Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

$In(OTf)_3$-Catalyzed Intramolecular Hydroarylation of α-Phenylallyl β-Ketosulfones. Synthesis of Sulfonyl 1-Benzosuberones and 1-Tetralones

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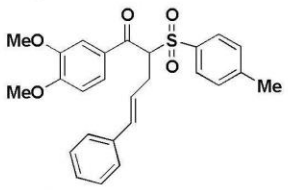
Compound 4a (^{1}H-NMR spectral data-1)

KSYE7C

Pulse Sequence: s2pul

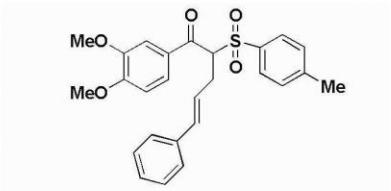
UNITYplus-400 "unity400"
Date: Aug 15 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4a

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4a (^{1}H-NMR spectral data-2)



Compound 4a

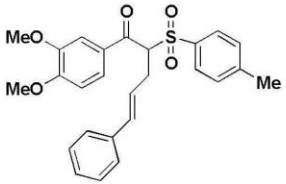
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4a (^{13}C-NMR spectral data)

KSYE7C

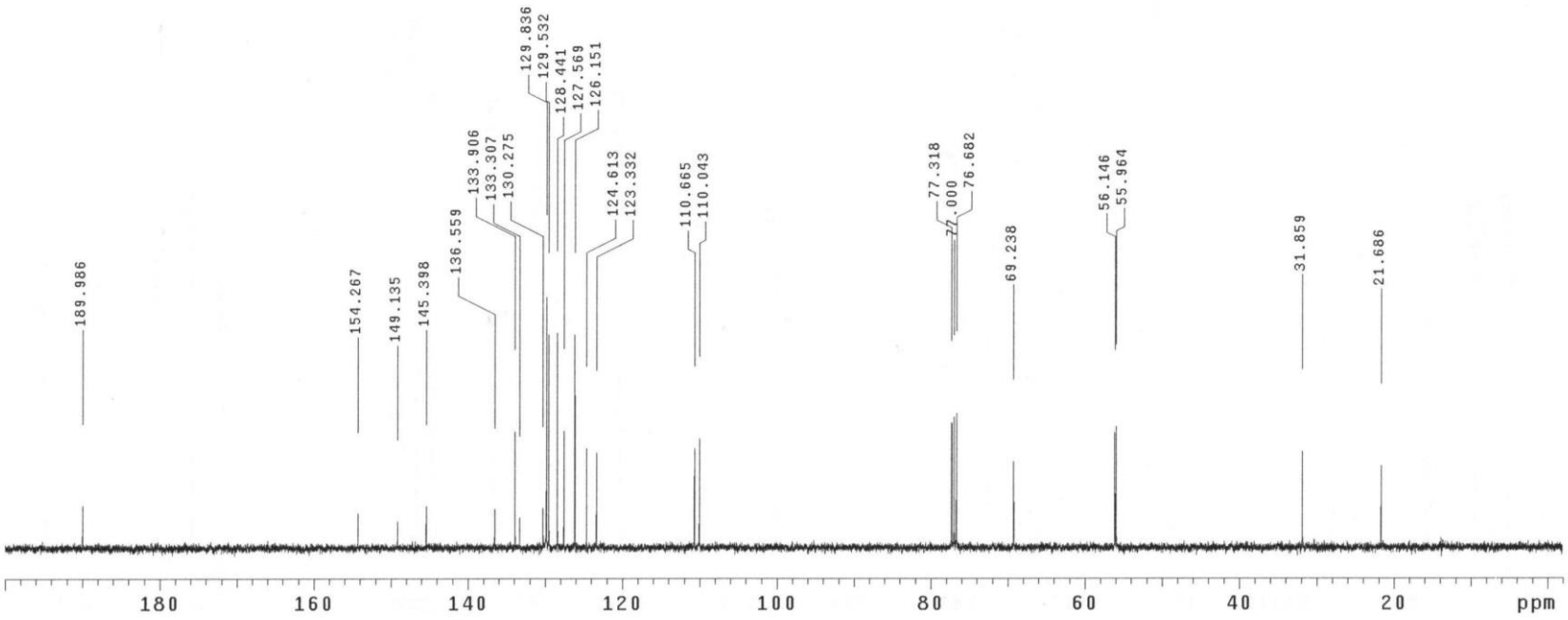
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Aug 15 2018
Solvent: CDCl3
Ambient temperature
Total 720 repetitions



Compound 4a

^{13}C NMR (100 MHz, $CDCl_3$) spectra

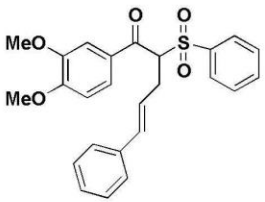


Compound 4b (^{1}H-NMR spectral data-1)

KSE8C

Pulse Sequence: s2pul

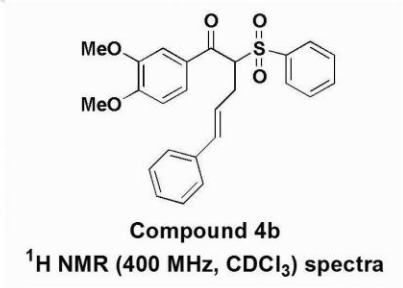
UNITYplus-400 "unity400"
Date: Sep 11 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4b

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4b (^{1}H-NMR spectral data-2)



Compound 4b

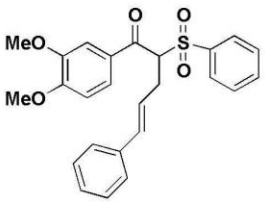
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4b (^{13}C-NMR spectral data)

KSE8C

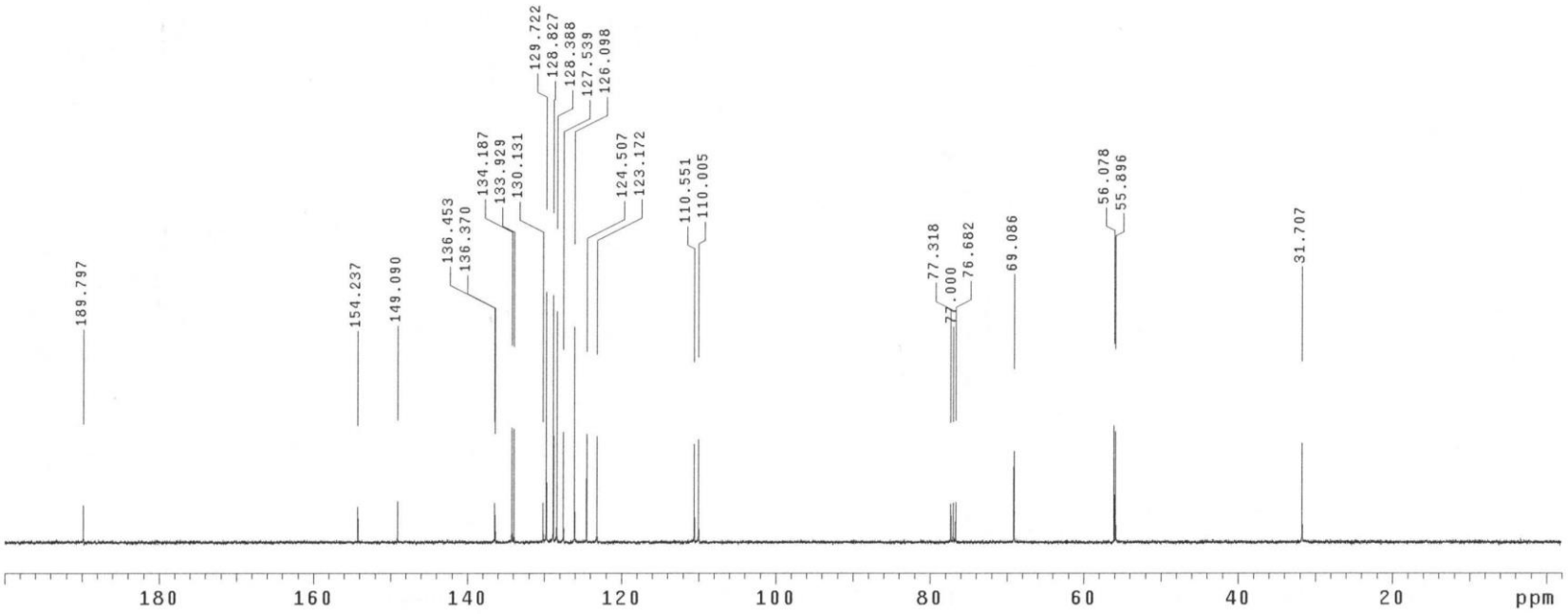
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Sep 11 2018
Solvent: CDCl3
Ambient temperature
Total 432 repetitions



Compound 4b

^{13}C NMR (100 MHz, $CDCl_3$) spectra

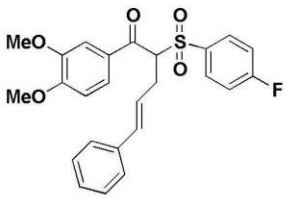


Compound 4c (^{1}H-NMR spectral data-1)

KSE11C

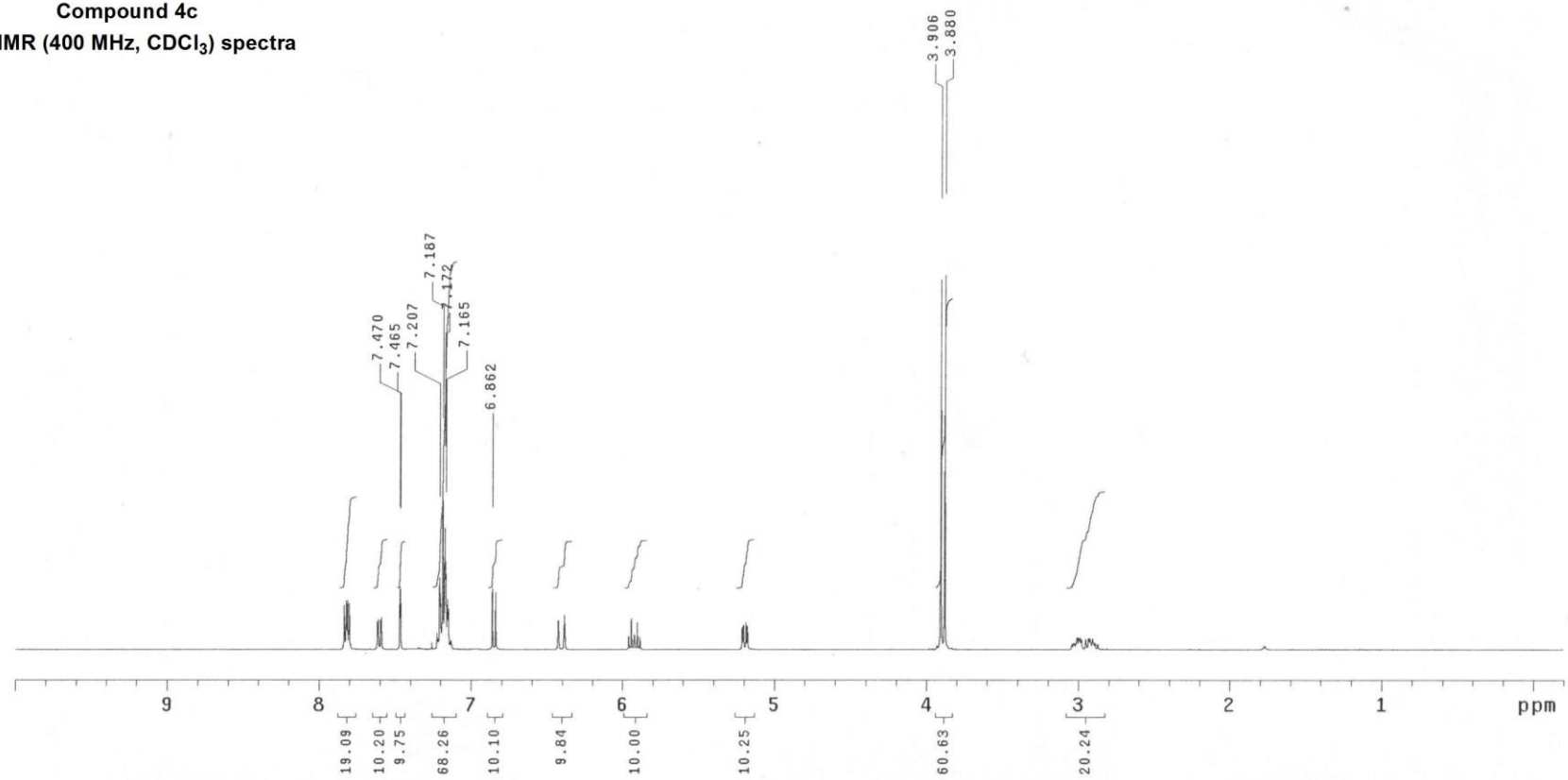
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Nov 6 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

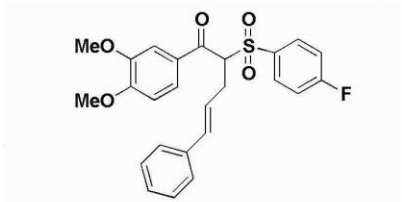


Compound 4c

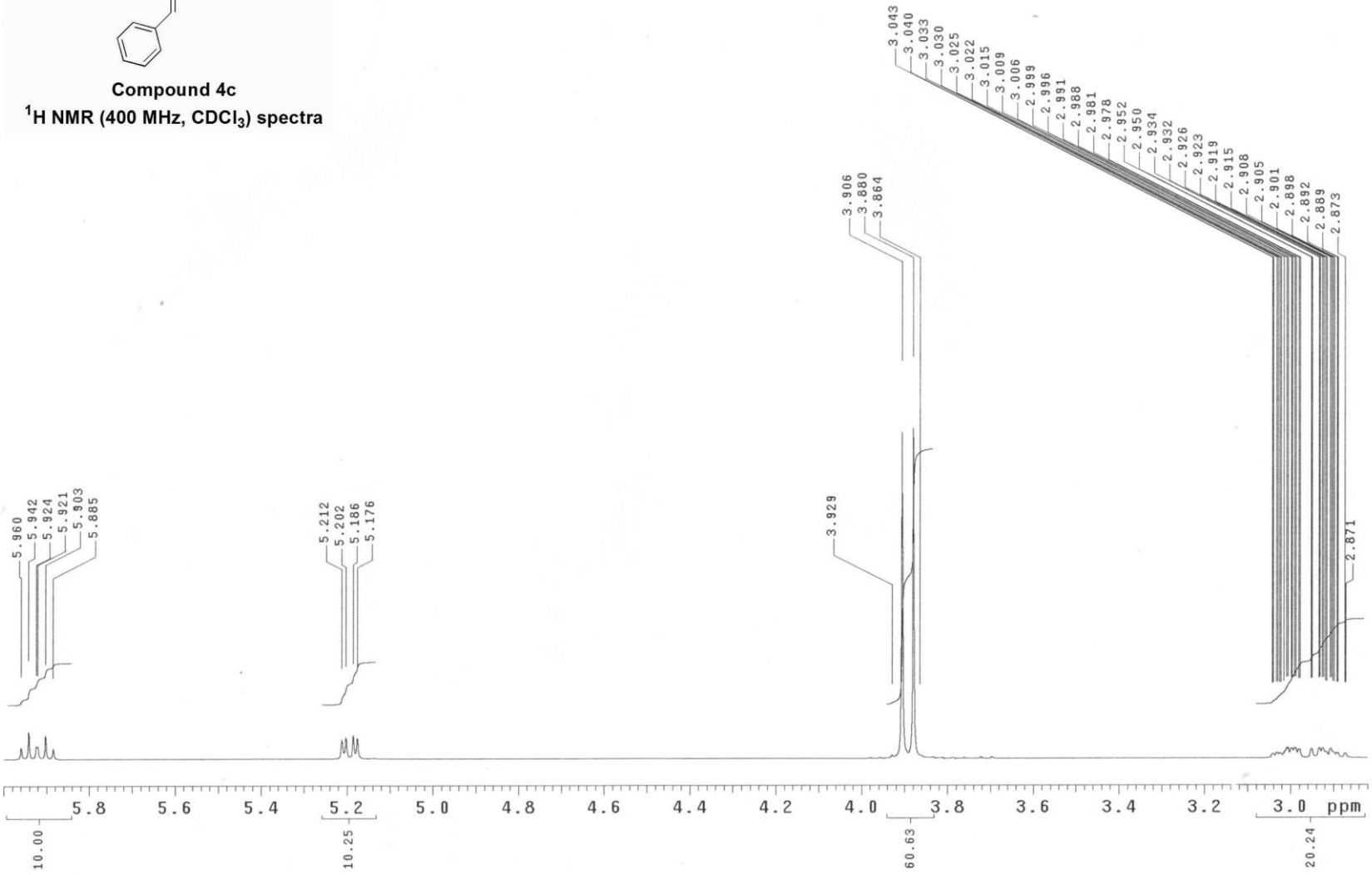
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 4c (^{1}H-NMR spectral data-2)



Compound 4c
^{1}H NMR (400 MHz, $CDCl_3$) spectra

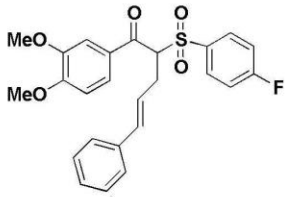


Compound 4c (^{13}C-NMR spectral data)

KSE11C

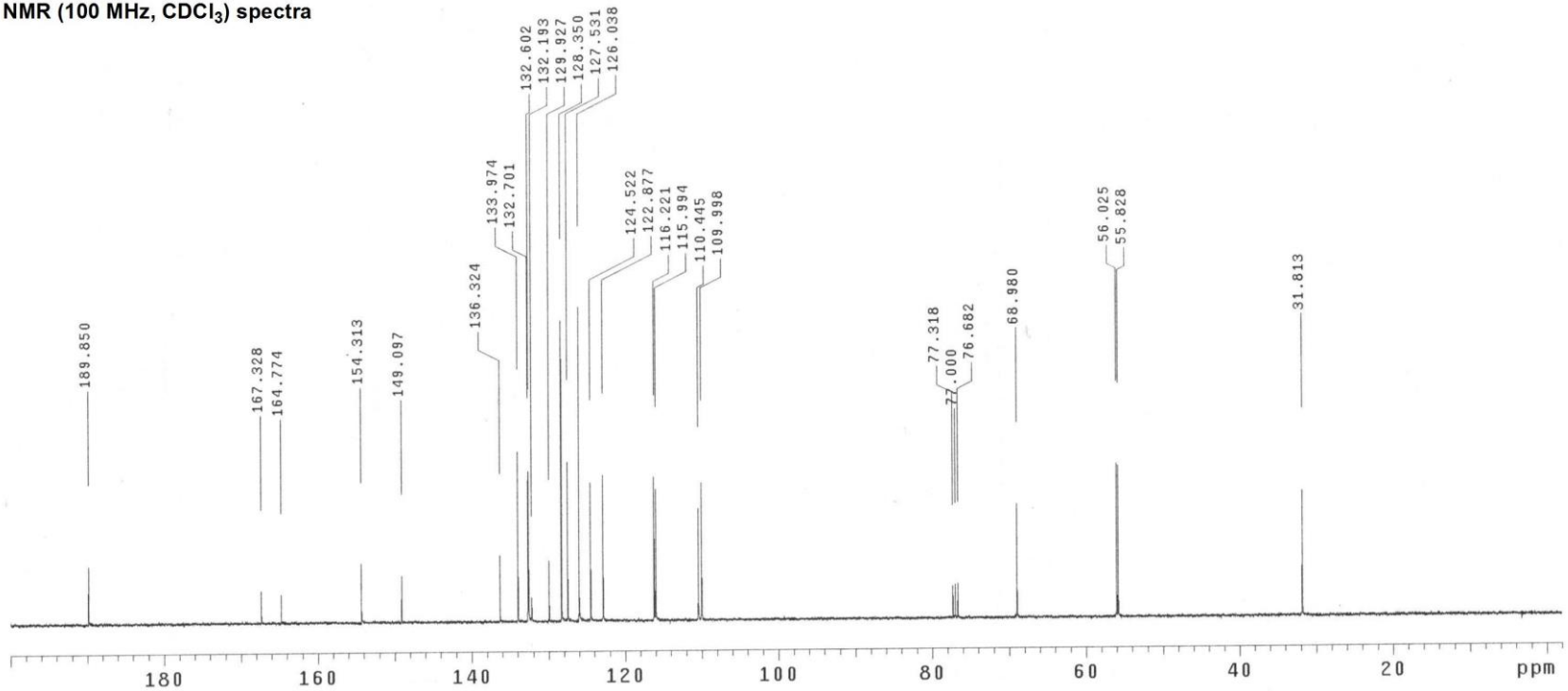
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Nov 6 2018
Solvent: CDCl3
Ambient temperature
Total 288 repetitions



Compound 4c

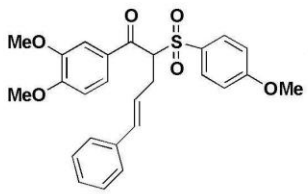
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4d (^{1}H-NMR spectral data-1)

KSOMeC

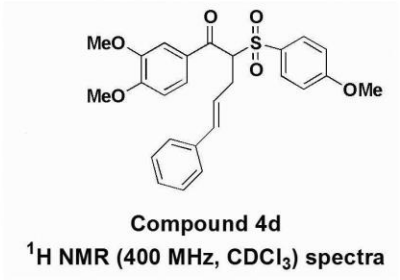
Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Nov 29 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4d

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4d (^{1}H-NMR spectral data-2)

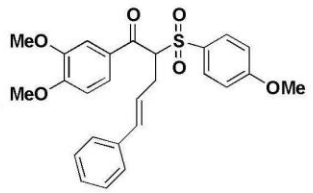


Compound 4d
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4d (^{13}C-NMR spectral data)

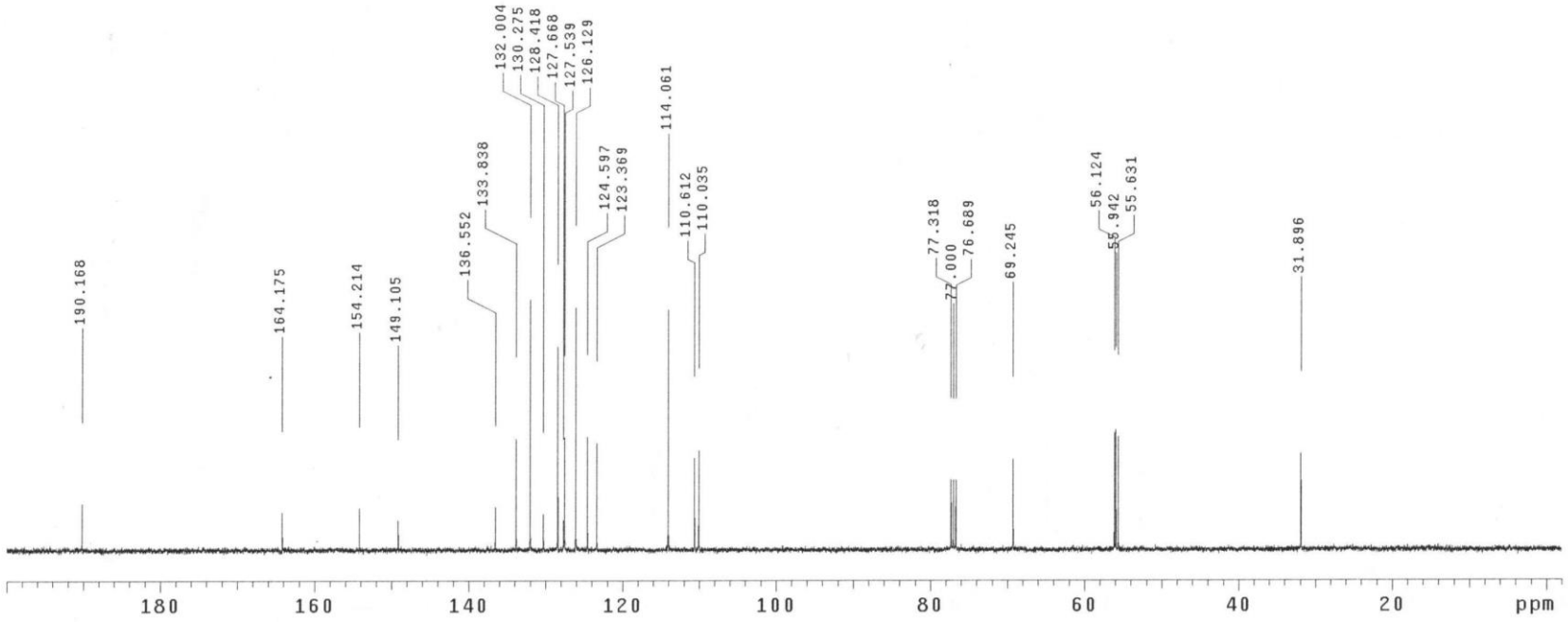
KSOMeC

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Nov 29 2018
Solvent: CDCl3
Ambient temperature
Total 720 repetitions



