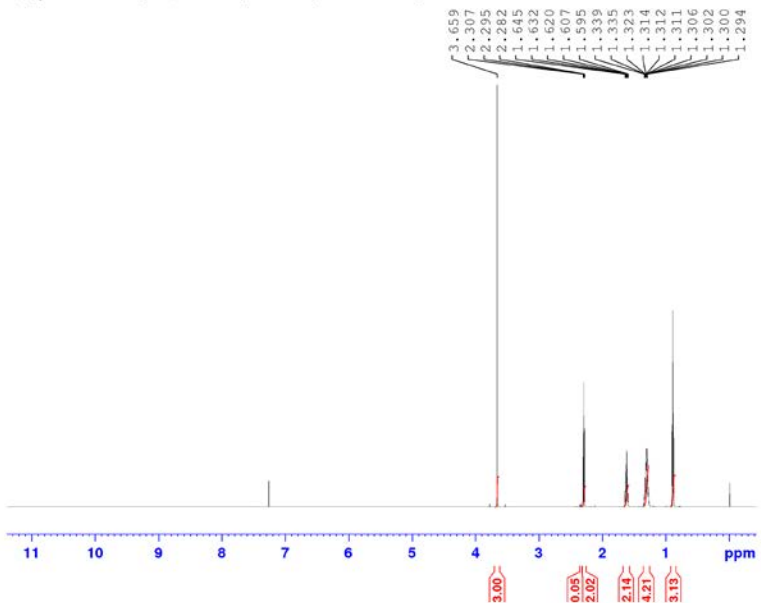
Current Data Parameters
 NAME FIMS-020119-3
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190103
 Time 13.13 h
 INSTRUM spect
 PROBHD 2156457_0001 ()
 PULPROG zg30
 TD 65536
 SFO1 600.1837061 MHz
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 56.02
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDC 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PL1 33.14099884 W
 FLM1

F2 - Processing parameters
 SI 262144
 SF 600.1800154 MHz
 WDM EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



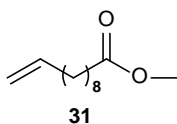
1H_quick CDC13 [C:\NMRData] Petri (3 H1 - 308)



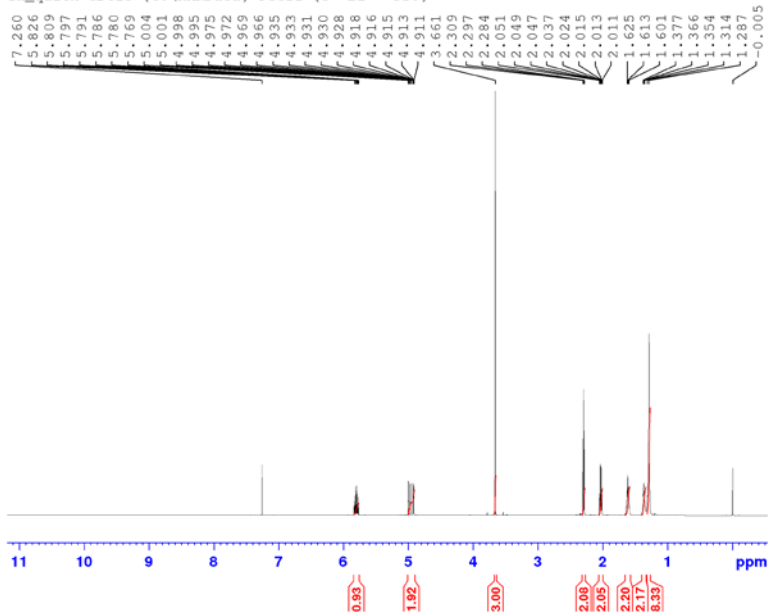
Current Data Parameters
 NAME FIMS-040119-3
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190104
 Time 13.32 h
 INSTRUM spect
 PROBHD 2156457_0001 ()
 PULPROG zg30
 TD 65536
 SFO1 600.1837061 MHz
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 28.13
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDC 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PL1 33.14099884 W
 FLM1

F2 - Processing parameters
 SI 262144
 SF 600.1800151 MHz
 WDM EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



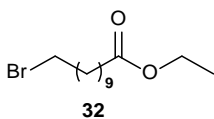
1H_quick CDCl3 (C:\NMRData) Petri (3 B2 - 310)