Compound 4d

^{13}C NMR (100 MHz, $CDCl_3$) spectra

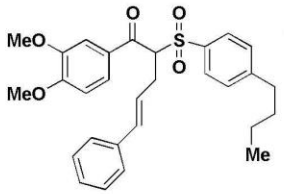


Compound 4e (^{1}H-NMR spectral data-1)

KSPhBuC

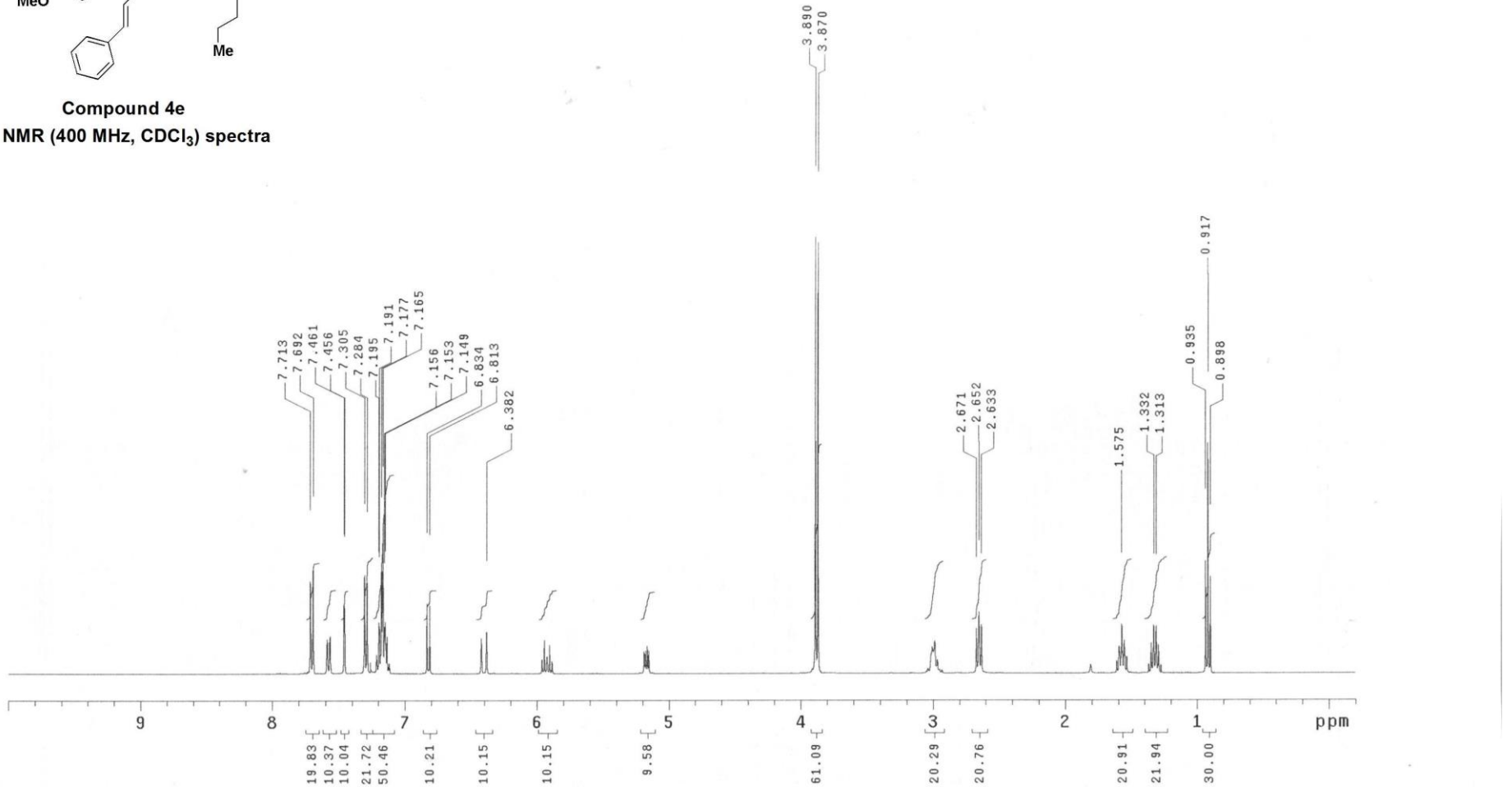
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 8 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

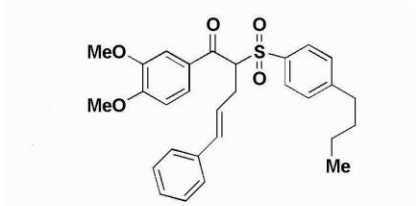


Compound 4e

^{1}H NMR (400 MHz, $CDCl_3$) spectra

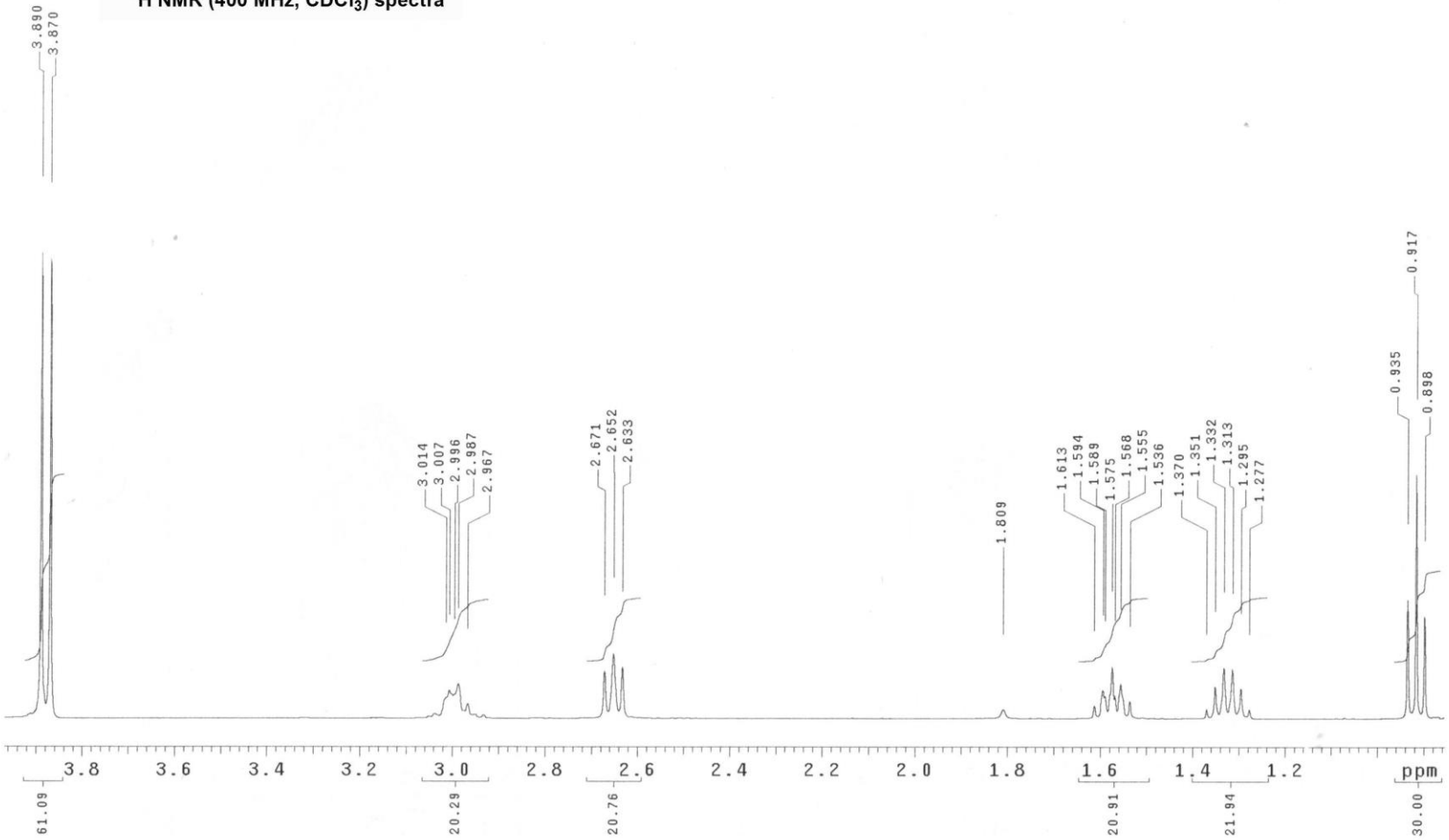


Compound 4e (^{1}H-NMR spectral data-2)



Compound 4e

^{1}H NMR (400 MHz, $CDCl_3$) spectra

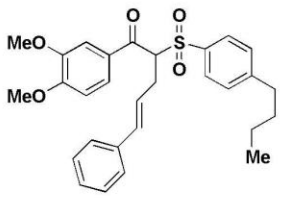


Compound 4e (^{13}C-NMR spectral data)

KSPhBuC

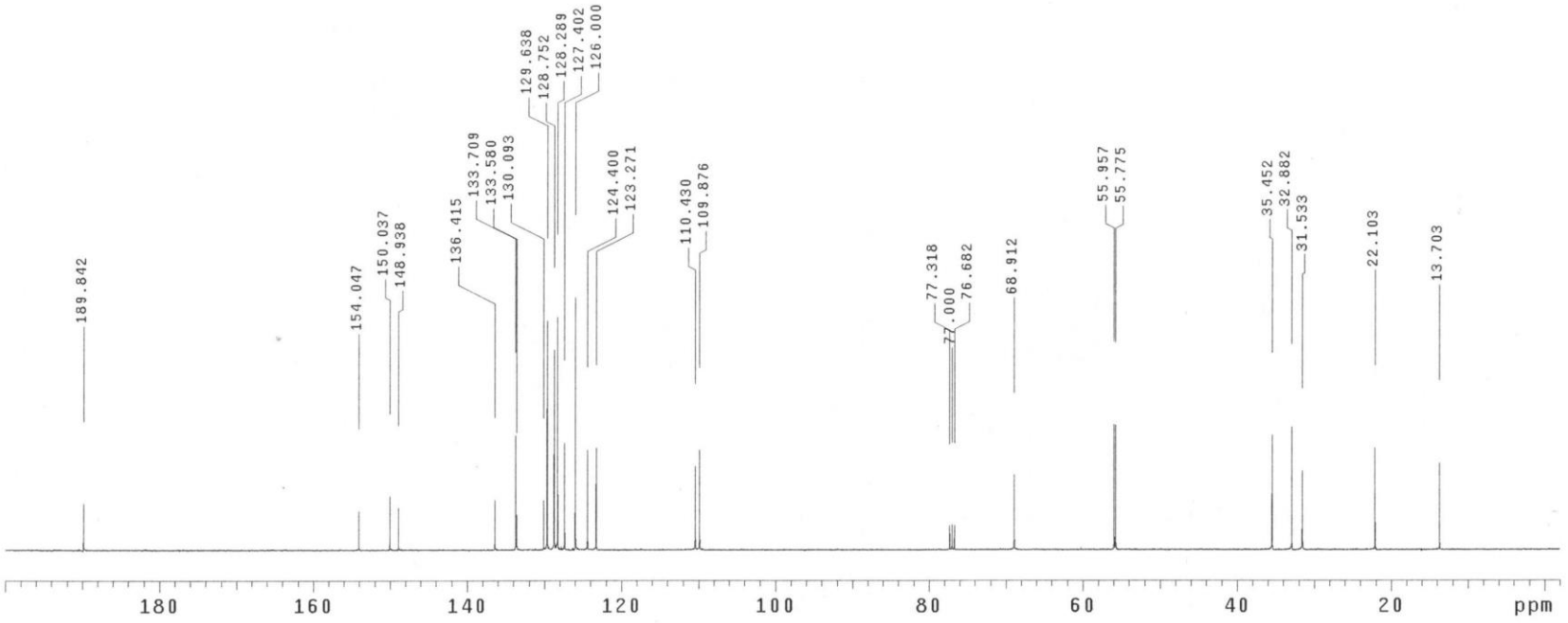
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 8 2019
Solvent: CDCl3
Ambient temperature
Total 1536 repetitions



Compound 4e

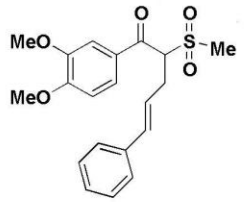
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4f (^{1}H-NMR spectral data-1)

KSMsC

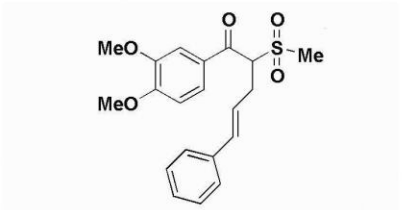
Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Dec 4 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



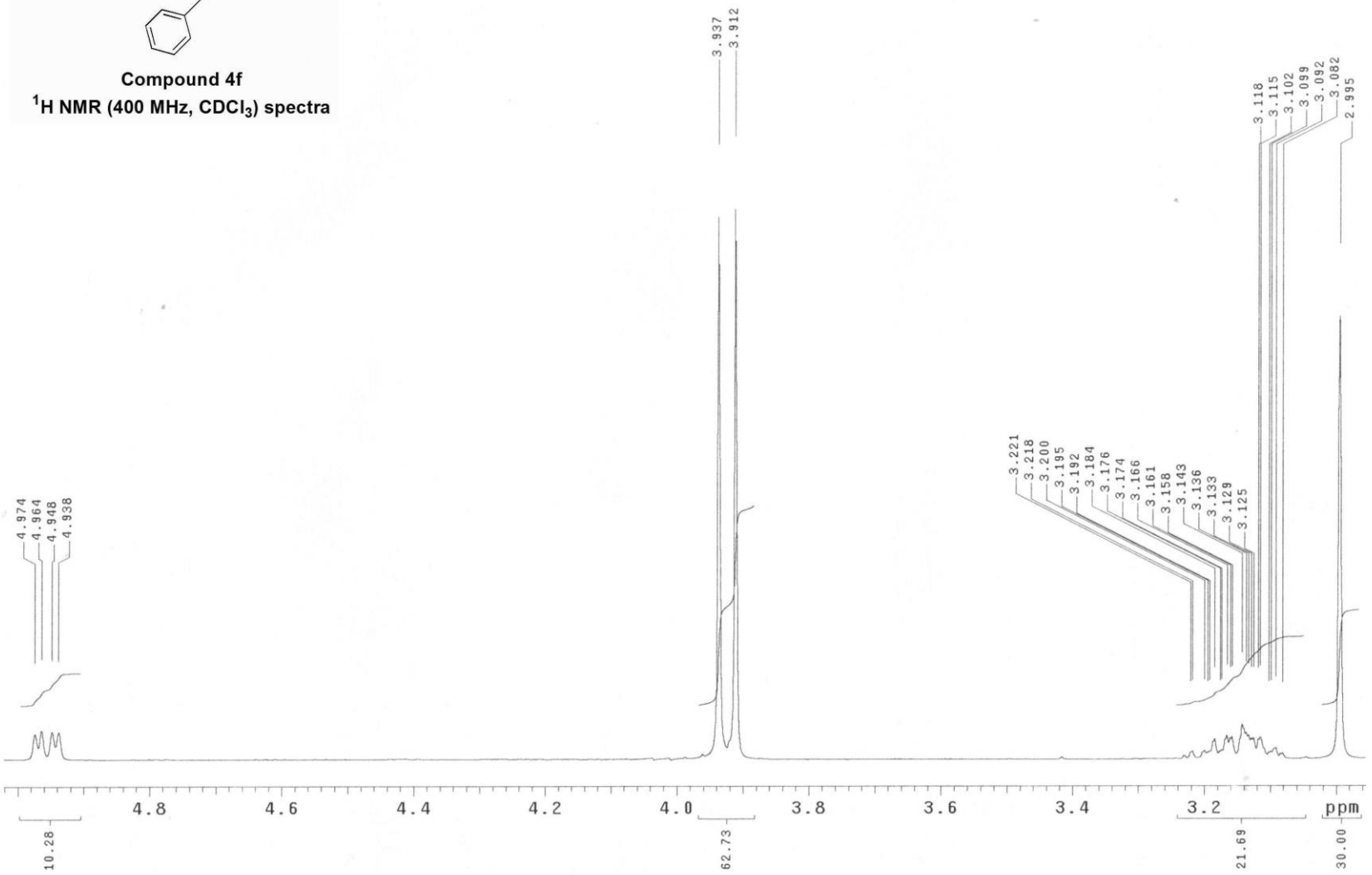
Compound 4f

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4f (^{1}H-NMR spectral data-2)



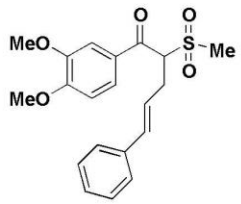
Compound 4f
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 4f (^{13}C-NMR spectral data)

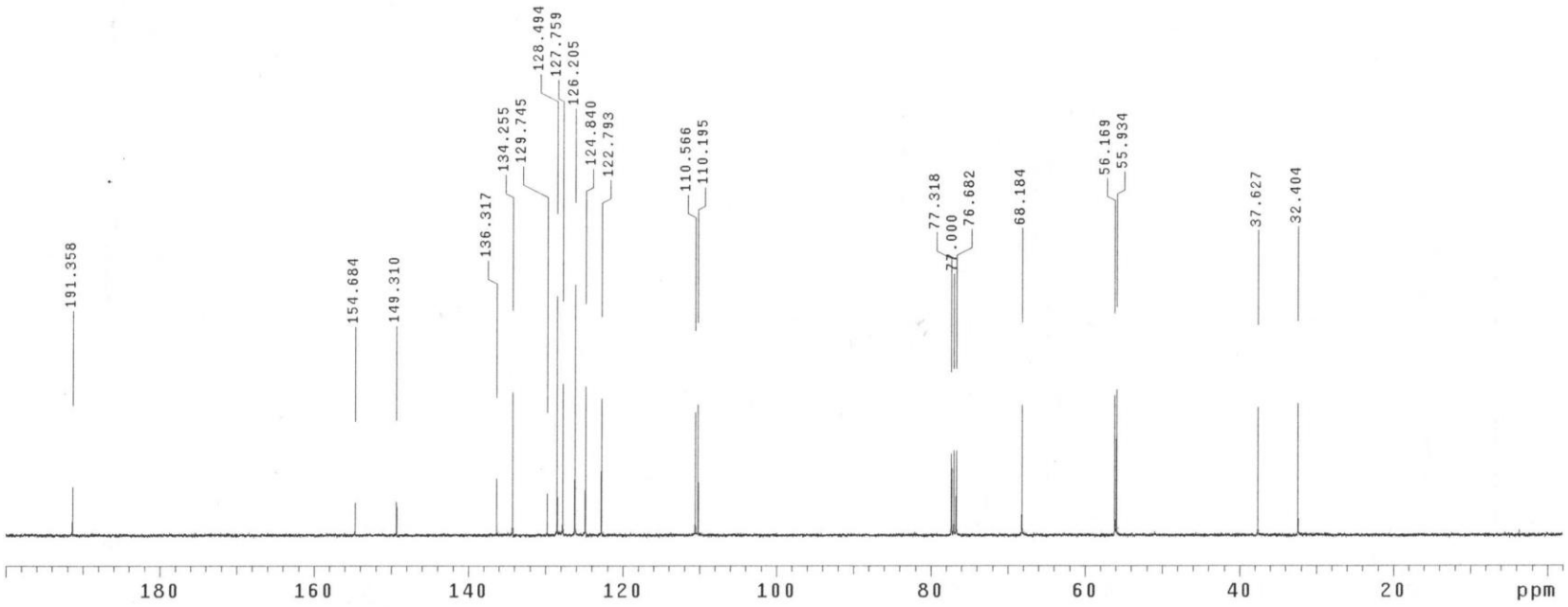
KSMsC

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Dec 4 2018
Solvent: CDCl3
Ambient temperature
Total 2592 repetitions



Compound 4f

^{13}C NMR (100 MHz, $CDCl_3$) spectra

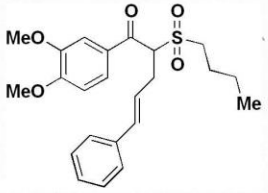


Compound 4g (^{1}H-NMR spectral data-1)

KSBuC

Pulse Sequence: s2pul

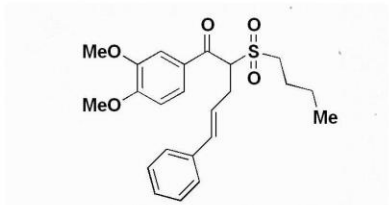
UNITYplus-400 "unity400"
Date: Nov 30 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4g

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4g (^{1}H-NMR spectral data-2)



Compound 4g
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4g (^{13}C-NMR spectral data)

KSBuC

Pulse Sequence: s2pul

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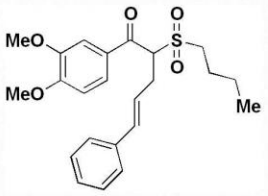
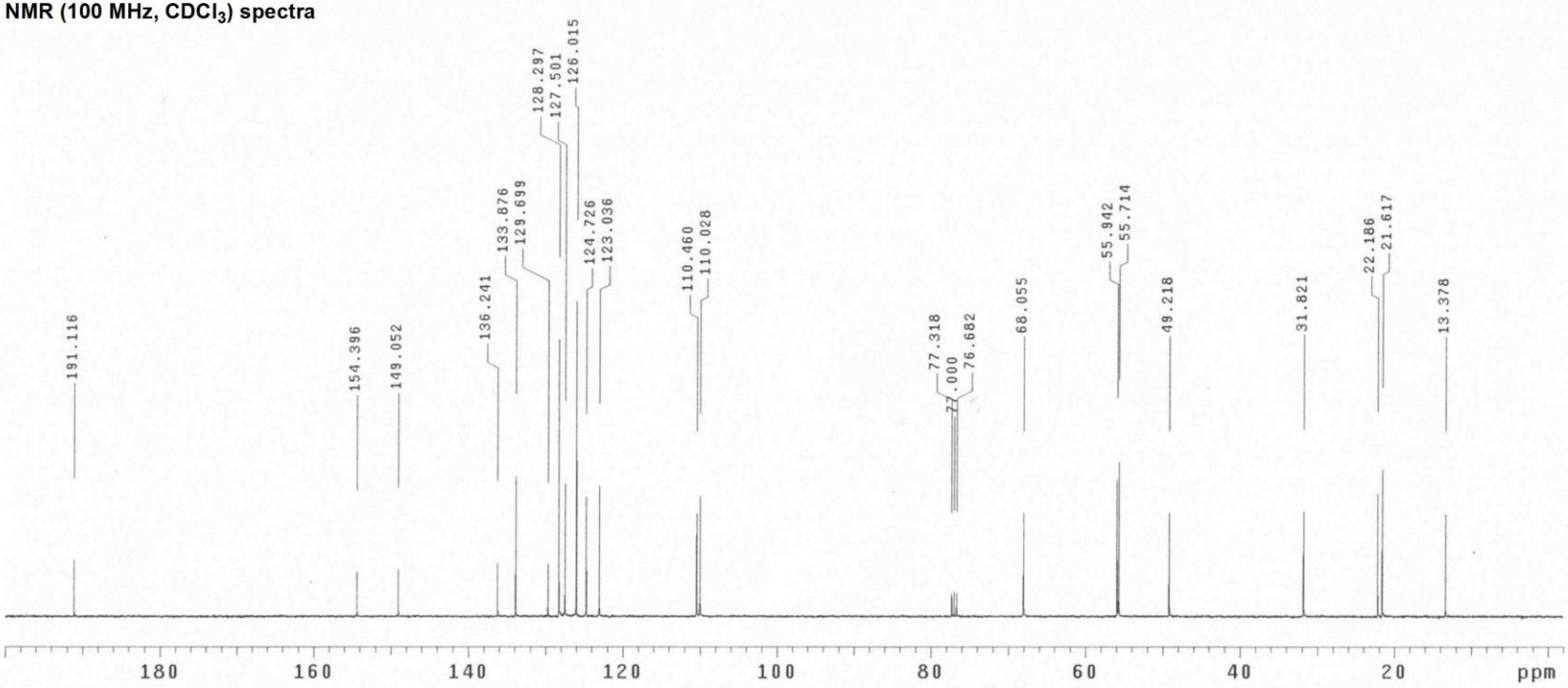
Date: Nov 30 2018
Solvent: CDCl3
Ambient temperature
Total 320 repetitions



Compound 4g

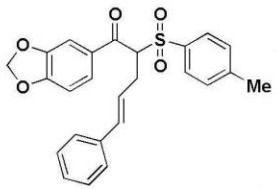
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4h (^{1}H-NMR spectral data-1)

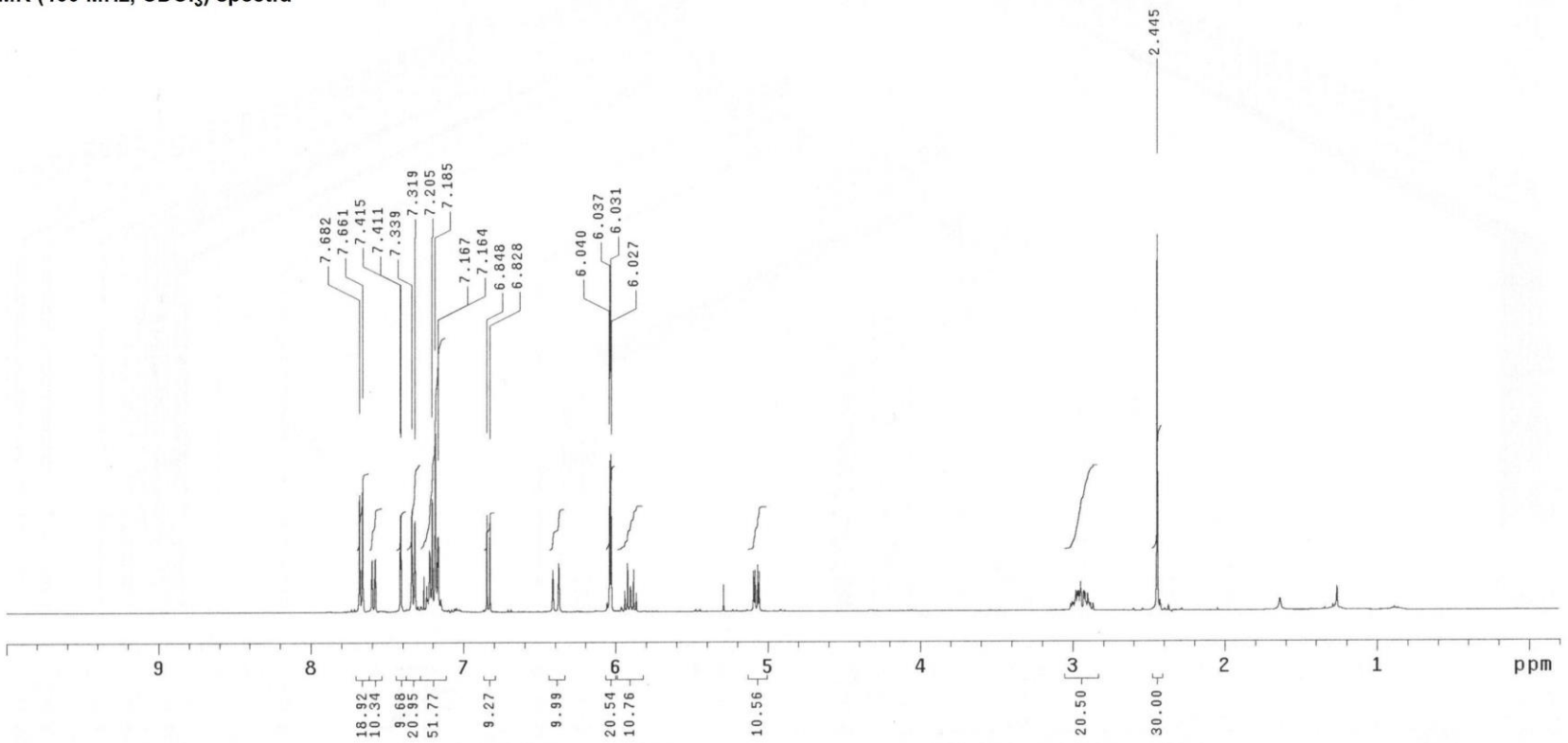
KSE1C

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Aug 29 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

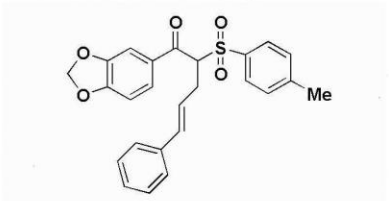


Compound 4h

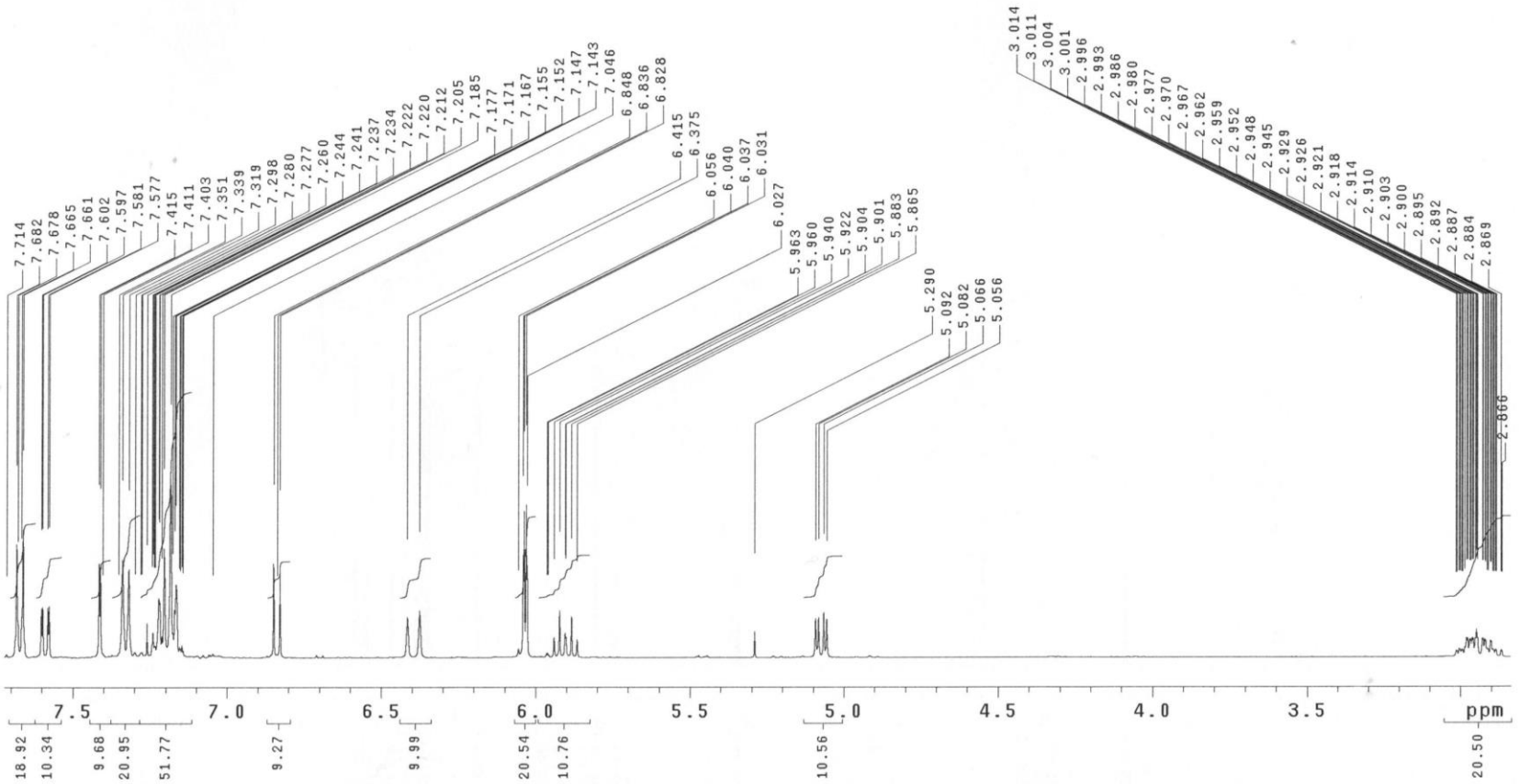
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 4h (^{1}H-NMR spectral data-2)



Compound 4h
^{1}H NMR (400 MHz, $CDCl_3$) spectra

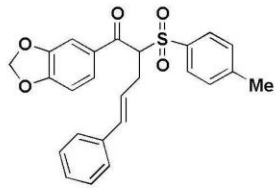


Compound 4h (^{13}C-NMR spectral data)

KSE1C

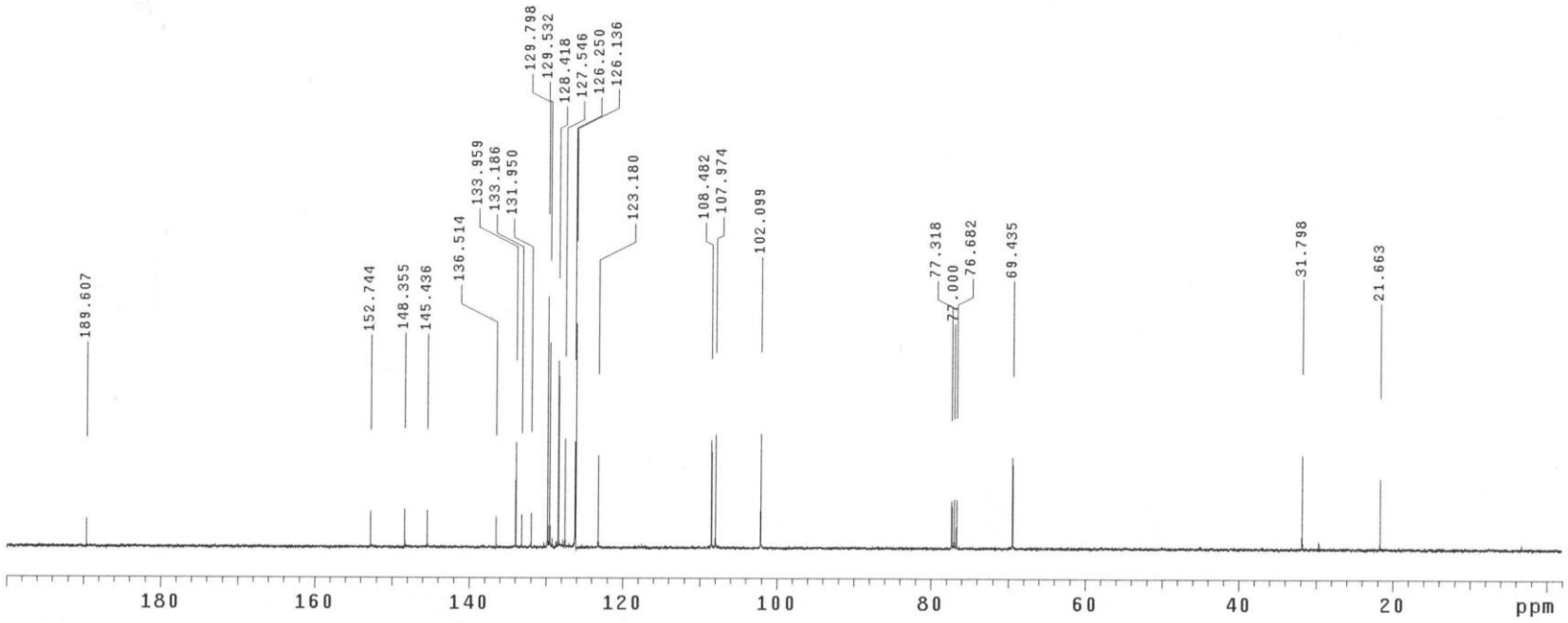
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Aug 29 2018
Solvent: CDCl3
Ambient temperature
Total 1024 repetitions



Compound 4h

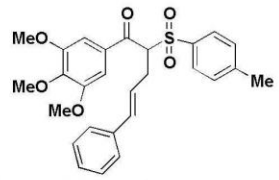
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4i (^{1}H-NMR spectral data-1)

KSE5C

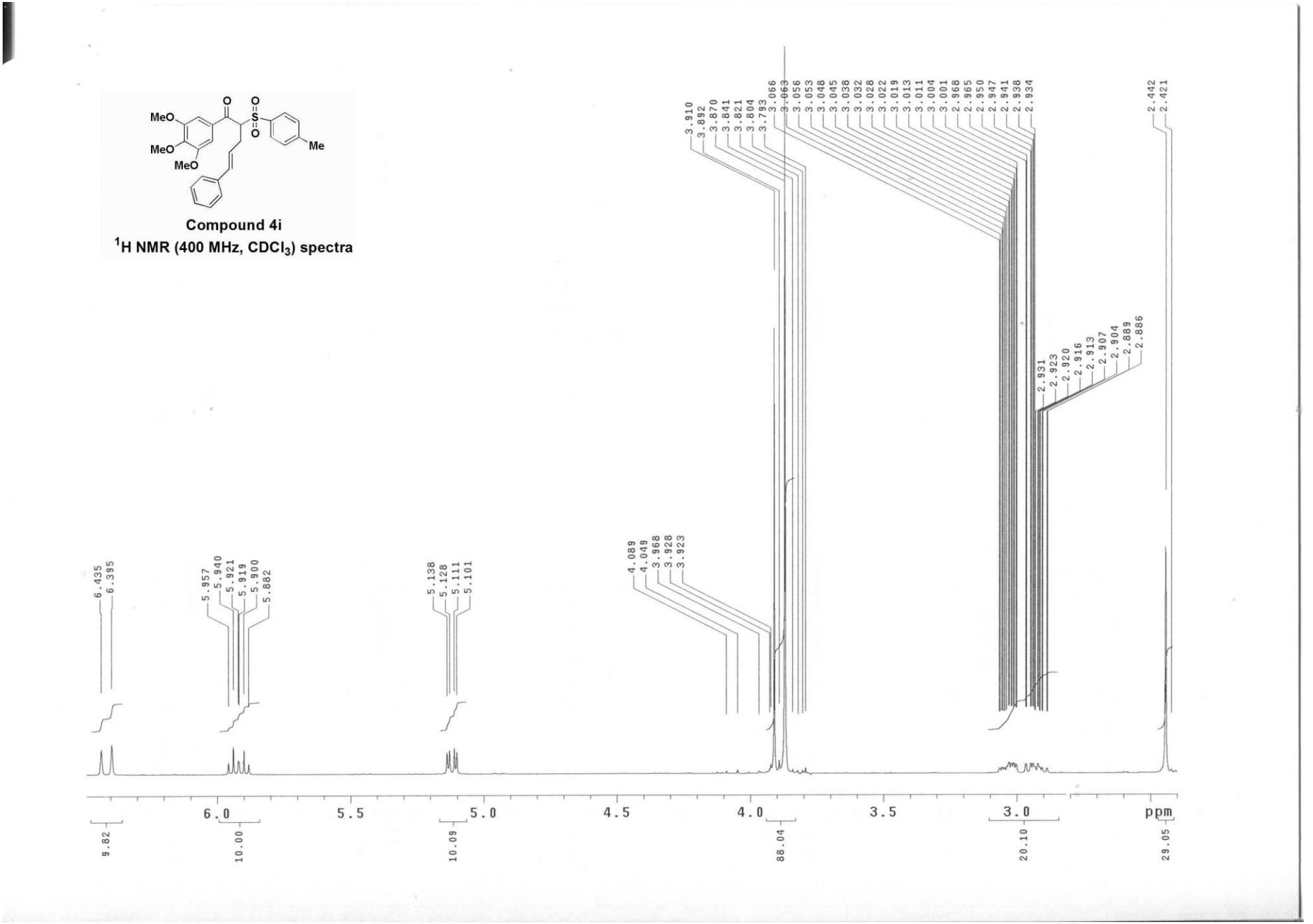
Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Sep 11 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4i

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4i (^{1}H-NMR spectral data-2)

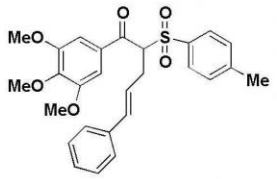


Compound 4i (^{13}C-NMR spectral data)

KSE5C

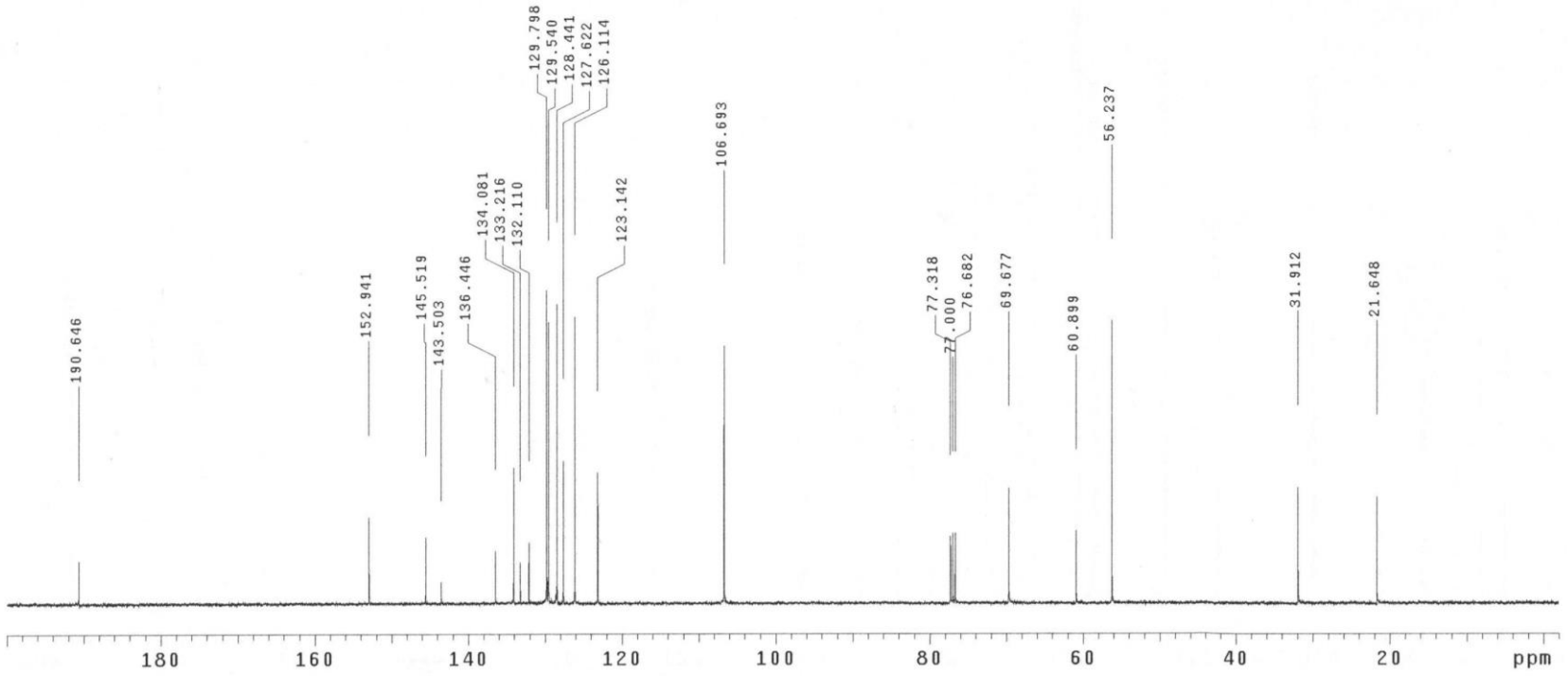
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Sep 11 2018
Solvent: CDCl3
Ambient temperature
Total 1360 repetitions

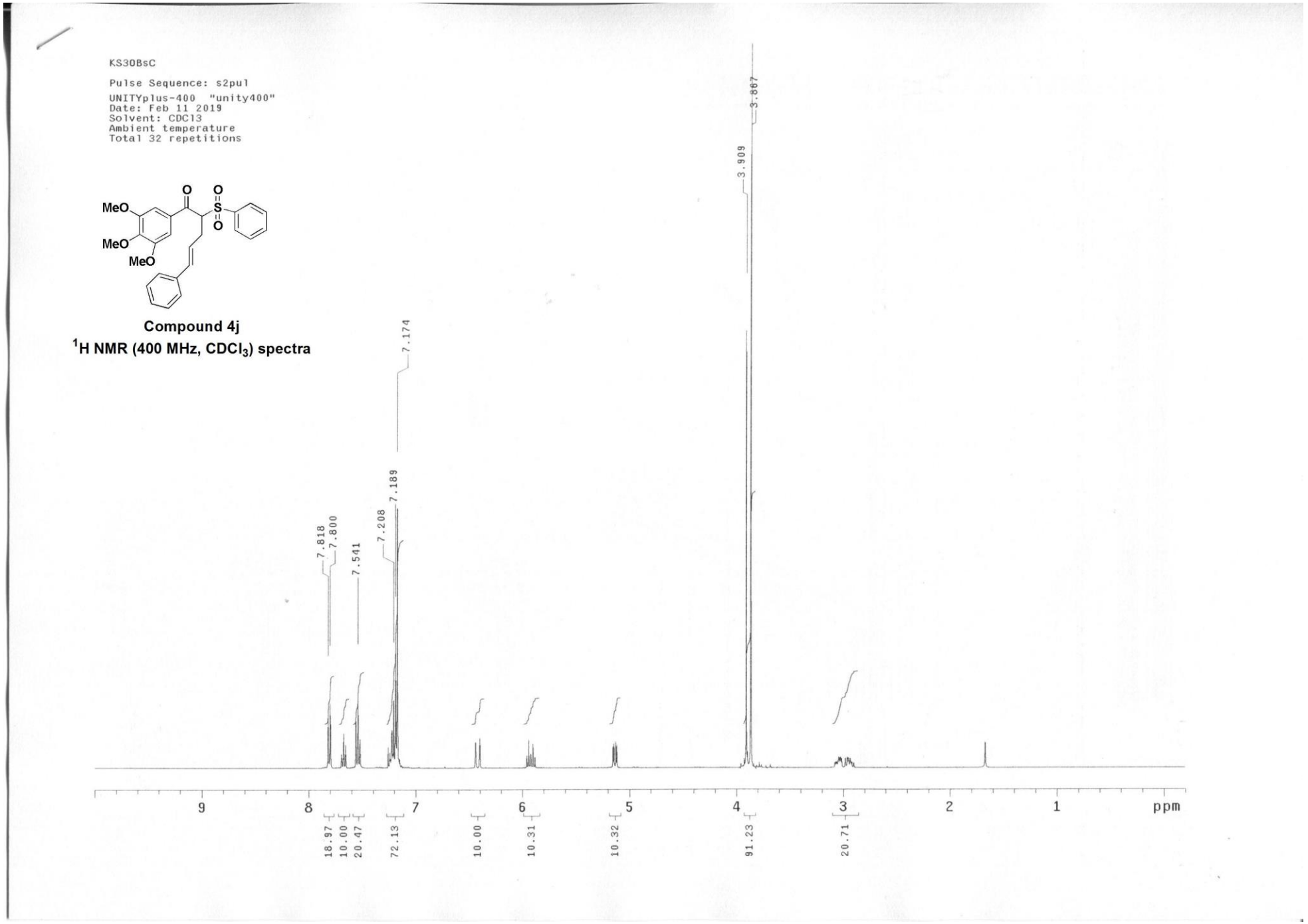


Compound 4i

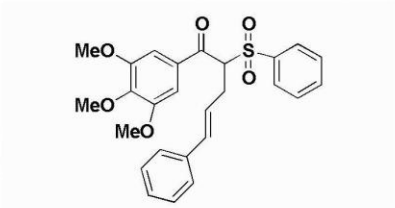
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4j (^{1}H-NMR spectral data-1)