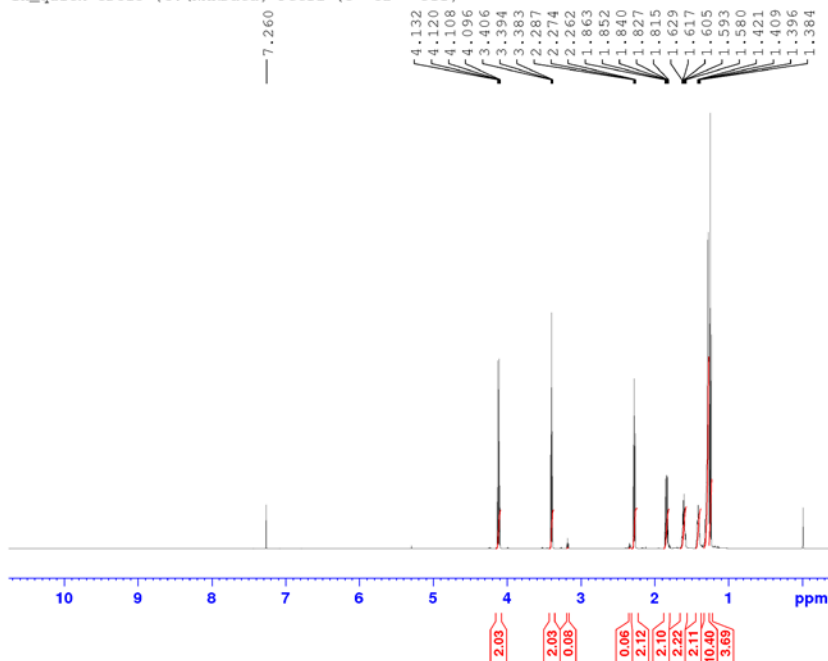
Current Data Parameters
 NAME PTMS-040119-3
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190104
 Time 19:47 h
 INSTRUM spect
 PROBHD z156457_0001 ()
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 28.13
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 ID0 1
 SF01 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLW1 33.14099884 W

F2 - Processing parameters
 SI 262144
 SF 600.1800141 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



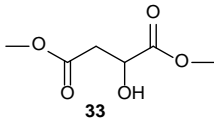
1H_quick CDCl3 (C:\NMRData) Petri (3 C2 - 311)



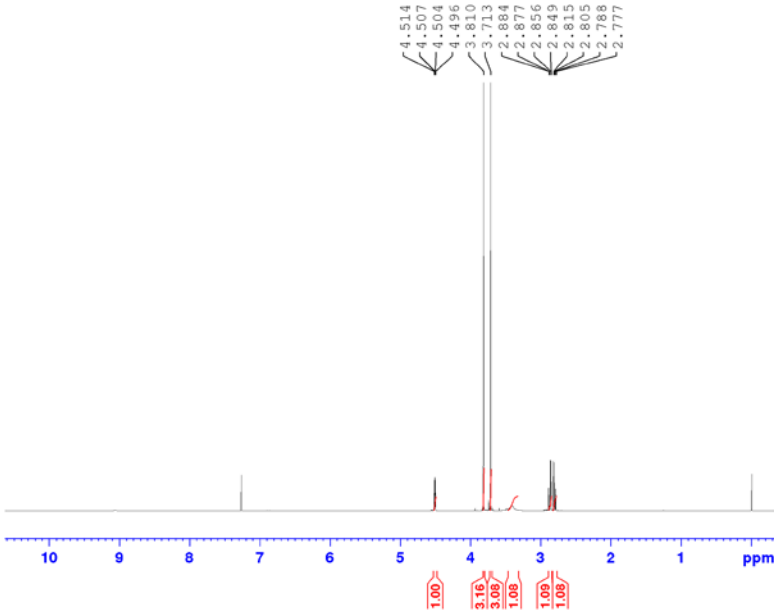
Current Data Parameters
 NAME PTMS-040119-4
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190107
 Time 12:08 h
 INSTRUM spect
 PROBHD z156457_0001 ()
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 25.38
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 ID0 1
 SF01 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLW1 33.14099884 W

F2 - Processing parameters
 SI 262144
 SF 600.1800139 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



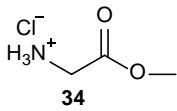
1H_quick CDCl3 {C:\NMRData} Petri {1 E3 - 121}



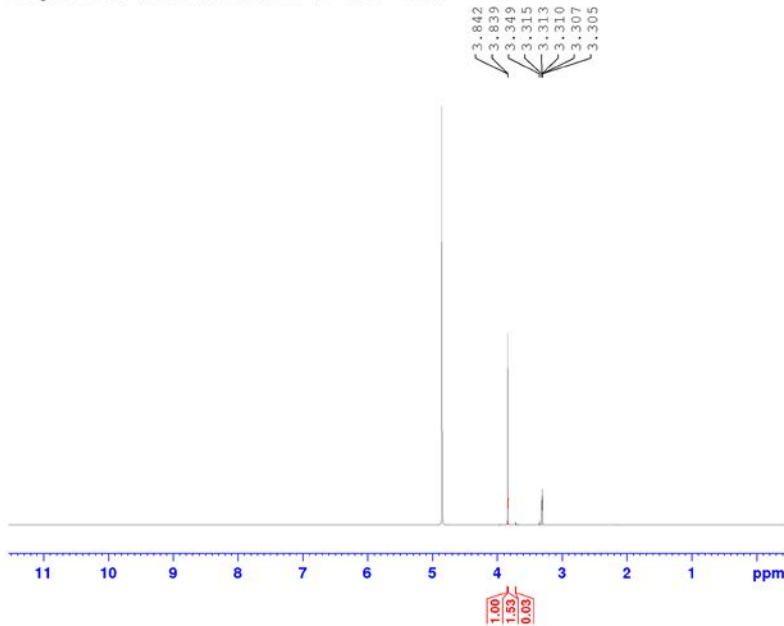
Current Data Parameters
 NAME PTMS-091018-2
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20181011
 Time 9.55 h
 INSTRUM spect
 PROBRD Z156457_0001 ()
 PULPROG zg30
 ID 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 56.02
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.0000000 sec
 TD0 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLW1 33.14099884 W

F2 - Processing parameters
 SI 262144
 SF 600.1800150 MHz
 MWDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



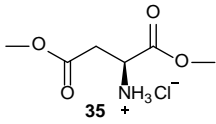
1H_quick MeOD {C:\NMRData} Petri {1 C10 - 175}



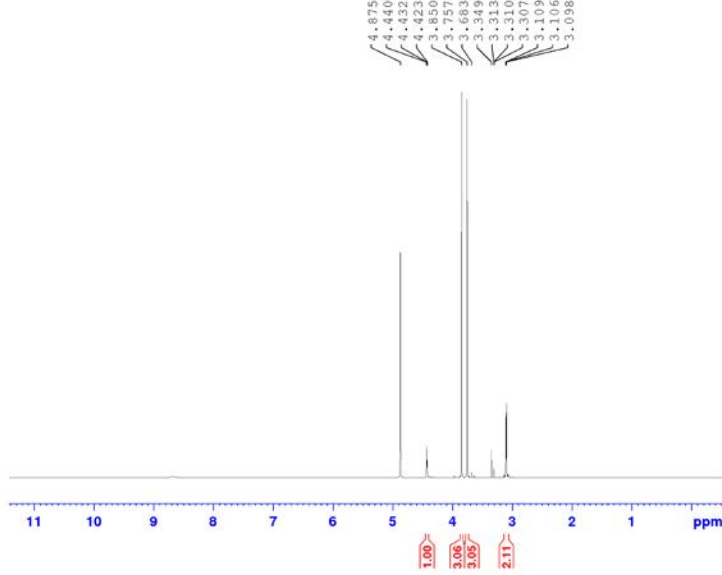
Current Data Parameters
 NAME PTMS-220119-2a
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190123
 Time 10.25 h
 INSTRUM spect
 PROBRD Z156457_0001 ()
 PULPROG zg30
 ID 65536
 SOLVENT MeOD
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 55.21
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.0000000 sec
 TD0 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLW1 33.14099884 W

F2 - Processing parameters
 SI 262144
 SF 600.1800112 MHz
 MWDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 FC 1.00



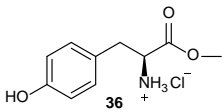
1H_quick MeOD (C:\NMRData) Petri (1 E3 - 121)