Compound 4j (^{1}H-NMR spectral data-2)

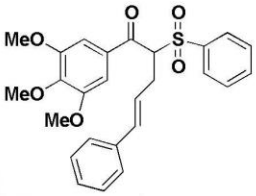


Compound 4j

^{1}H NMR (400 MHz, $CDCl_3$) spectra

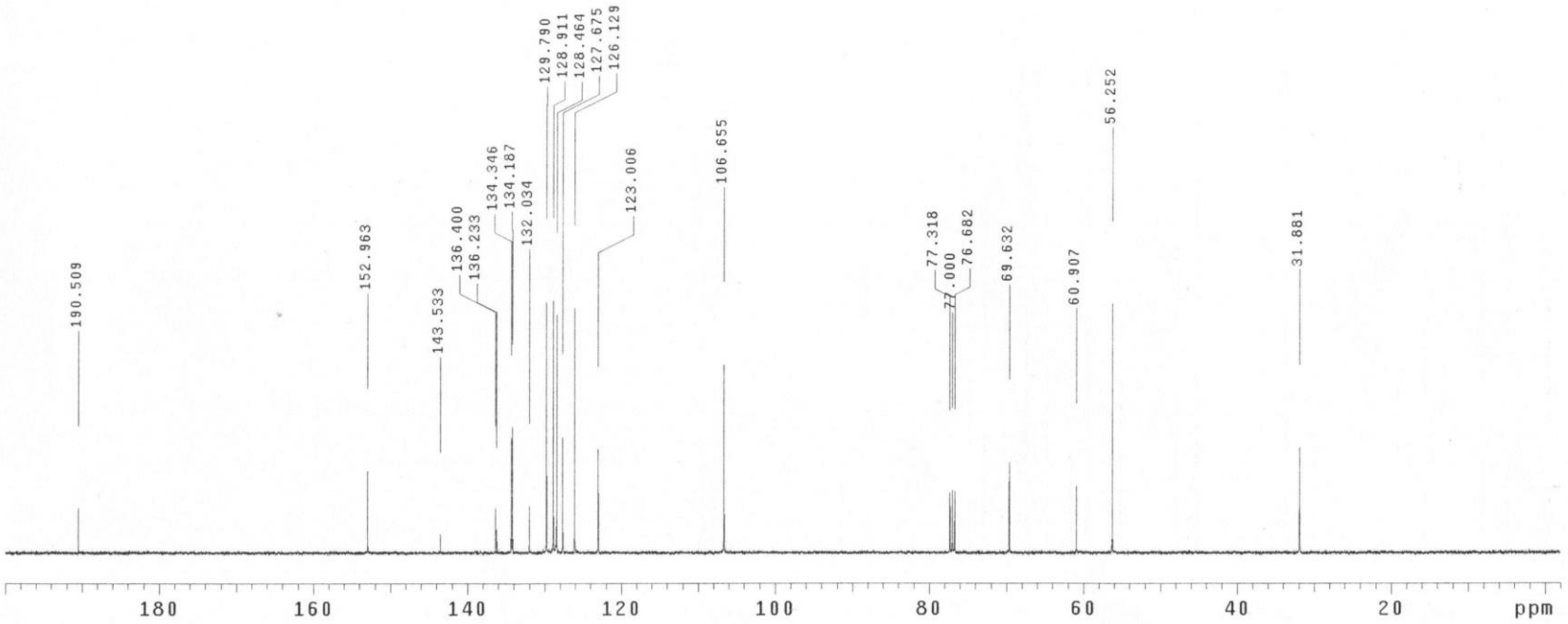
Compound 4j (^{13}C-NMR spectral data)

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Feb 11 2019
Solvent: CDCl3
Ambient temperature
Total 1424 repetitions

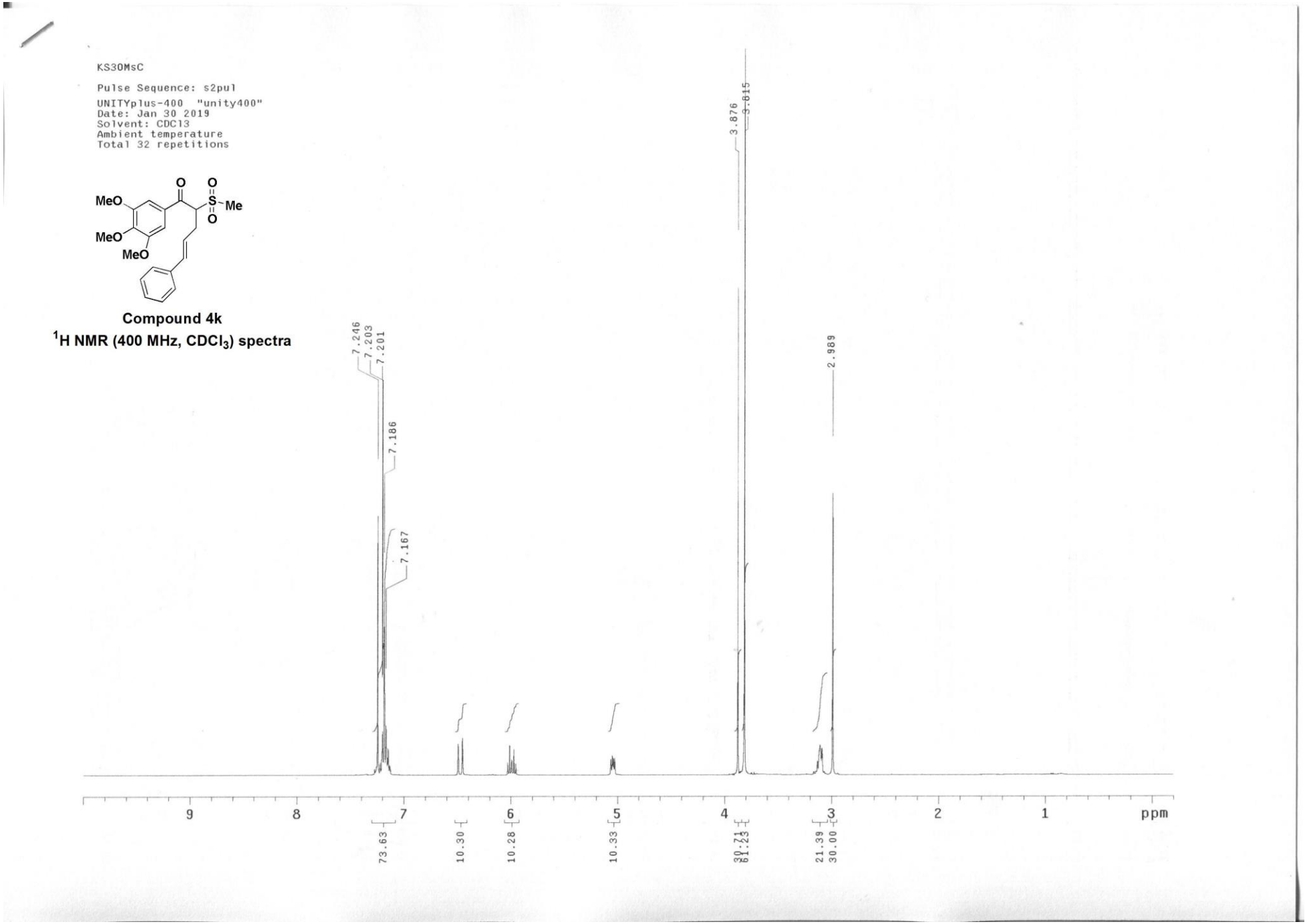


Compound 4j

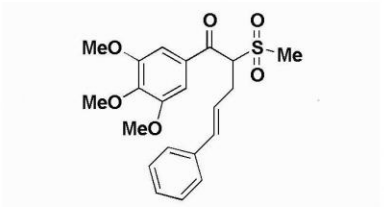
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4k (^{1}H-NMR spectral data-1)



Compound 4k (^{1}H-NMR spectral data-2)



Compound 4k

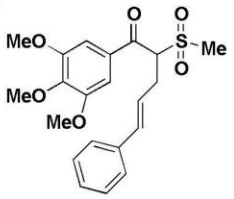
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4k (^{13}C-NMR spectral data)

KS30MsC

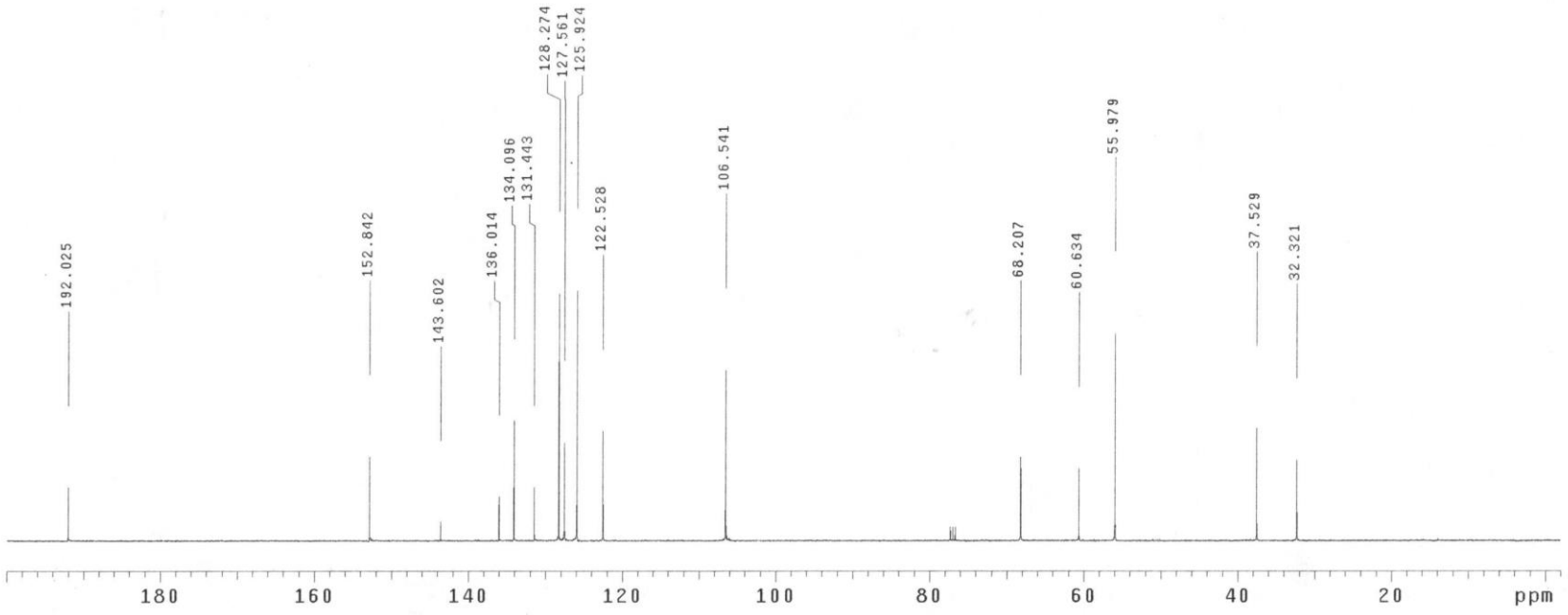
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 30 2019
Solvent: CDCl3
Ambient temperature
Total 368 repetitions



Compound 4k

^{13}C NMR (100 MHz, $CDCl_3$) spectra

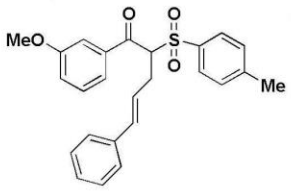


Compound 4l (^{1}H-NMR spectral data-1)

KSE2C

Pulse Sequence: s2pul

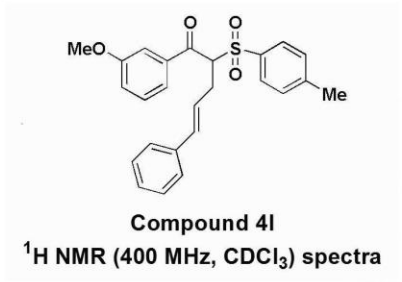
UNITYplus-400 "unity400"
Date: Aug 29 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4l

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4l (^{1}H-NMR spectral data-2)



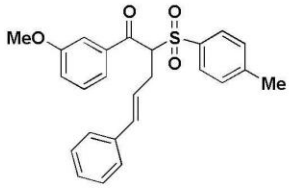
Compound 4l
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4l (^{13}C-NMR spectral data)

KSE2C

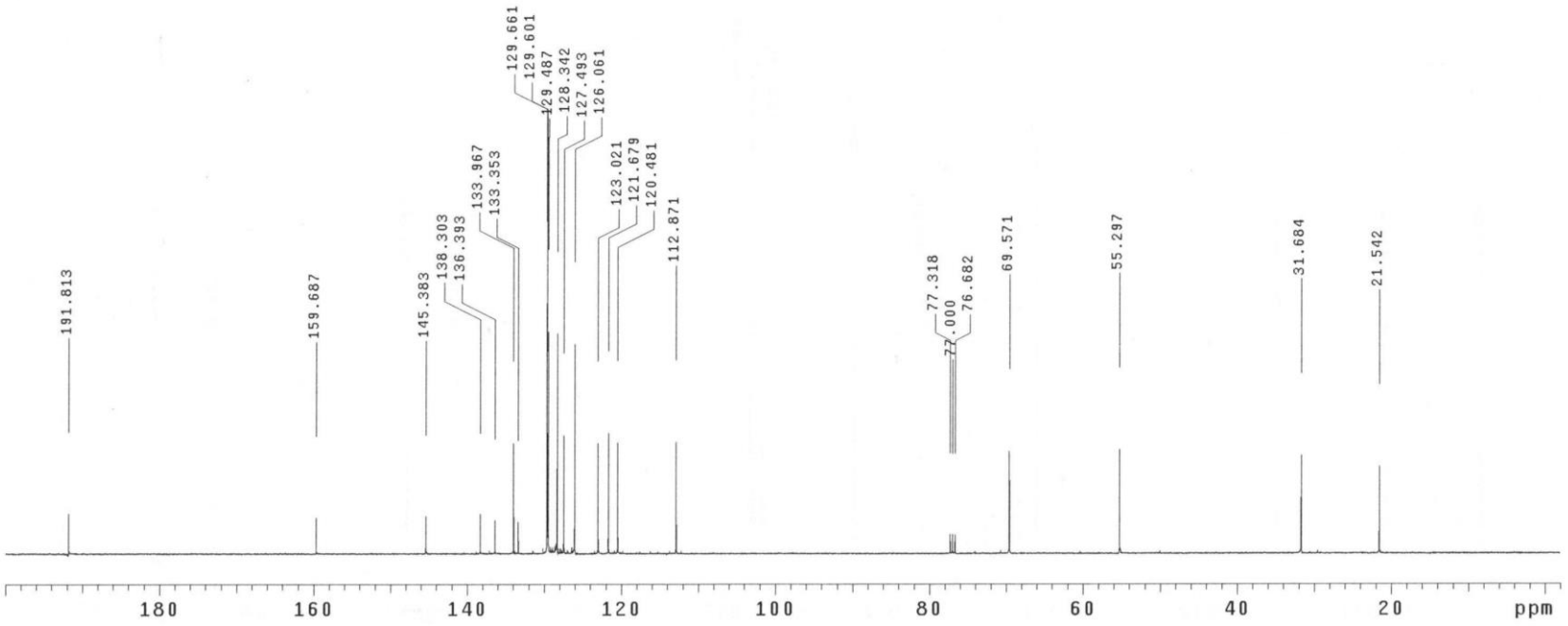
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Aug 29 2018
Solvent: CDCl3
Ambient temperature
Total 1024 repetitions



Compound 4l

^{13}C NMR (100 MHz, $CDCl_3$) spectra

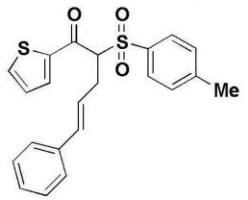


Compound 4m (^{1}H-NMR spectral data-1)

KSE4C

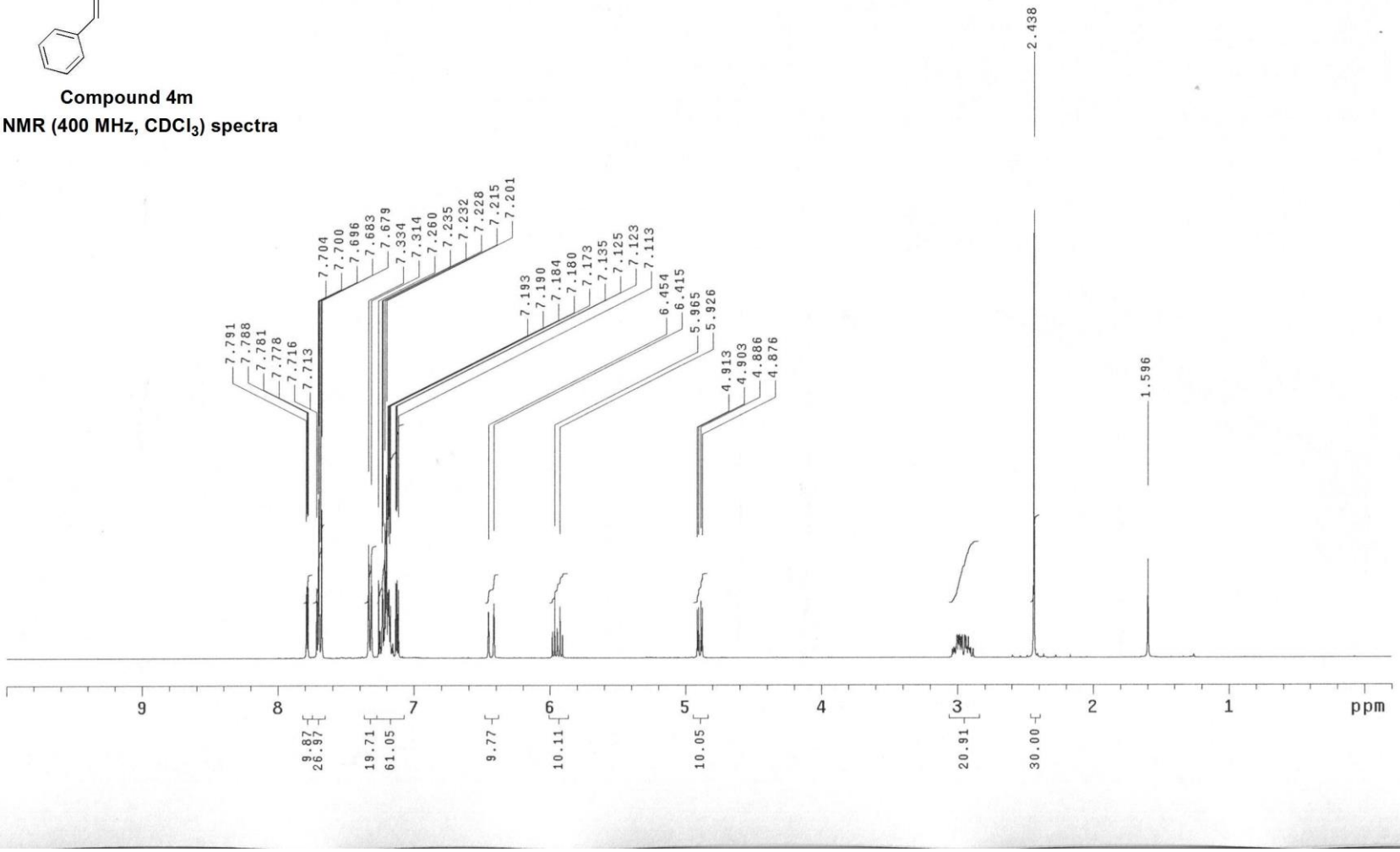
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Sep 4 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

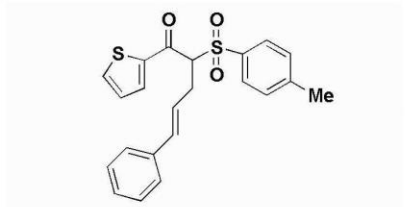


Compound 4m

^{1}H NMR (400 MHz, $CDCl_3$) spectra

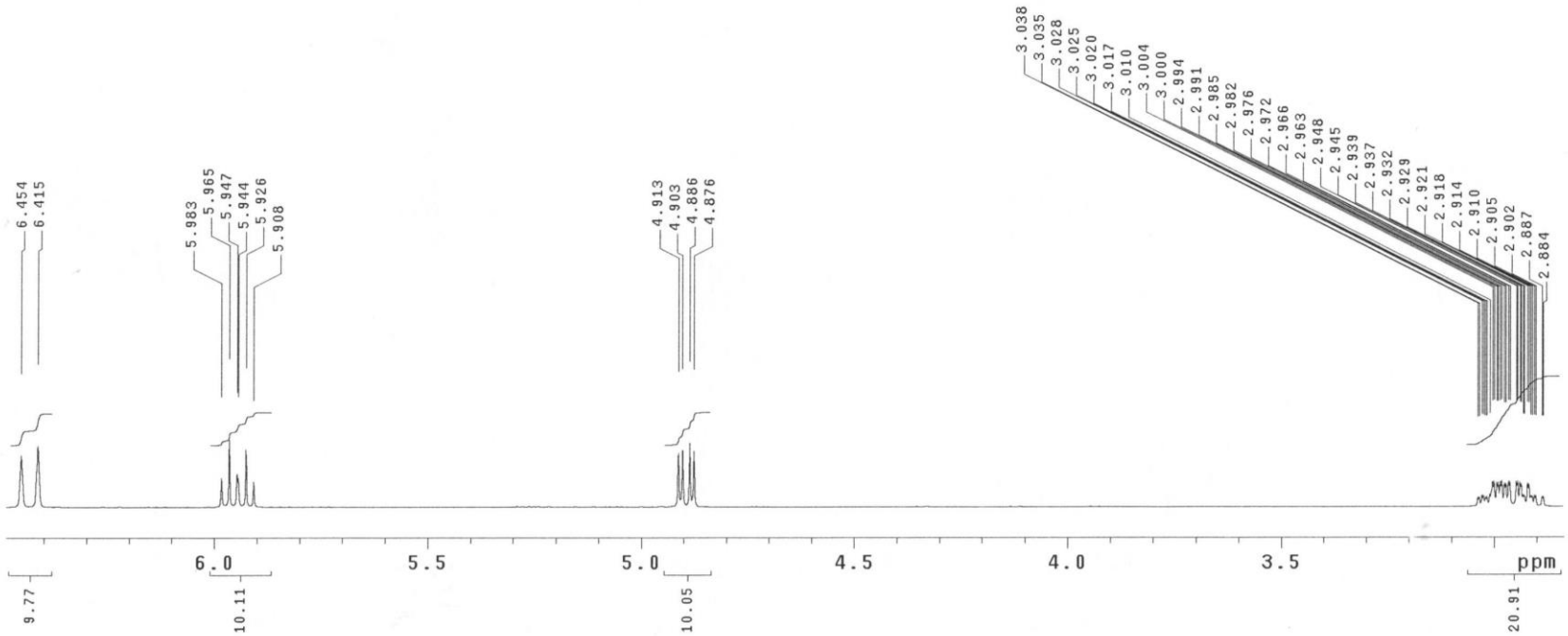


Compound 4m (^{1}H-NMR spectral data-2)



Compound 4m

^{1}H NMR (400 MHz, $CDCl_3$) spectra

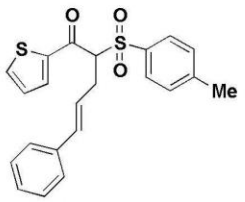


Compound 4m (^{13}C-NMR spectral data)

KSE4C

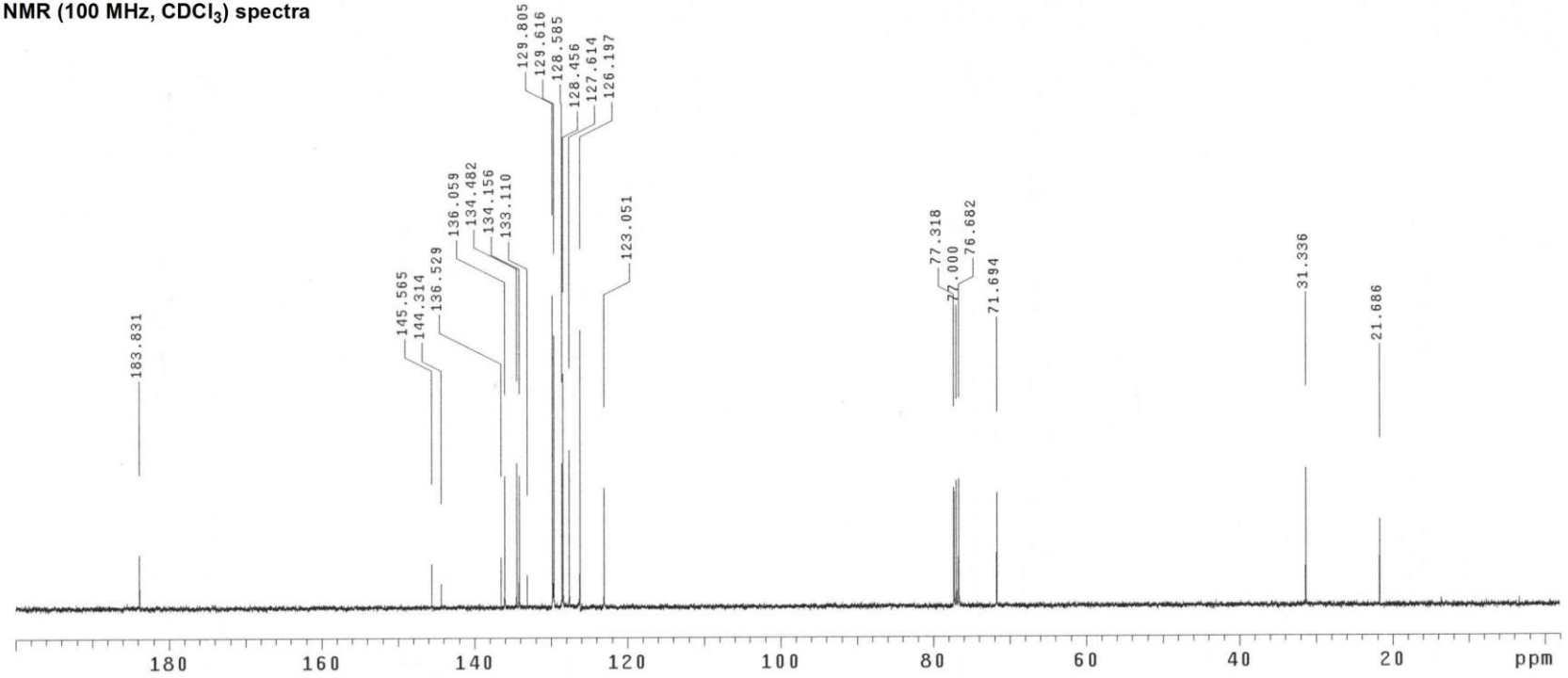
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Sep 4 2018
Solvent: CDCl3
Ambient temperature
Total 1952 repetitions



Compound 4m

^{13}C NMR (100 MHz, $CDCl_3$) spectra

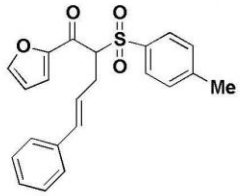


Compound 4n (^{1}H-NMR spectral data-1)

KSE3C

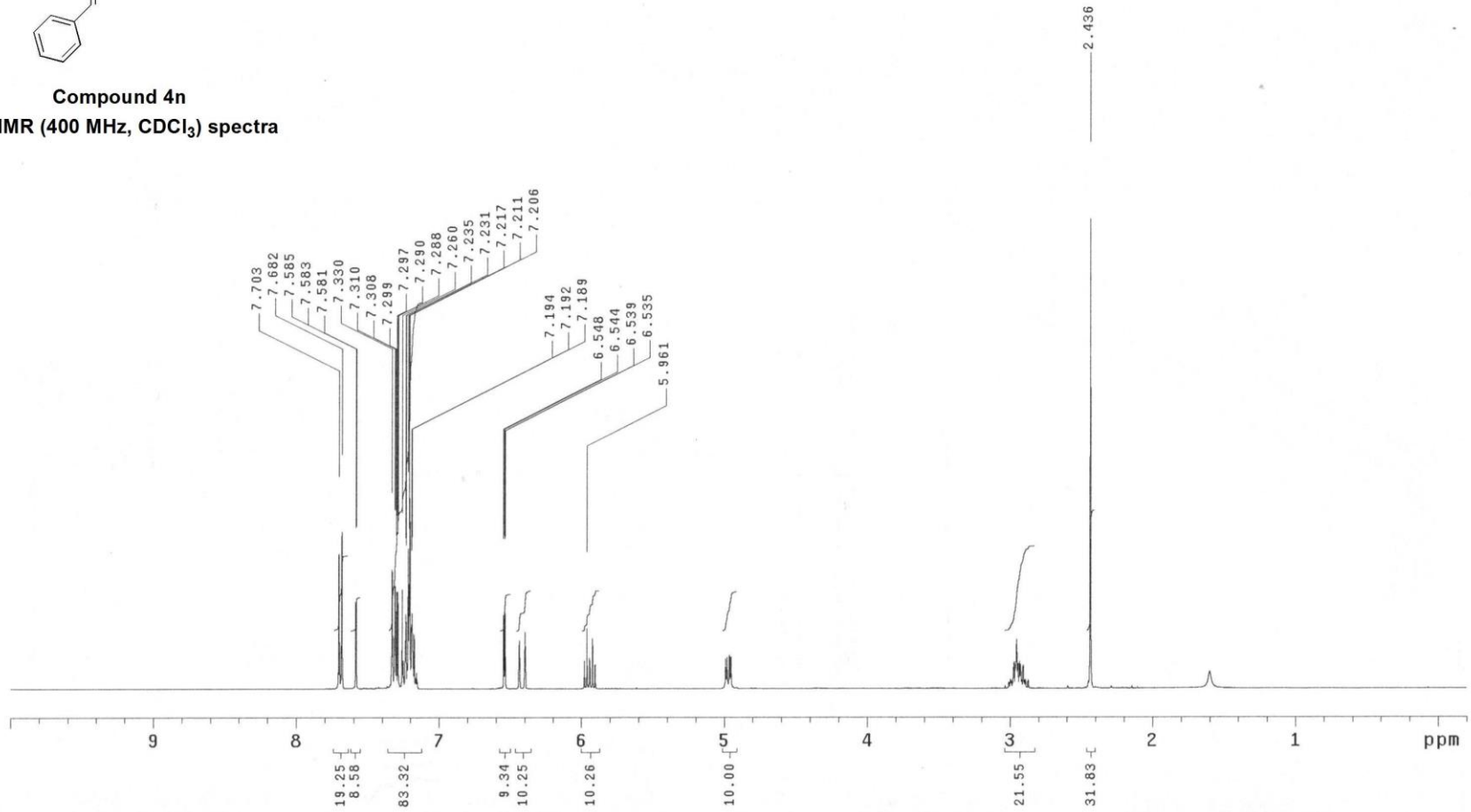
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Sep 6 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

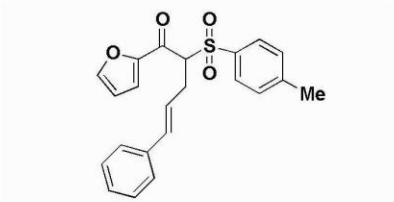


Compound 4n

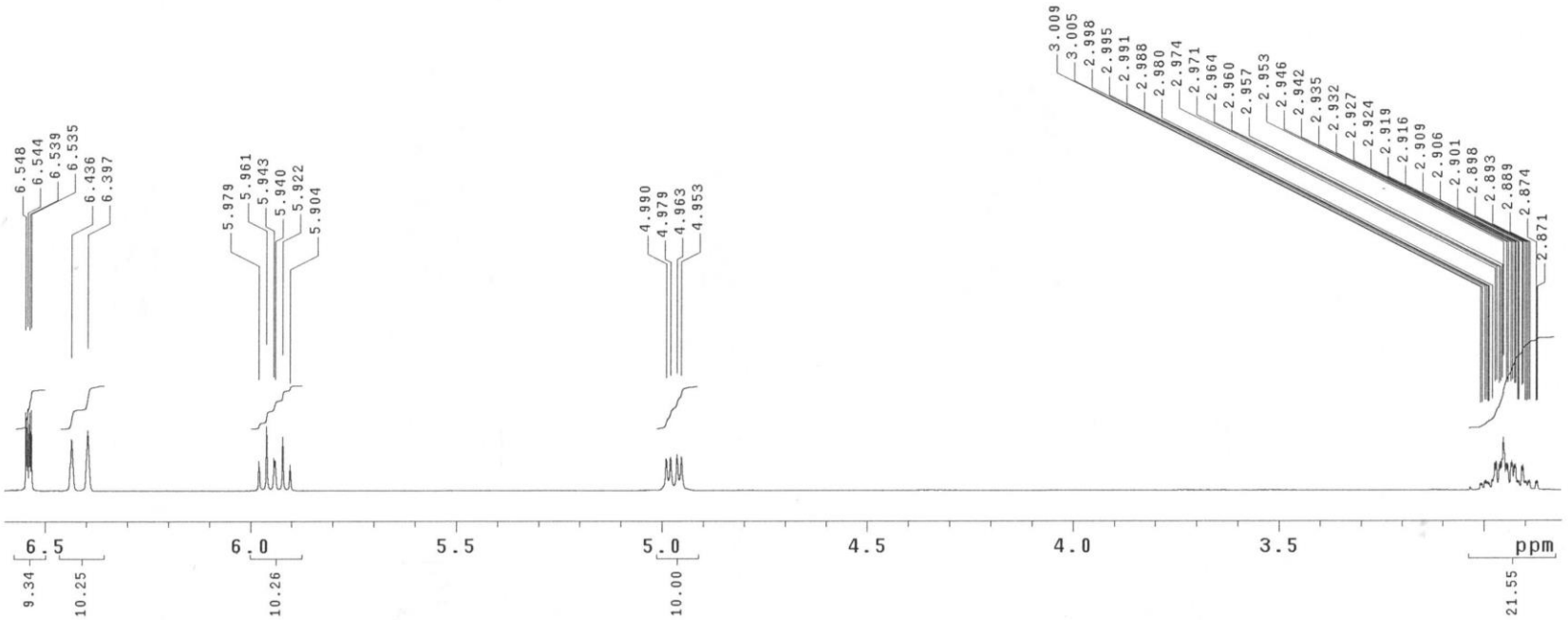
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 4n (^{1}H-NMR spectral data-2)

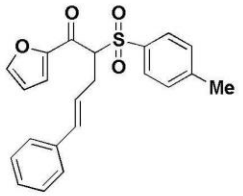


Compound 4n
^{1}H NMR (400 MHz, $CDCl_3$) spectra



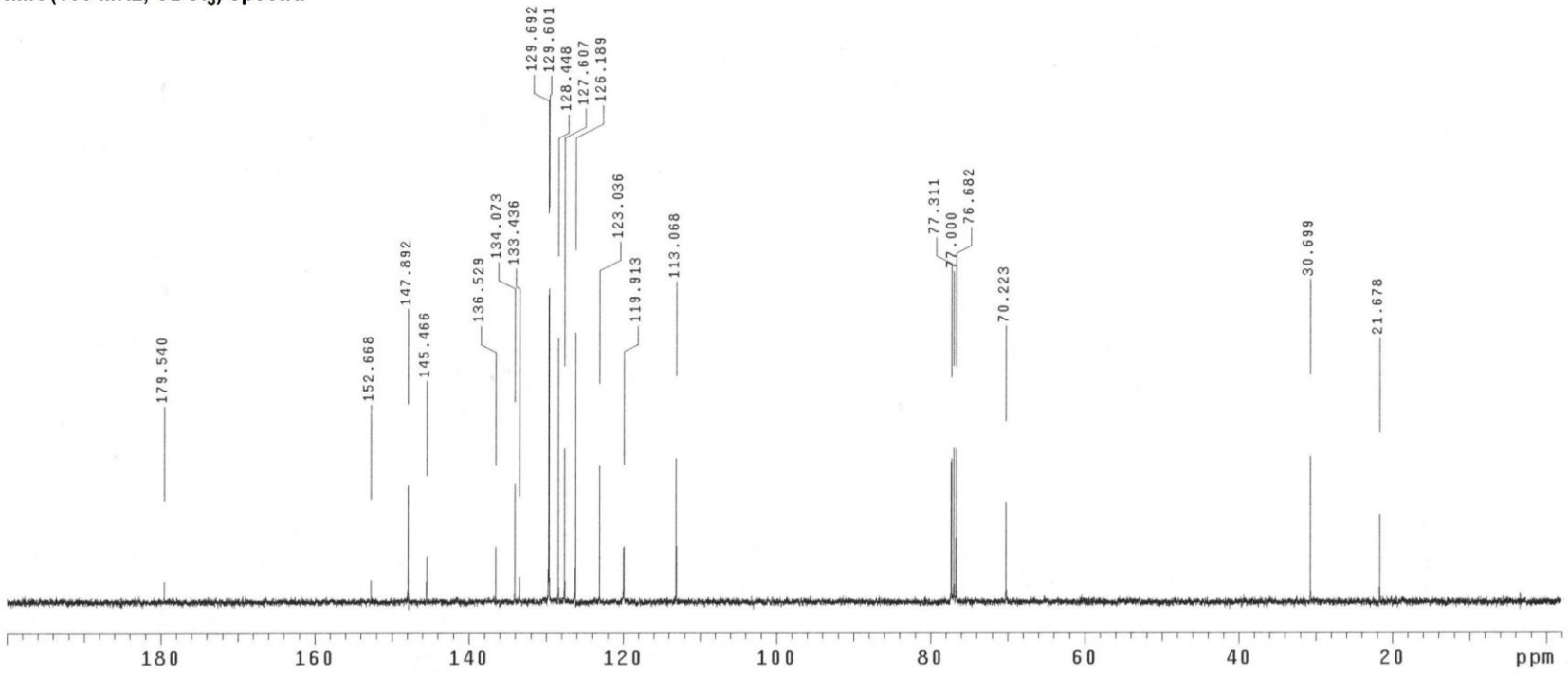
Compound 4n (^{13}C-NMR spectral data)

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Sep 6 2018
Solvent: CDCl3
Ambient temperature
Total 1408 repetitions



Compound 4n

^{13}C NMR (100 MHz, $CDCl_3$) spectra

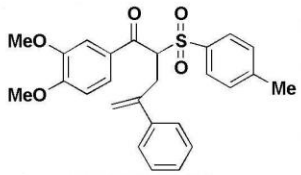


Compound 4o (^{1}H-NMR spectral data-1)

KSTSBr

Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Feb 21 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4o

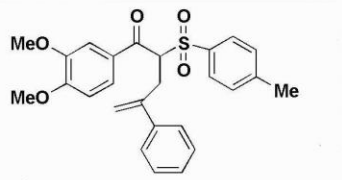
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4o (^{1}H-NMR spectral data-2)

KSTSBr

Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Feb 21 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4o

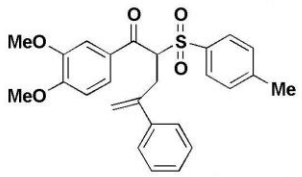
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4o (^{13}C-NMR spectral data)

KSTSBr

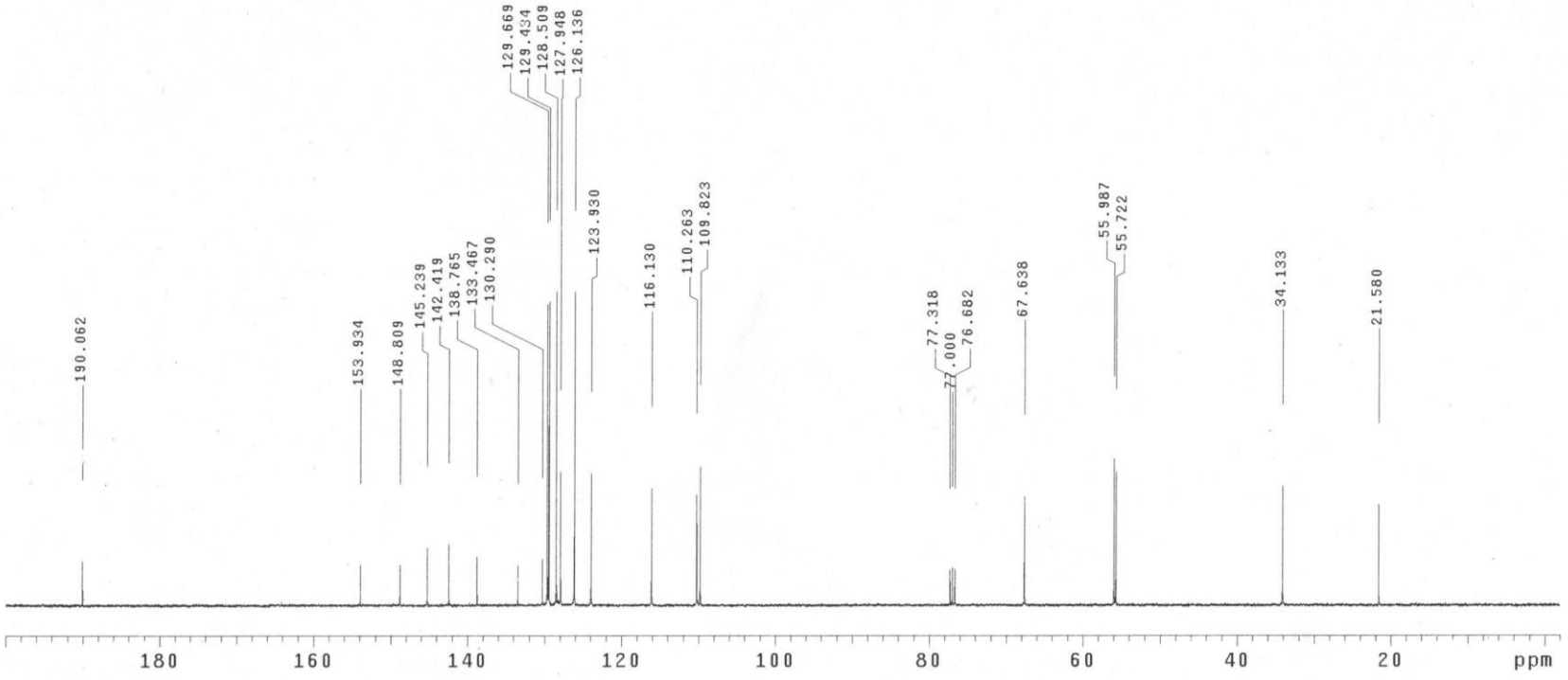
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Feb 21 2019
Solvent: CDCl3
Ambient temperature
Total 560 repetitions



Compound 4o

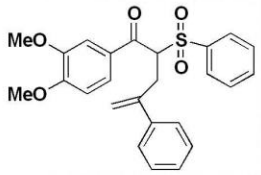
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4p (^{1}H-NMR spectral data-1)

KSBSD

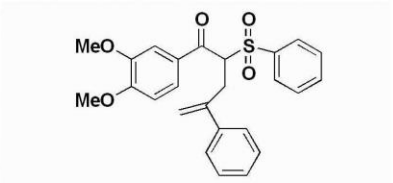
Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Mar 8 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



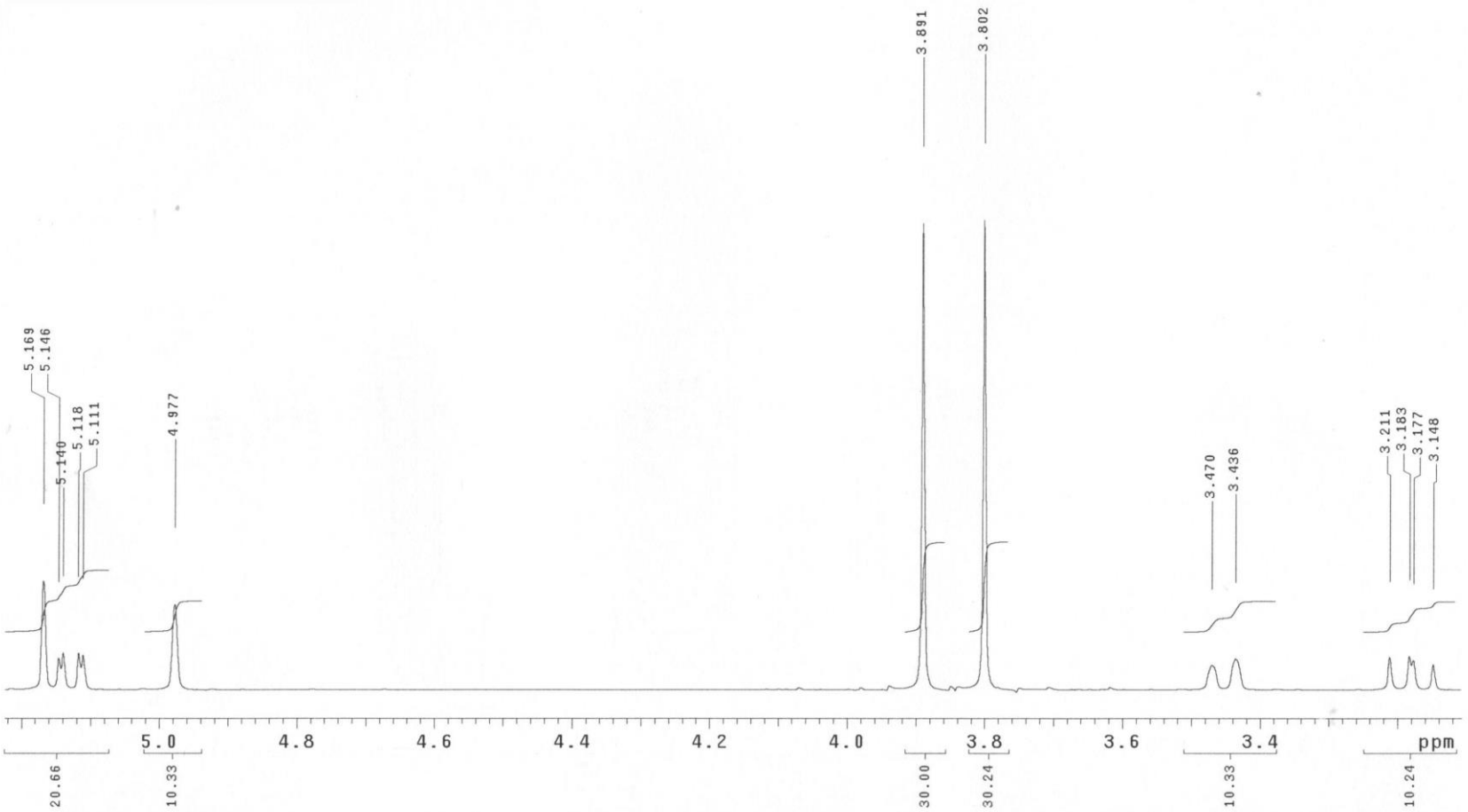
Compound 4p

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4p (^{1}H-NMR spectral data-2)



Compound 4p
^{1}H NMR (400 MHz, $CDCl_3$) spectra

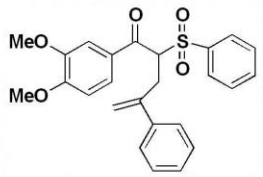


Compound 4p (^{13}C-NMR spectral data)