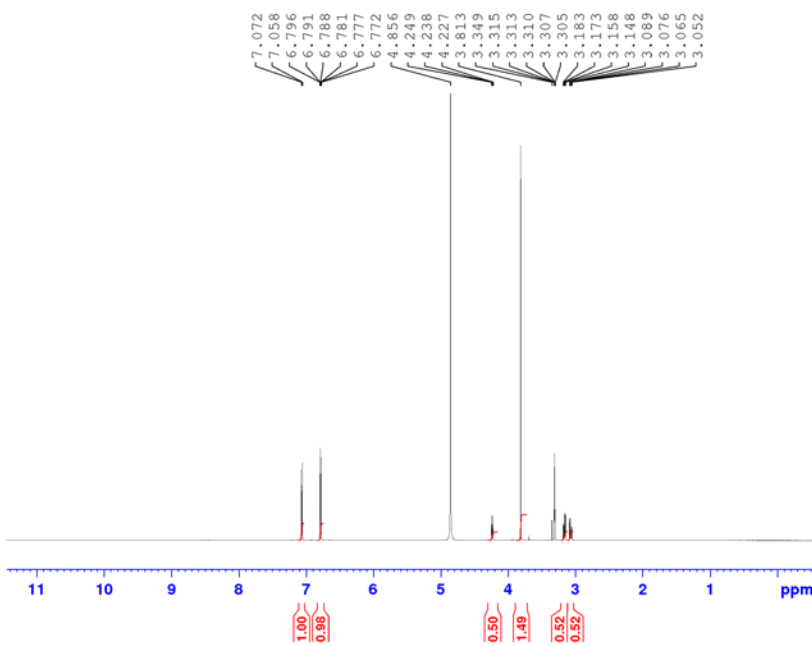
Current Data Parameters
 NAME FTM-280119-1
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190129
 Time 18:23 L
 INSTRUM spect
 PROBHD 2156457_0001 f
 PULPROG zg30
 ID 65536
 SOLVENT MeOD
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 22.18
 DN 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDO 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PL1 33.14099884 W

F2 - Processing parameters
 SI 262144
 SF 600.1800113 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



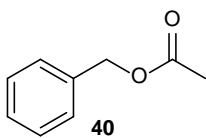
1H_quick MeOD (C:\NMRData) Petri (1 D11 - 184)



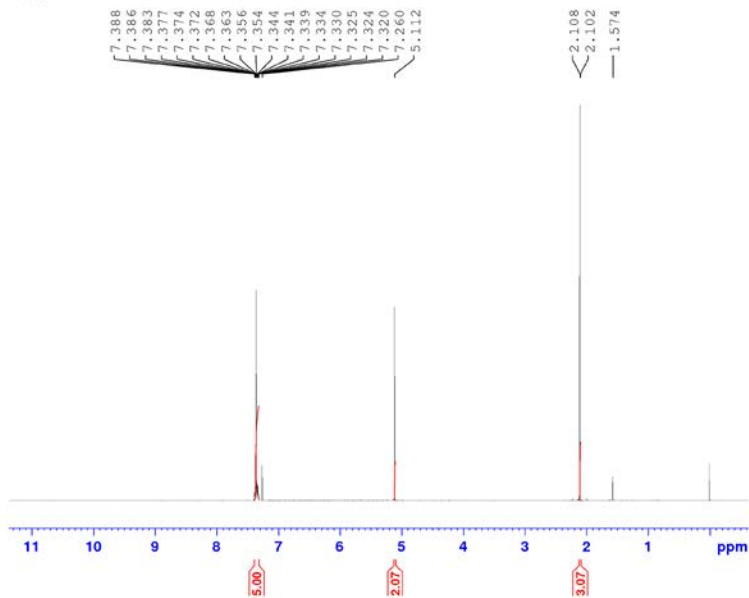
Current Data Parameters
 NAME PIMS-230119-1
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190124
 Time 11:10 h
 INSTRUM spect
 PROBHD 2156457_0001 f
 PULPROG zg30
 ID 65536
 SOLVENT MeOD
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 61.76
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDO 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PL1 33.14099884 W

F2 - Processing parameters
 SI 262144
 SF 600.1800116 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



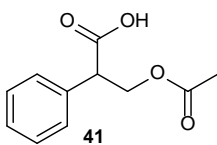
1H_quick CDCl3 (C:\NMRData) nmr {1 H7 - 156}