KSBSD

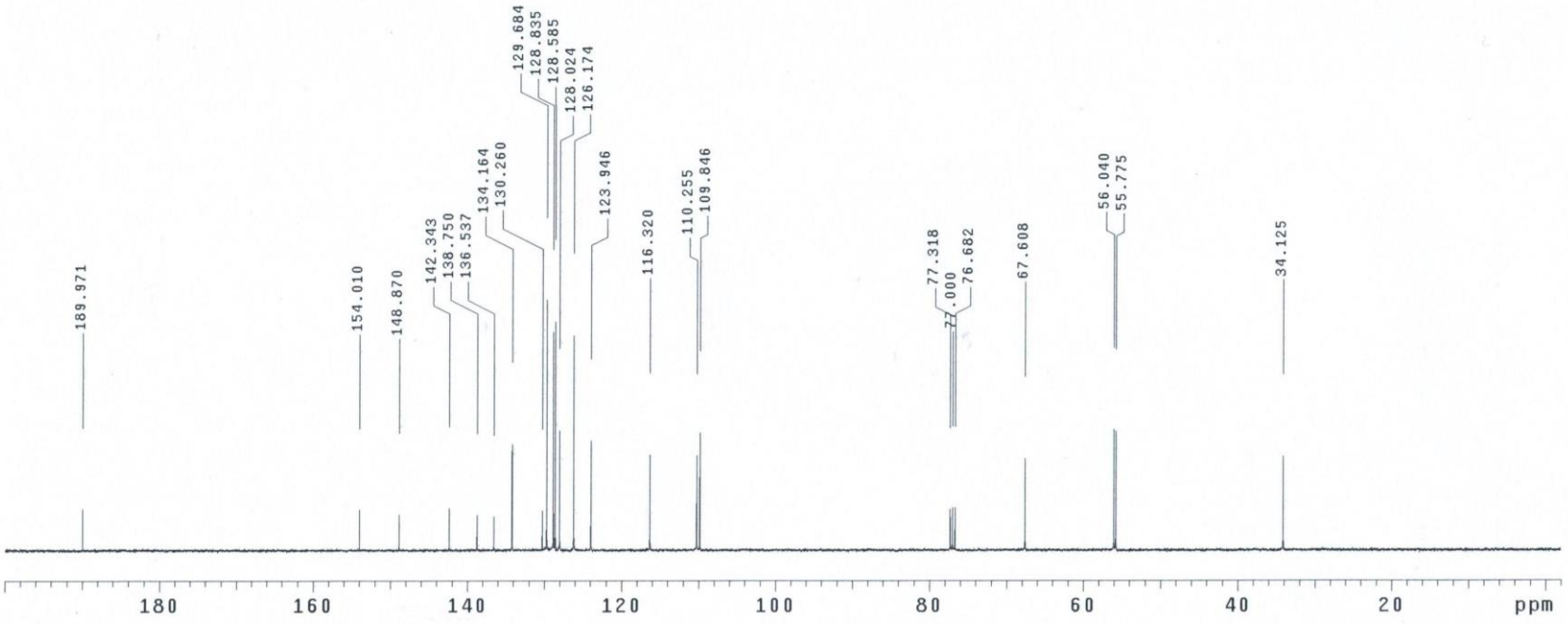
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Mar 8 2019
Solvent: CDCl3
Ambient temperature
Total 800 repetitions

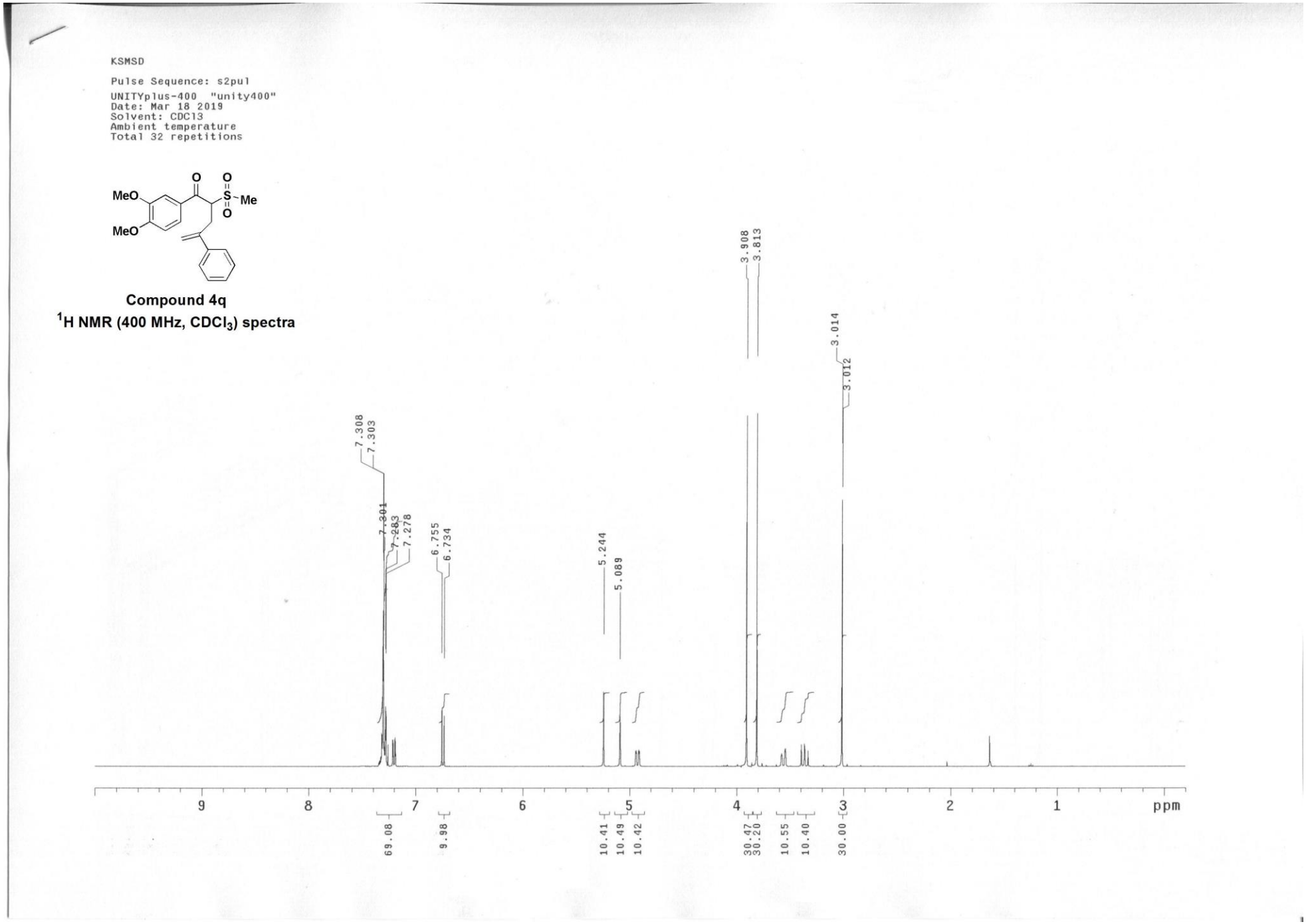


Compound 4p

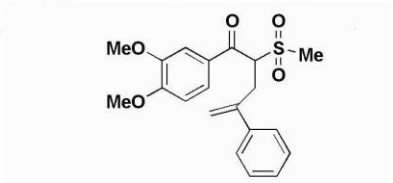
^{13}C NMR (100 MHz, $CDCl_3$) spectra



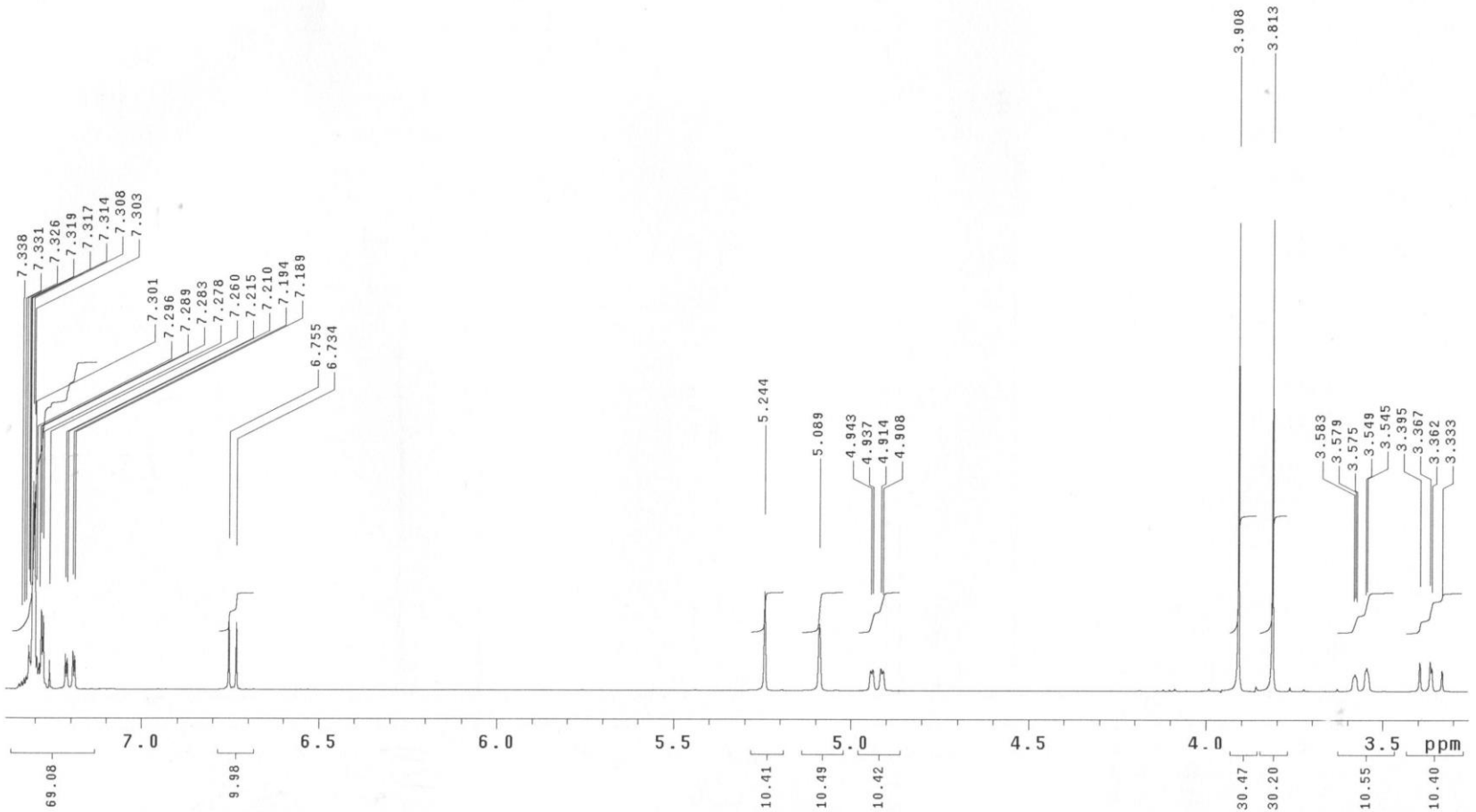
Compound 4q (^{1}H-NMR spectral data-1)



Compound 4q (^{1}H-NMR spectral data-2)

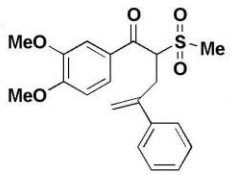


Compound 4q
^{1}H NMR (400 MHz, $CDCl_3$) spectra



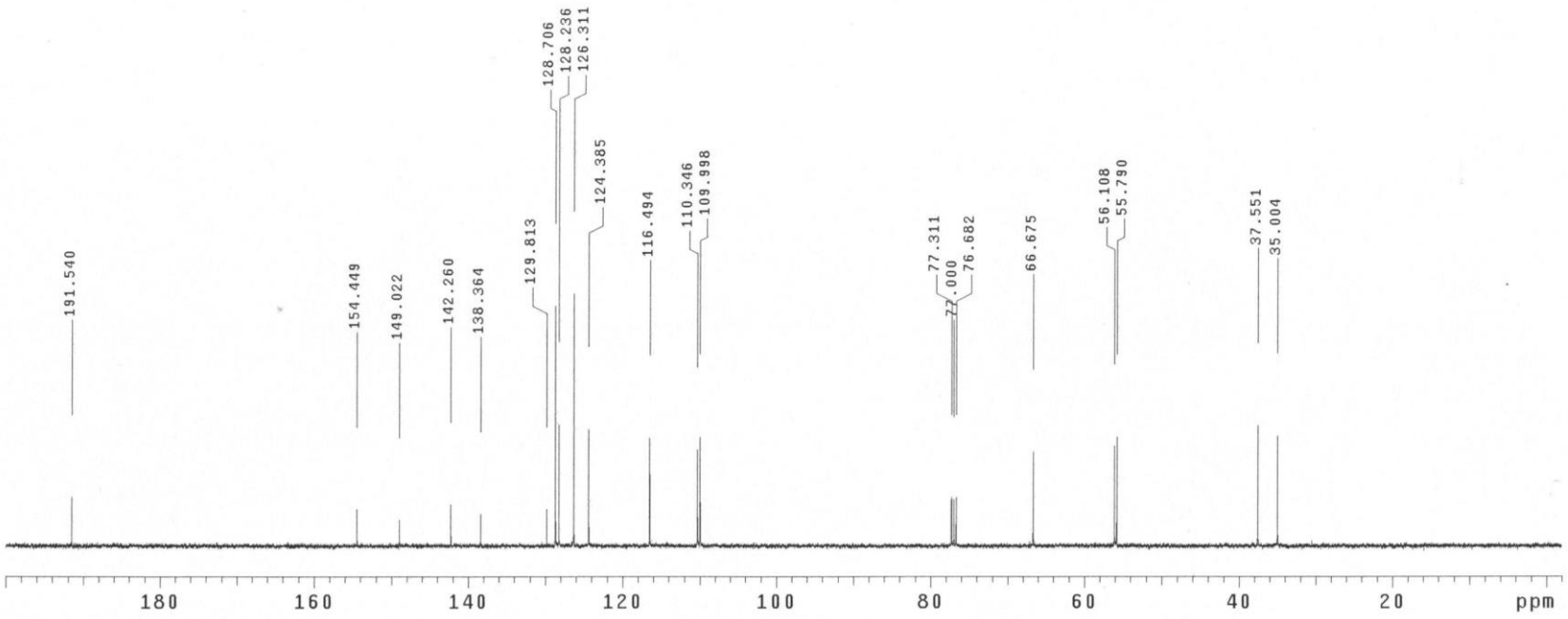
Compound 4q (^{13}C-NMR spectral data)

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Mar 18 2019
Solvent: CDCl3
Ambient temperature
Total 672 repetitions



Compound 4q

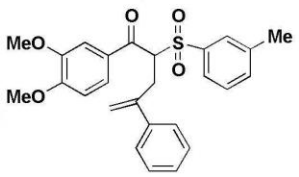
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4r (^{1}H-NMR spectral data-1)

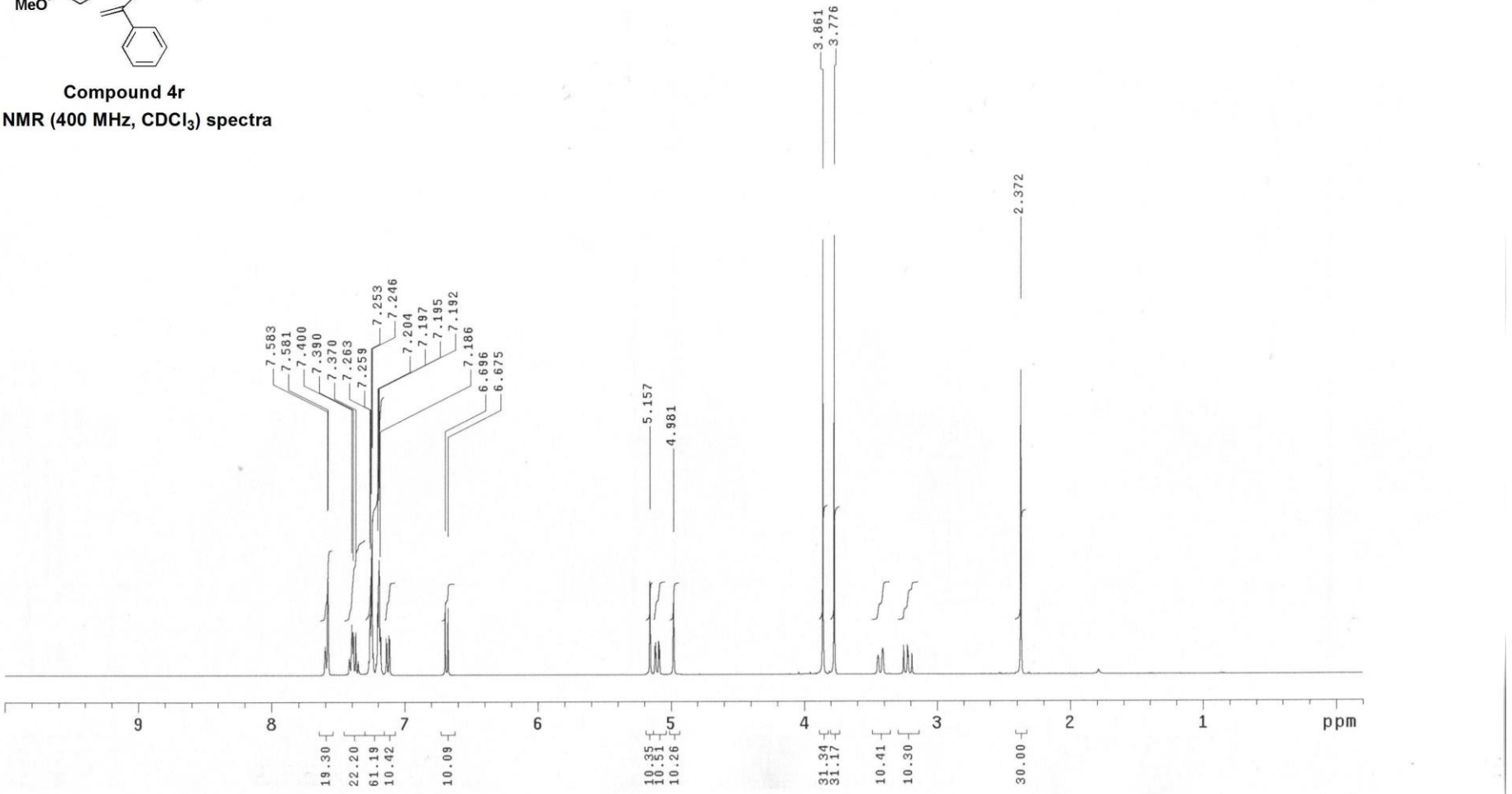
KSmMeD

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Mar 12 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

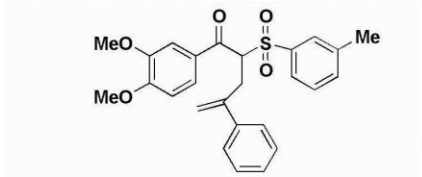


Compound 4r

^{1}H NMR (400 MHz, $CDCl_3$) spectra

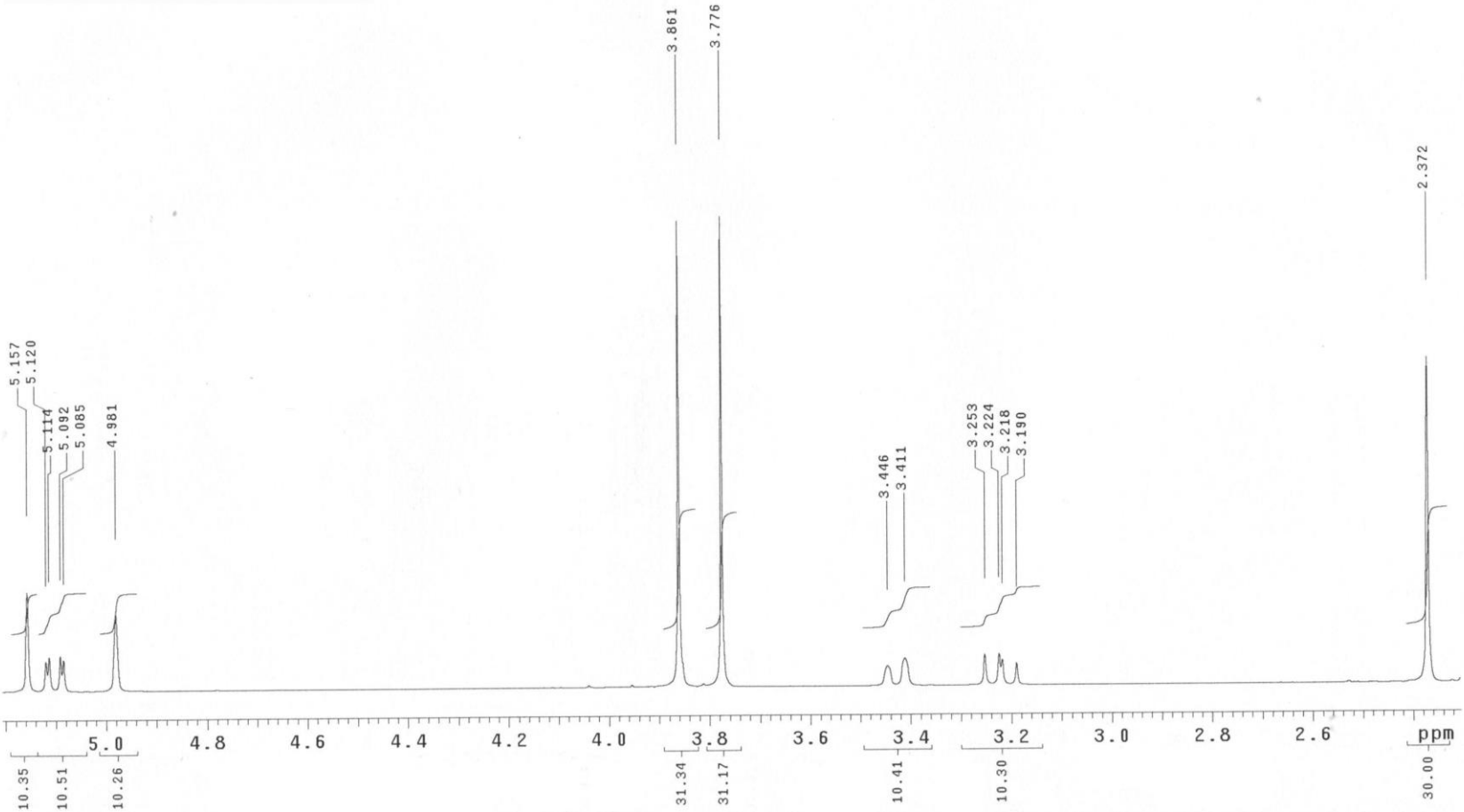


Compound 4r (^{1}H-NMR spectral data-2)



Compound 4r

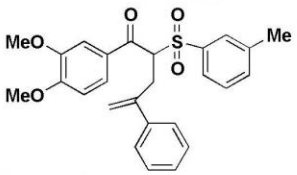
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 4r (^{13}C-NMR spectral data)

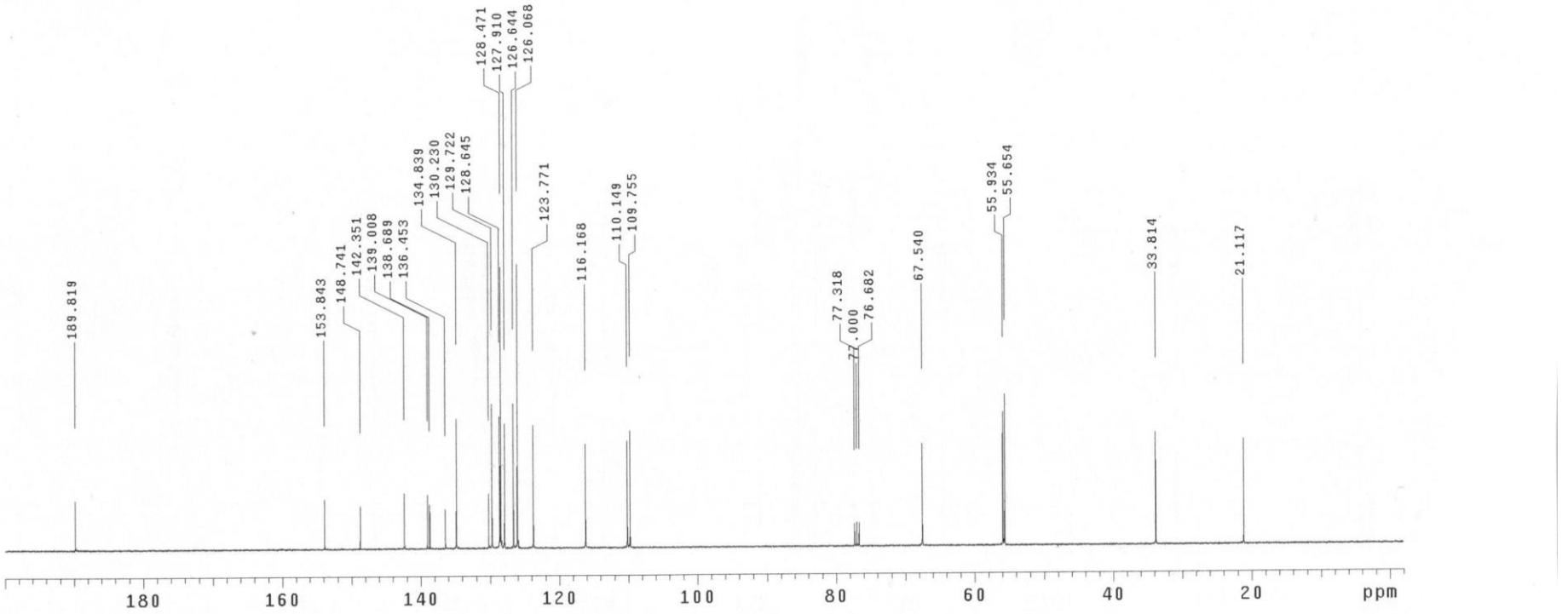
KSmMeD

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Mar 12 2019
Solvent: CDCl3
Ambient temperature
Total 1024 repetitions



Compound 4r

^{13}C NMR (100 MHz, $CDCl_3$) spectra

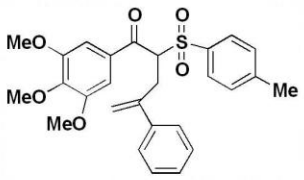


Compound 4s (^{1}H-NMR spectral data-1)

KS30MeD

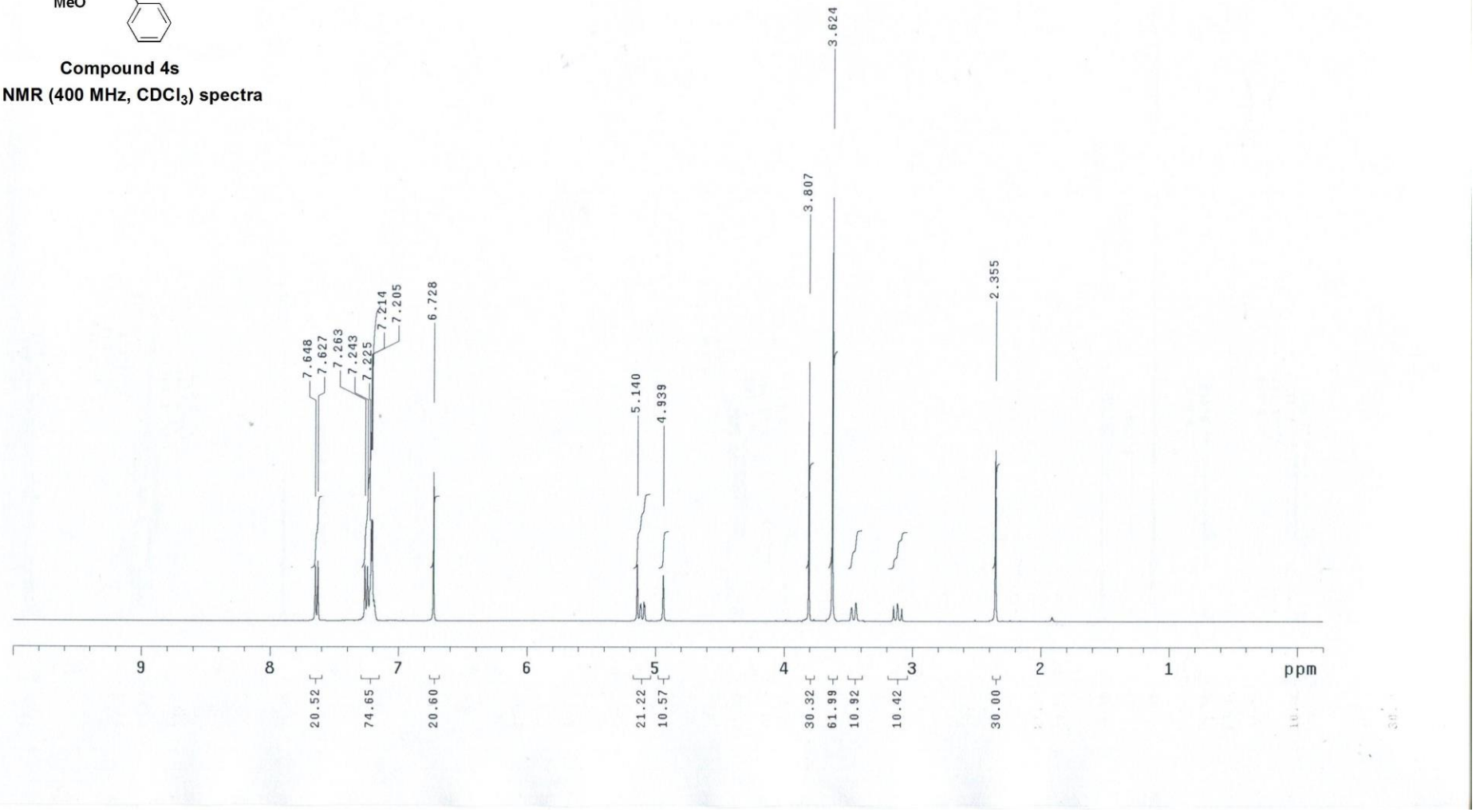
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Mar 7 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

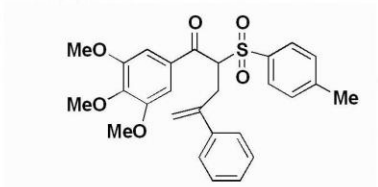


Compound 4s

^{1}H NMR (400 MHz, $CDCl_3$) spectra

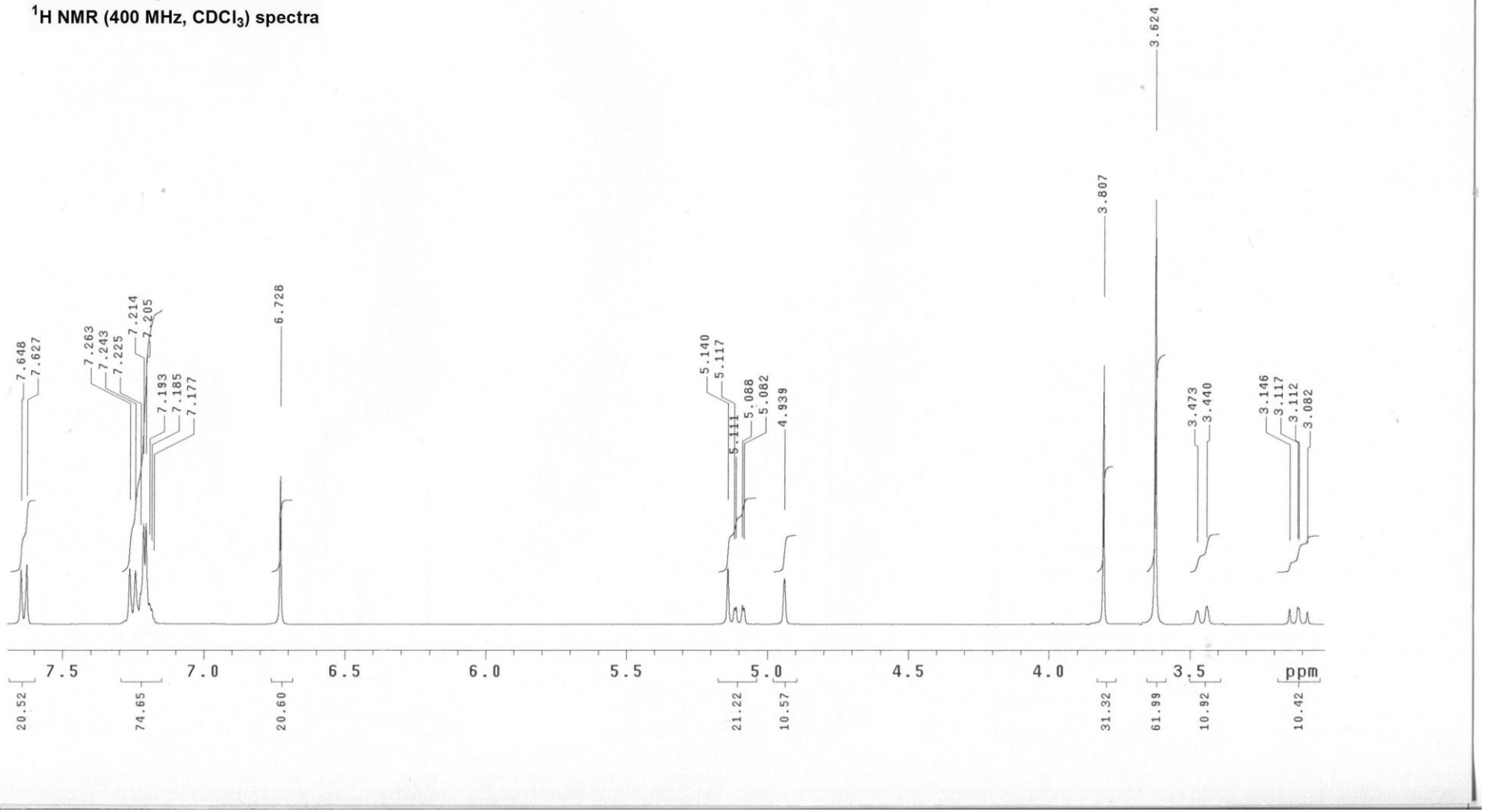


Compound 4s (^{1}H-NMR spectral data-2)



Compound 4s

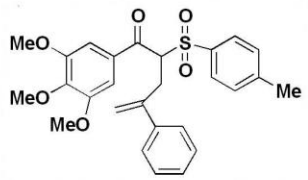
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 4s (^{13}C-NMR spectral data)

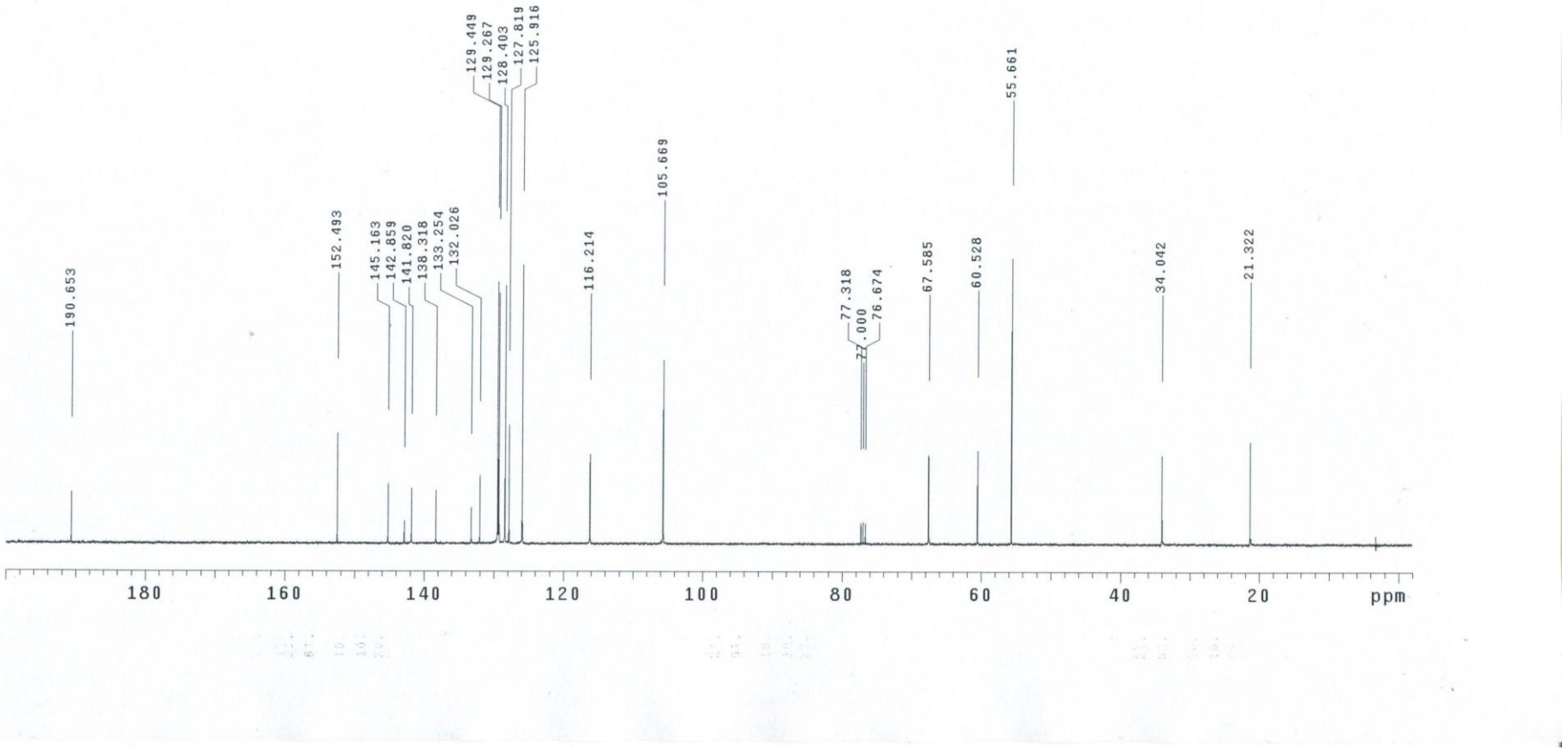
KS30MeD

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Mar 7 2019
Solvent: CDCl3
Ambient temperature
Total 160 repetitions

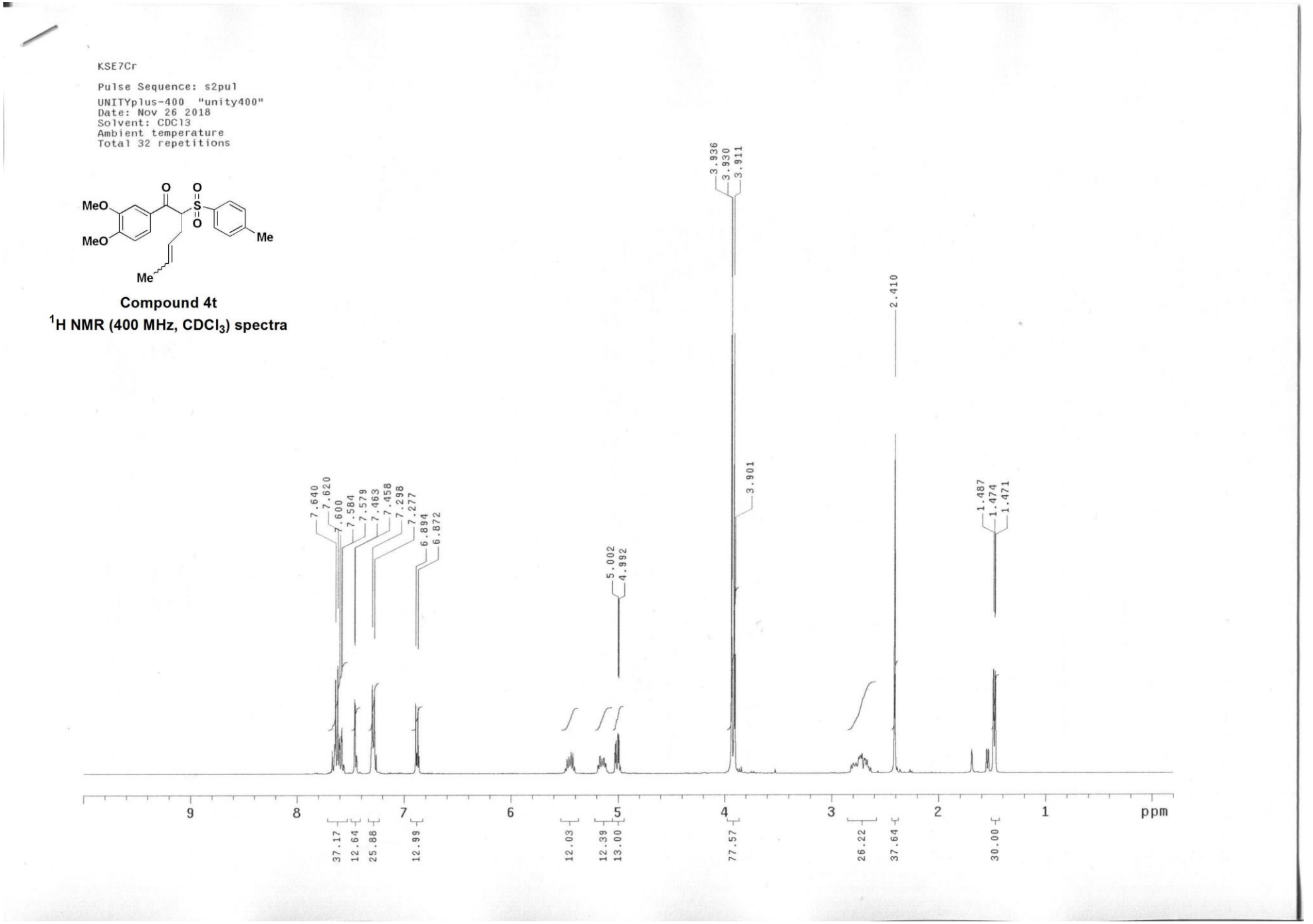


Compound 4s

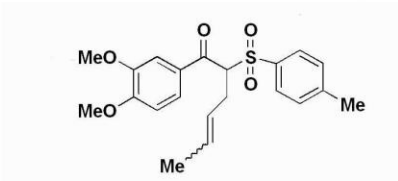
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4t (^{1}H-NMR spectral data-1)

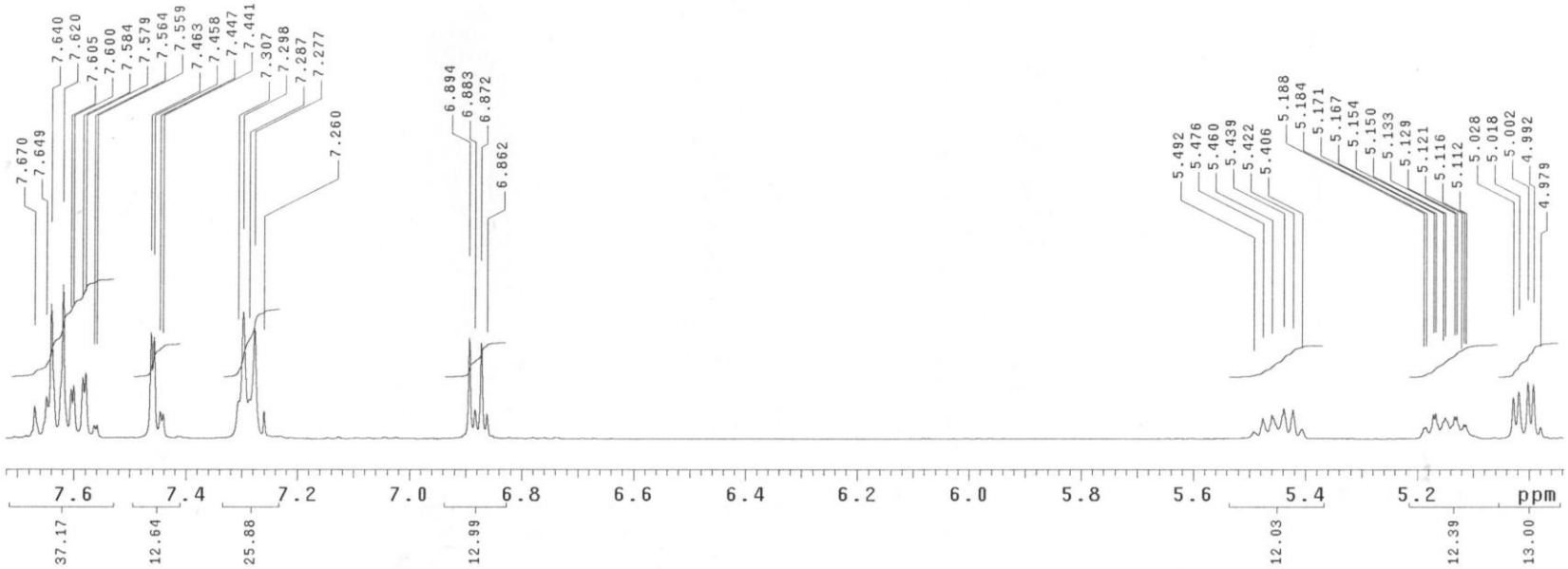


Compound 4t (^{1}H-NMR spectral data-2)



Compound 4t

^{1}H NMR (400 MHz, $CDCl_3$) spectra

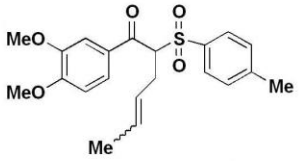


Compound 4t (^{13}C-NMR spectral data)

KSE7Cr

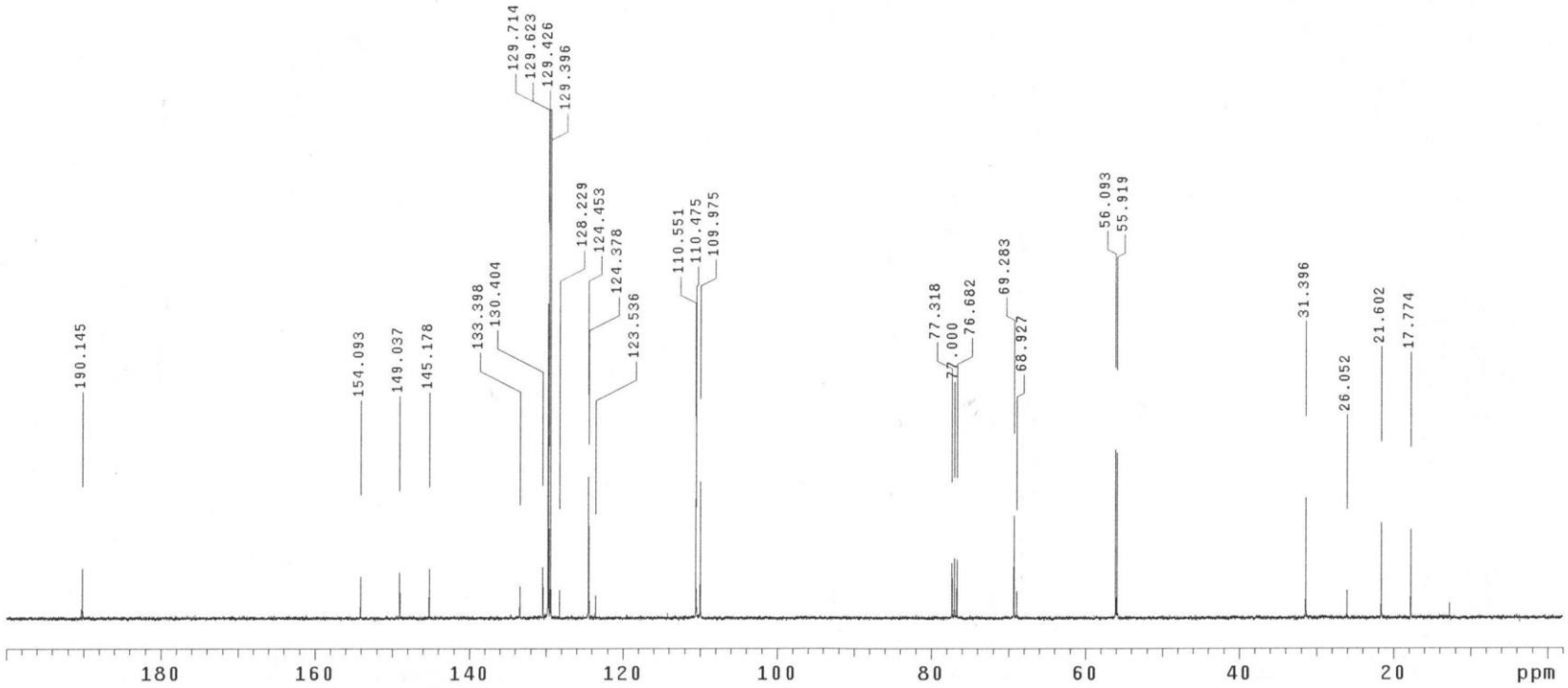
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Nov 26 2018
Solvent: CDCl3
Ambient temperature
Total 848 repetitions