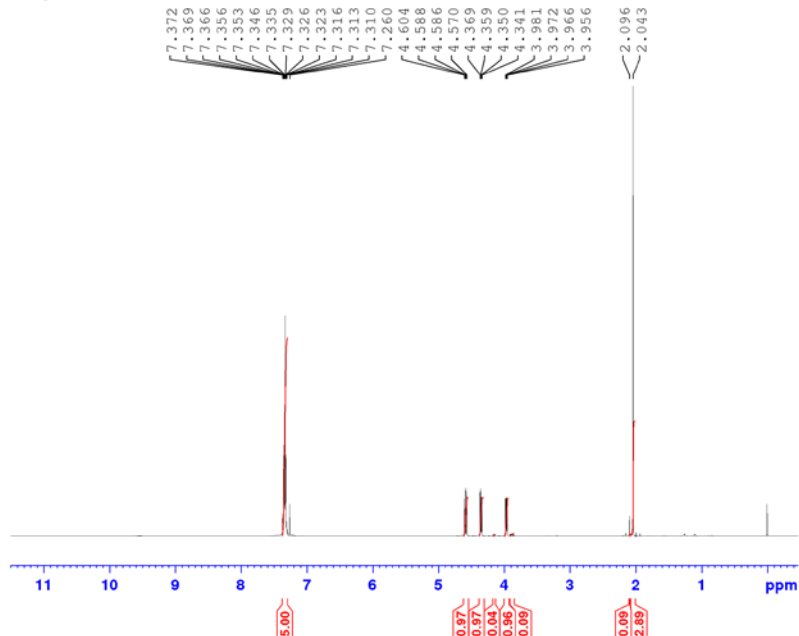
Current Data Parameters
NAME PIMS-150118-1 cf. 0.34
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20180119
Time 16.40 h
INSTRUM spect
PROBHD Z156457_001 ()
PULPROG zg30
TD 65536
ID 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 12019.230 Hz
FIDRES 0.366798 Hz
AQ 2.7262976 sec
RG 69.21
DM 41.600 usec
DE 18.00 usec
TE 298.1 K
D1 1.00000000 sec
TDO 1
SFO1 600.1837061 MHz
NUC1 1H
P1 12.00 usec
PLW1 21.23600006 W

F2 - Processing parameters
SI 524298
SF 600.1800150 MHz
WDW EM
SSB 0
LB 0 0.30 Hz
GB 0
PC 1.00



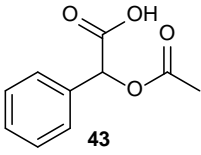
1H_quick CDCl3 (C:\NMRData) nmr {4 E2 - 413}



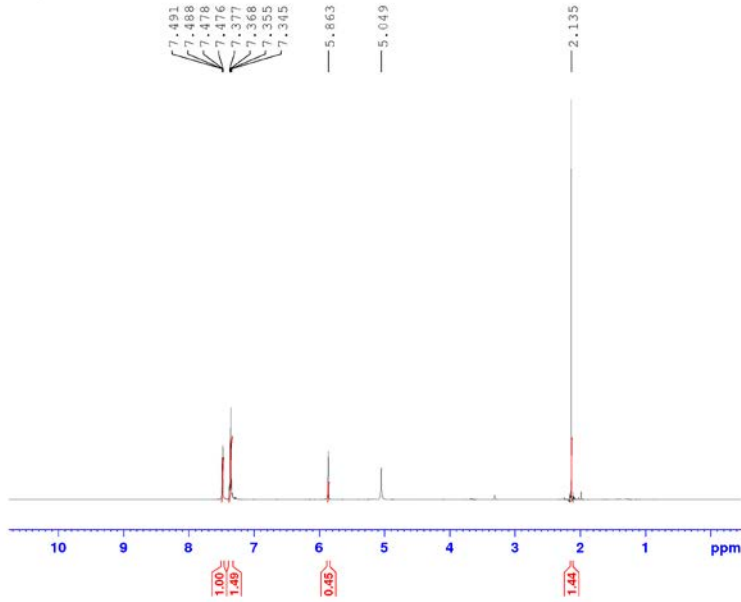
Current Data Parameters
NAME PIMS-080118-6
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20180109
Time 13.16 h
INSTRUM spect
PROBHD Z156457_001 ()
PULPROG zg30
TD 65536
ID 65536
SOLVENT CDCl3
NS 32
DS 2
SWH 12019.230 Hz
FIDRES 0.366798 Hz
AQ 2.7262976 sec
RG 35.27
DM 41.600 usec
DE 18.00 usec
TE 298.1 K
D1 1.00000000 sec
TDO 1
SFO1 600.1837061 MHz
NUC1 1H
P1 12.00 usec
PLW1 21.23600006 W

F2 - Processing parameters
SI 524288
SF 600.1800154 MHz
WDW EM
SSB 0
LB 0 0.30 Hz
GB 0
PC 1.00



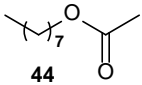
1H_quick MeOD (C:\NMRData) nmr (4 G5 - 439)



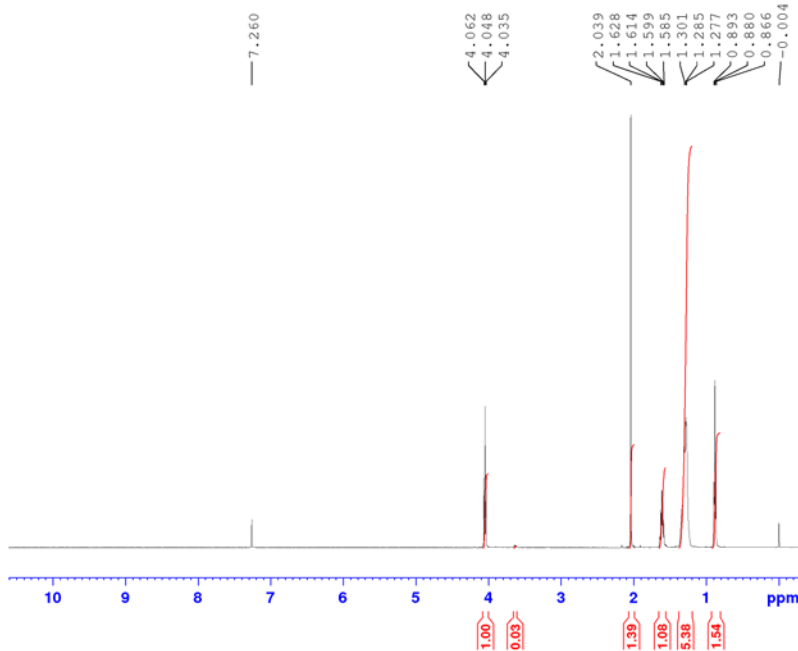
Current Data Parameters
 NAME F2MS-150218-3 rf. 0.82
 EXPNO 20
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190221
 Time 10:18 h
 INSTRUM spect
 PROBHD Z156457_0081_1
 PULPROG zg30
 TD 65536
 SOLVENT MeOD
 NS 4
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 25.38
 DW 41.600 usec
 DE 38.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDO 1
 SFO1 400.1437061 MHz
 NUC1 1H
 F1 13.00 usec
 PL1 21.23620006 W
 FILM1

F2 - Processing parameters
 SI 524288
 SF 600.1800115 MHz
 MEW 64
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



PT/MS-280114-2 cdcl3

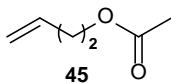


Current Data Parameters
 NAME MS-280114-2
 EXPNO 2
 PROCNO 1

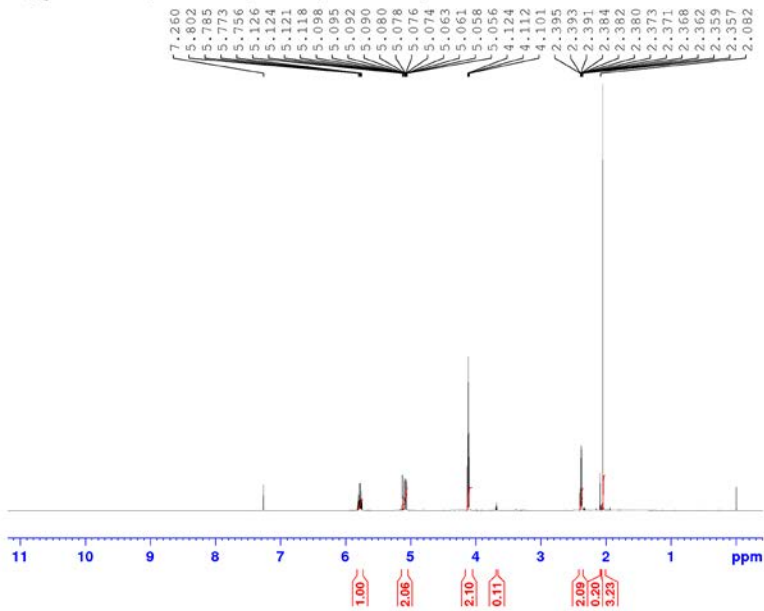
F2 - Acquisition Parameters
 Date_ 20140128
 Time 14:17
 INSTRUM spect
 PROBHD 5 mm QNP 1H/1
 PULPROG zg
 TD 65536
 SOLVENT CDCL3
 NS 4
 DS 0
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 64
 DW 50.000 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.50000000 sec
 TDO 1

----- CHANNEL f1 -----
 NUC1 1H
 P1 10.06 usec
 PL1 -1.00 dB
 SFO1 500.1340010 MHz

F2 - Processing parameters
 SI 262144
 SF 500.1300138 MHz
 MEW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 5.00



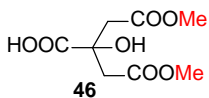
1H_quick CDCl3 {C:\NMRData} Petri (3 C3 - 319)



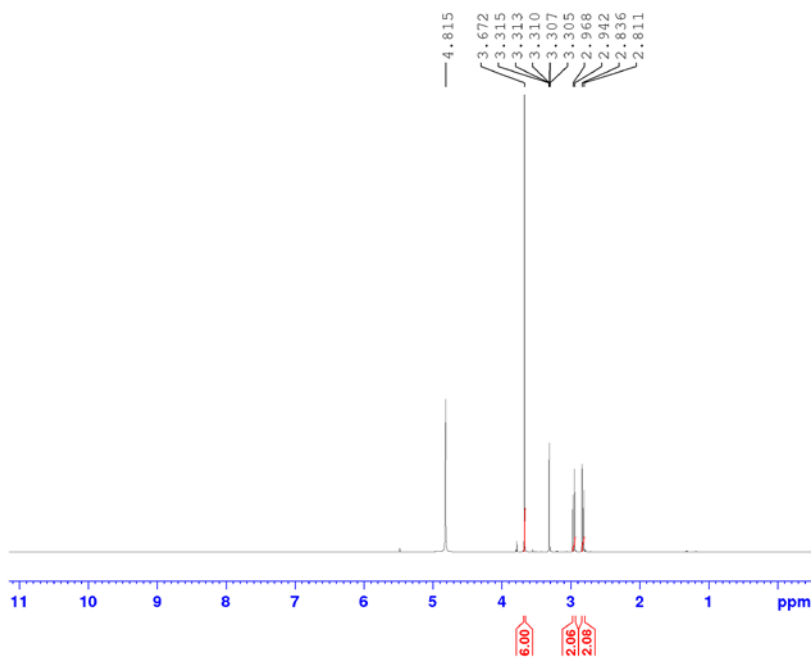
Current Data Parameters
 NAME PTMS-070115-1b
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190108
 Time 12.37 h
 INSTRUM spect
 PROBHD Z156457_0001 (1
 PULPROG zg30
 ID 65536
 SOLVENT CDCl3
 NS 2
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 30.52
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDO 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLW1 33.14099884 W

F2 - Processing parameters
 SI 262144
 SF 600.1800141 MHz
 WDW EM
 GB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



1H_quick MeOD {C:\NMRData} Petri (3 E1 - 305)



Current Data Parameters
 NAME PTMS-221015-1b
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20190104
 Time 9.53 h
 INSTRUM spect
 PROBHD Z156457_0001 (1
 PULPROG zg30
 ID 65536
 SOLVENT MeOD
 NS 16
 DS 2
 SWH 12019.230 Hz
 FIDRES 0.366798 Hz
 AQ 2.7262976 sec
 RG 69.21
 DW 41.600 usec
 DE 18.00 usec
 TE 298.1 K
 D1 1.00000000 sec
 TDO 1
 SFO1 600.1837061 MHz
 NUC1 1H
 P1 12.00 usec
 PLW1 33.14099884 W

F2 - Processing parameters
 SI 262144
 SF 600.1800112 MHz
 WDW EM
 GB 0
 LB 0.30 Hz
 GB 0
 PC 1.00