Compound 4t

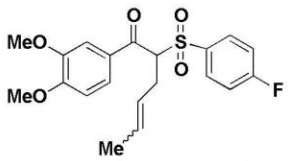
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4u (^{1}H-NMR spectral data-1)

KSFCr

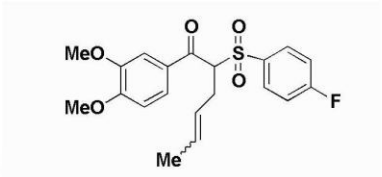
Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Dec 24 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4u

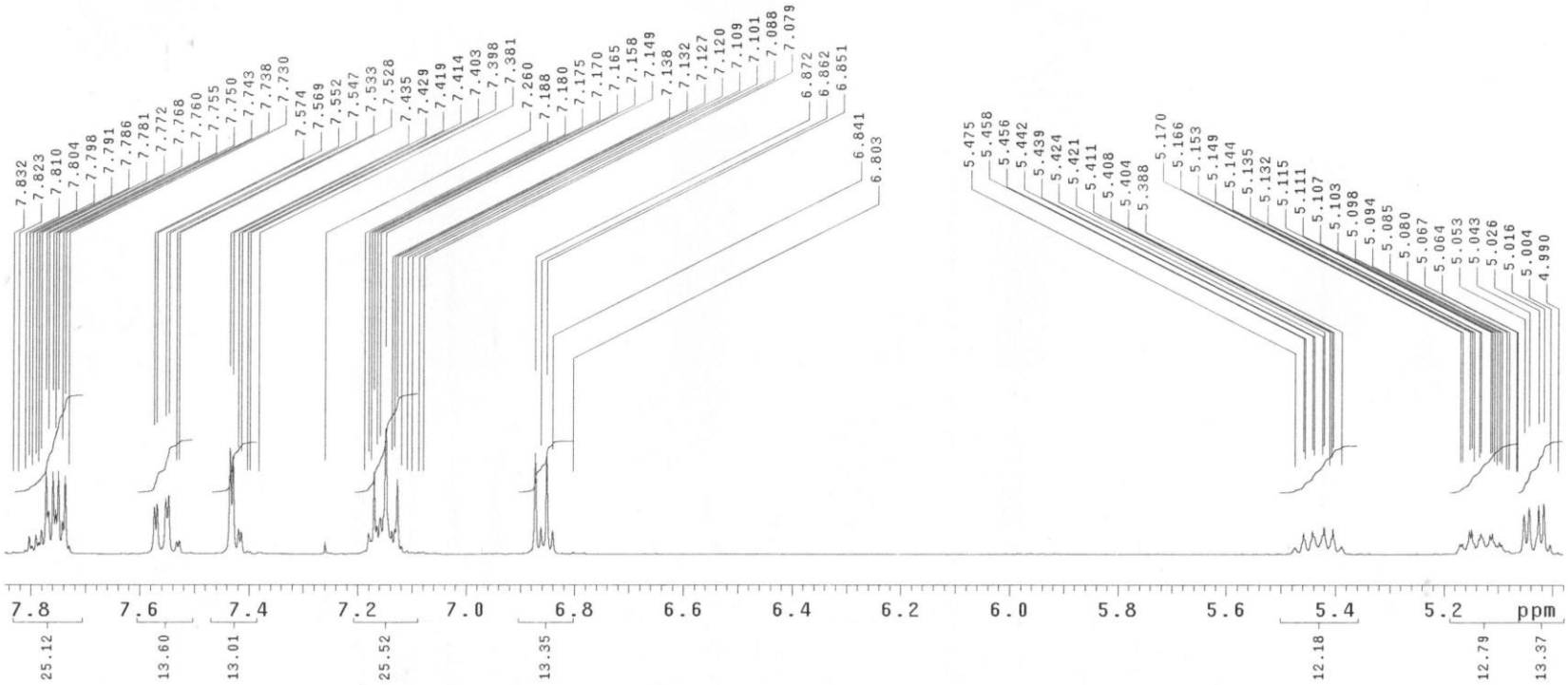
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4u (^{1}H-NMR spectral data-2)



Compound 4u

^{1}H NMR (400 MHz, $CDCl_3$) spectra

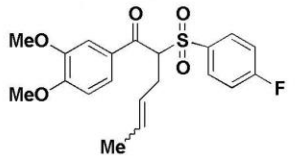


Compound 4u (^{13}C-NMR spectral data)

KSFCr

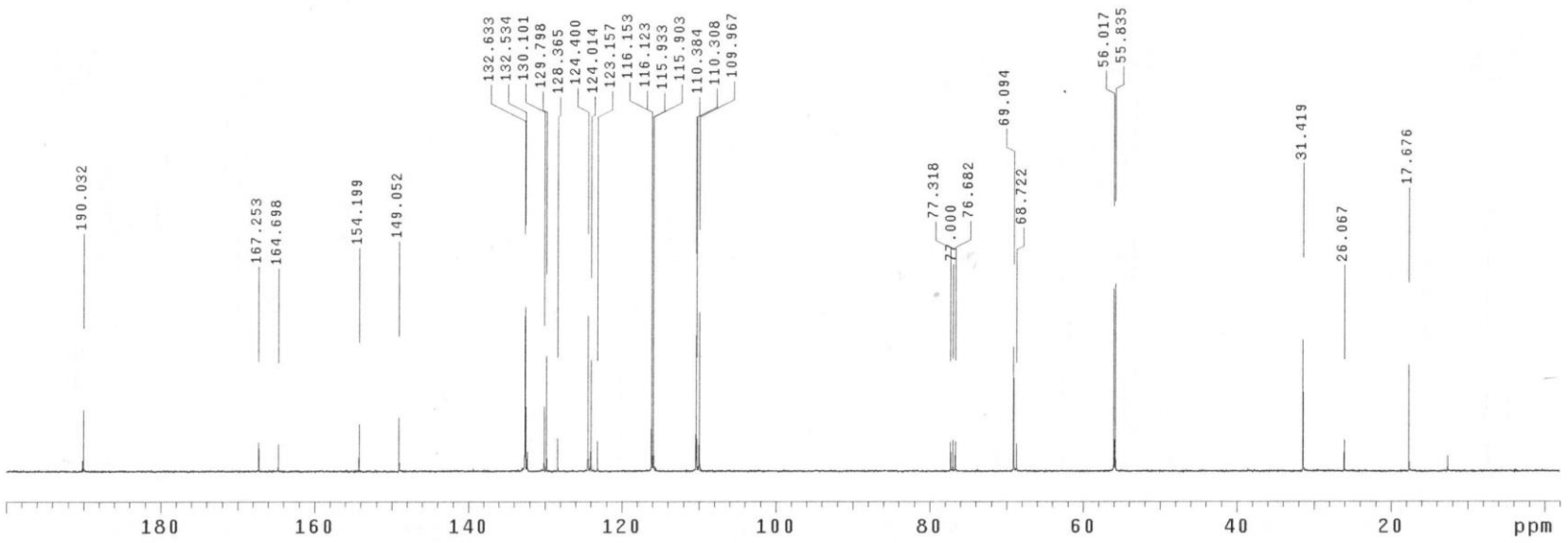
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Dec 24 2018
Solvent: CDCl3
Ambient temperature
Total 800 repetitions



Compound 4u

^{13}C NMR (100 MHz, $CDCl_3$) spectra

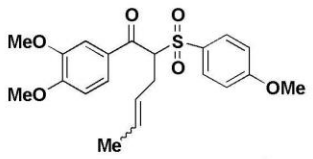


Compound 4v (^{1}H-NMR spectral data-1)

KSOMeCr

Pulse Sequence: s2pul

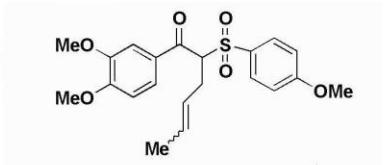
UNITYplus-400 "unity400"
Date: Jan 3 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4v

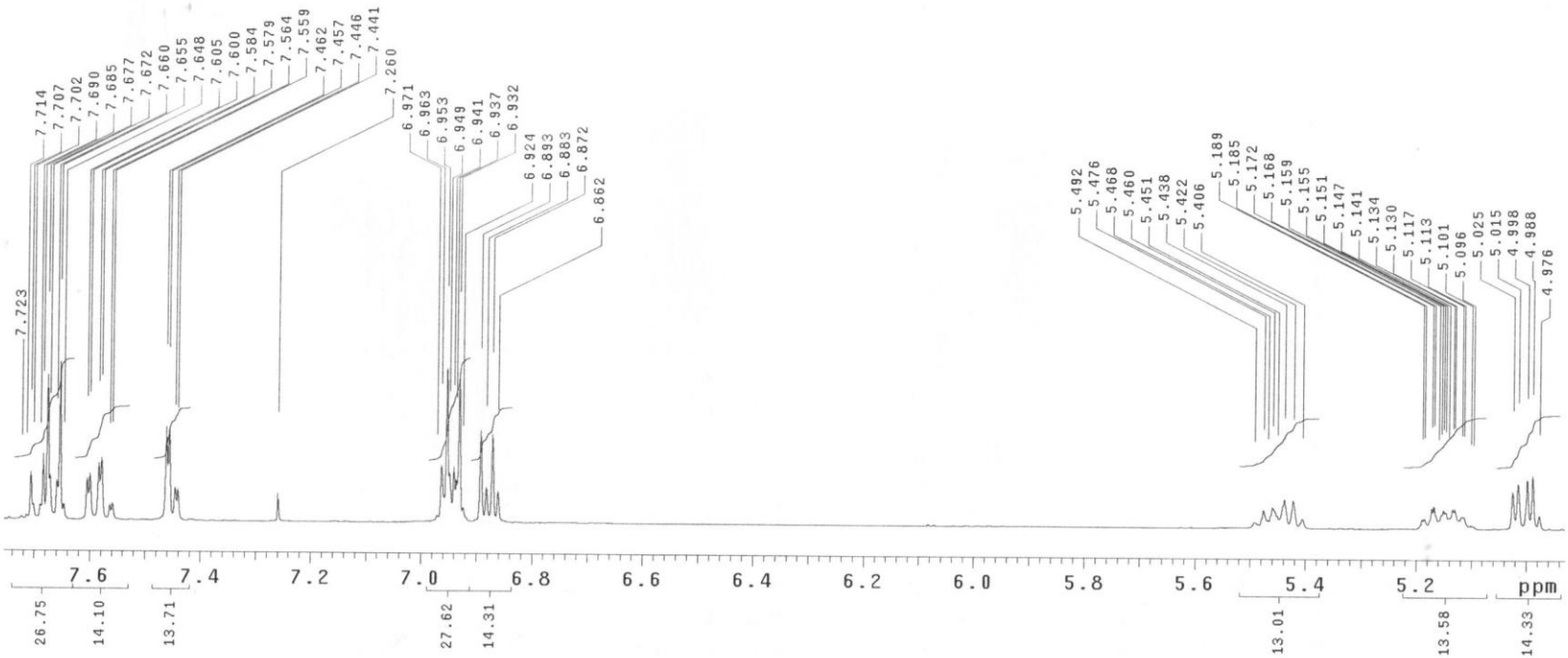
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4v (^{1}H-NMR spectral data-2)



Compound 4v

^{1}H NMR (400 MHz, $CDCl_3$) spectra

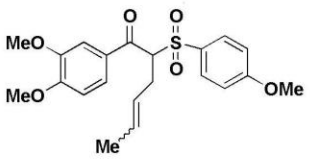


Compound 4v (^{13}C-NMR spectral data)

KSOMeCr

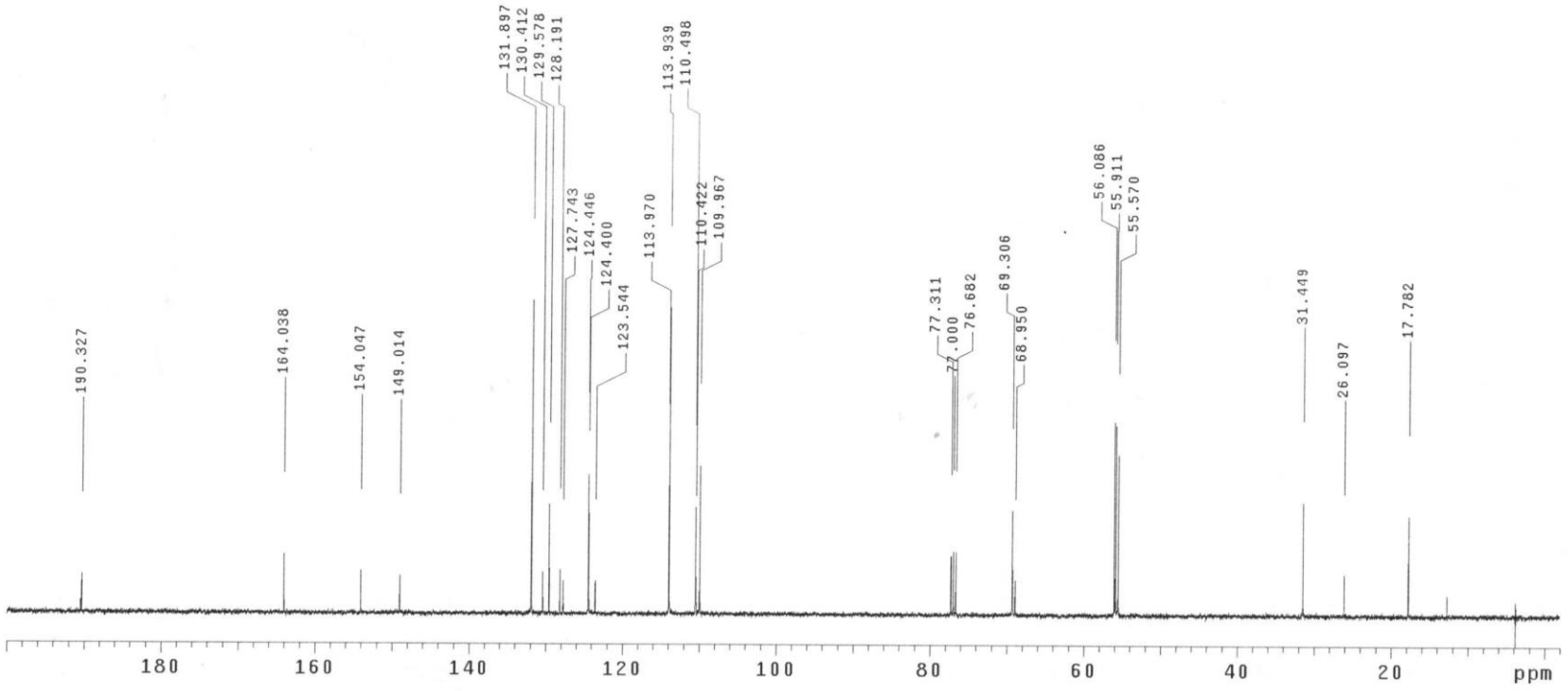
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 3 2019
Solvent: CDCl3
Ambient temperature
Total 528 repetitions



Compound 4v

^{13}C NMR (100 MHz, $CDCl_3$) spectra

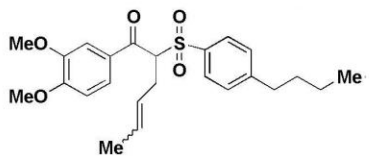


Compound 4w (^{1}H-NMR spectral data-1)

KSPhBuCr

Pulse Sequence: s2pul

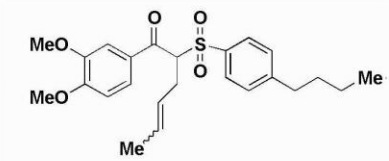
UNITYplus-400 "unity400"
Date: Jan 3 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4w

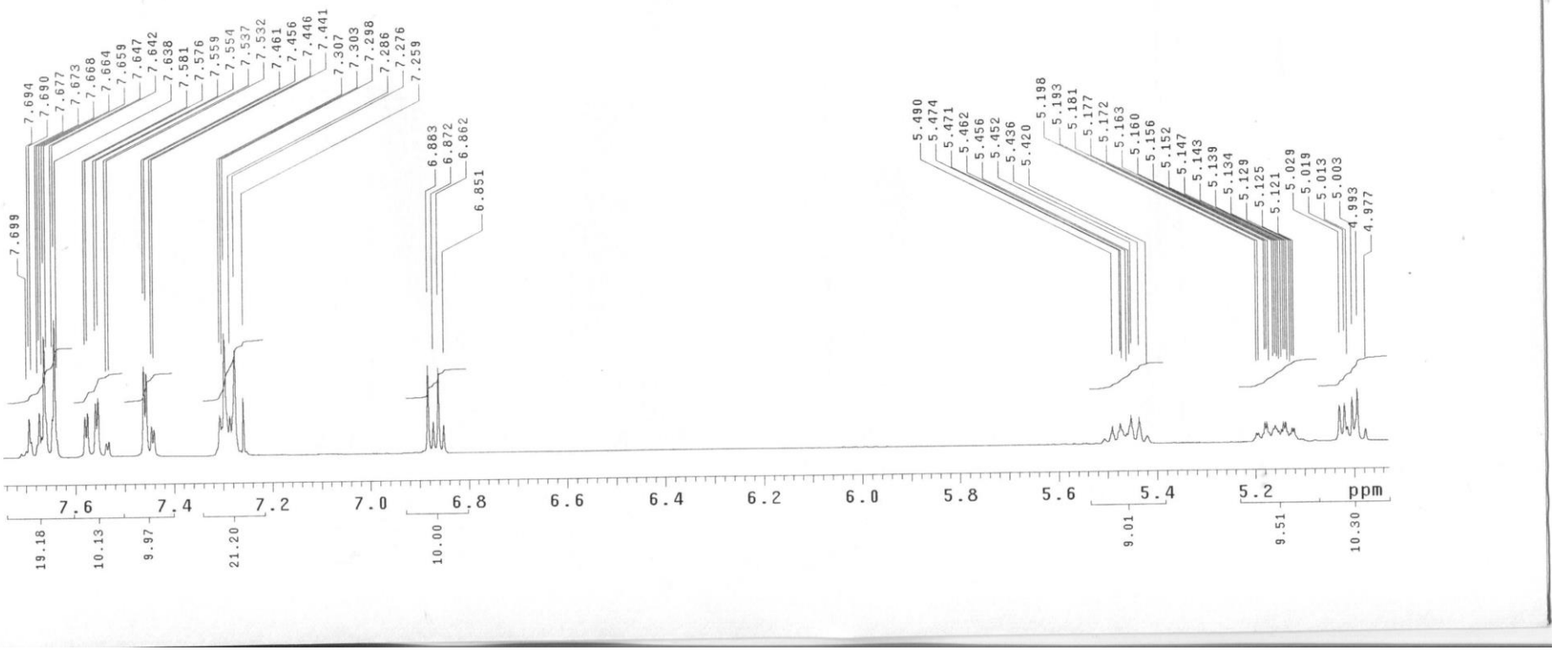
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4w (^{1}H-NMR spectral data-2)



Compound 4w

^{1}H NMR (400 MHz, $CDCl_3$) spectra

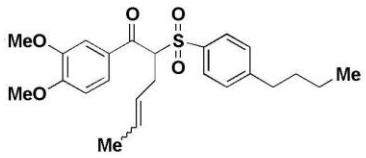


Compound 4w (^{13}C-NMR spectral data)

KSPhBuCr

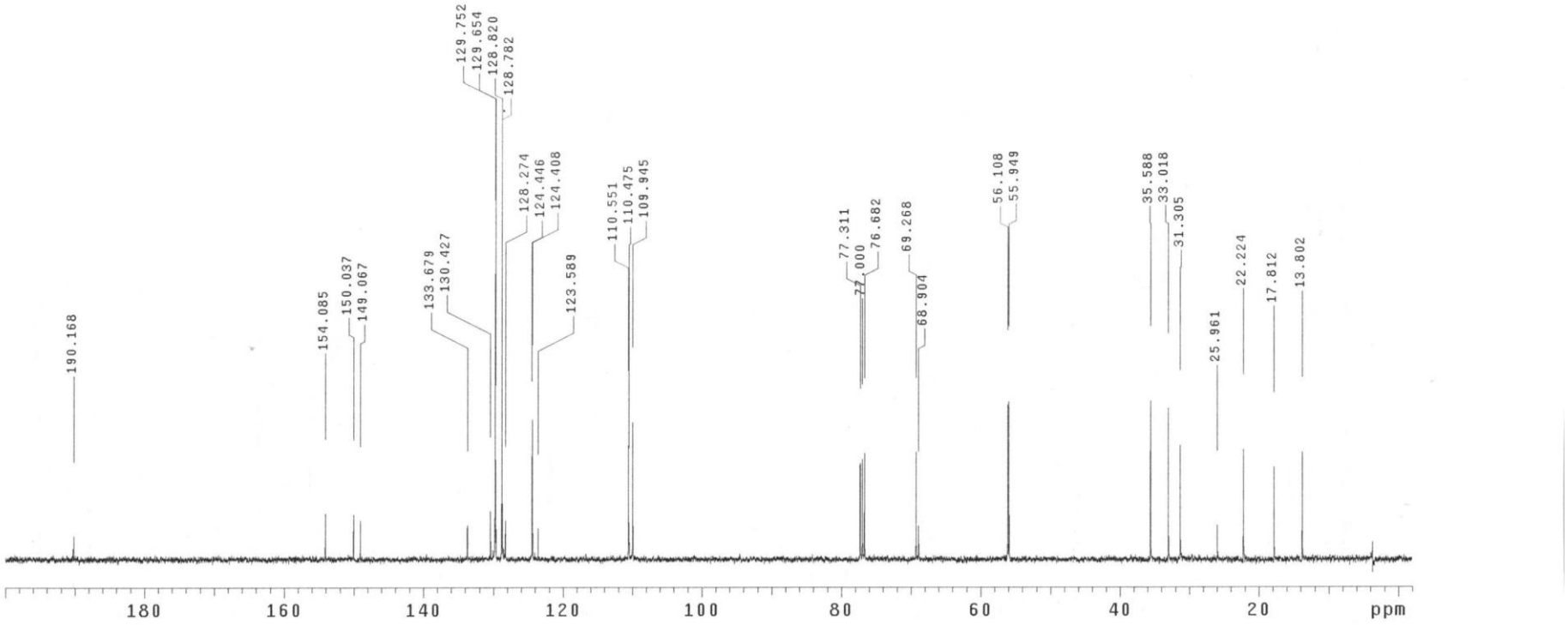
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 3 2019
Solvent: CDCl3
Ambient temperature
Total 1248 repetitions



Compound 4w

^{13}C NMR (100 MHz, $CDCl_3$) spectra

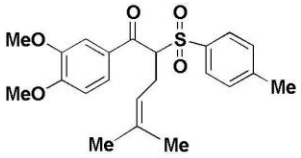


Compound 4x (^{1}H-NMR spectral data-1)

KSTsPr

Pulse Sequence: s2pul

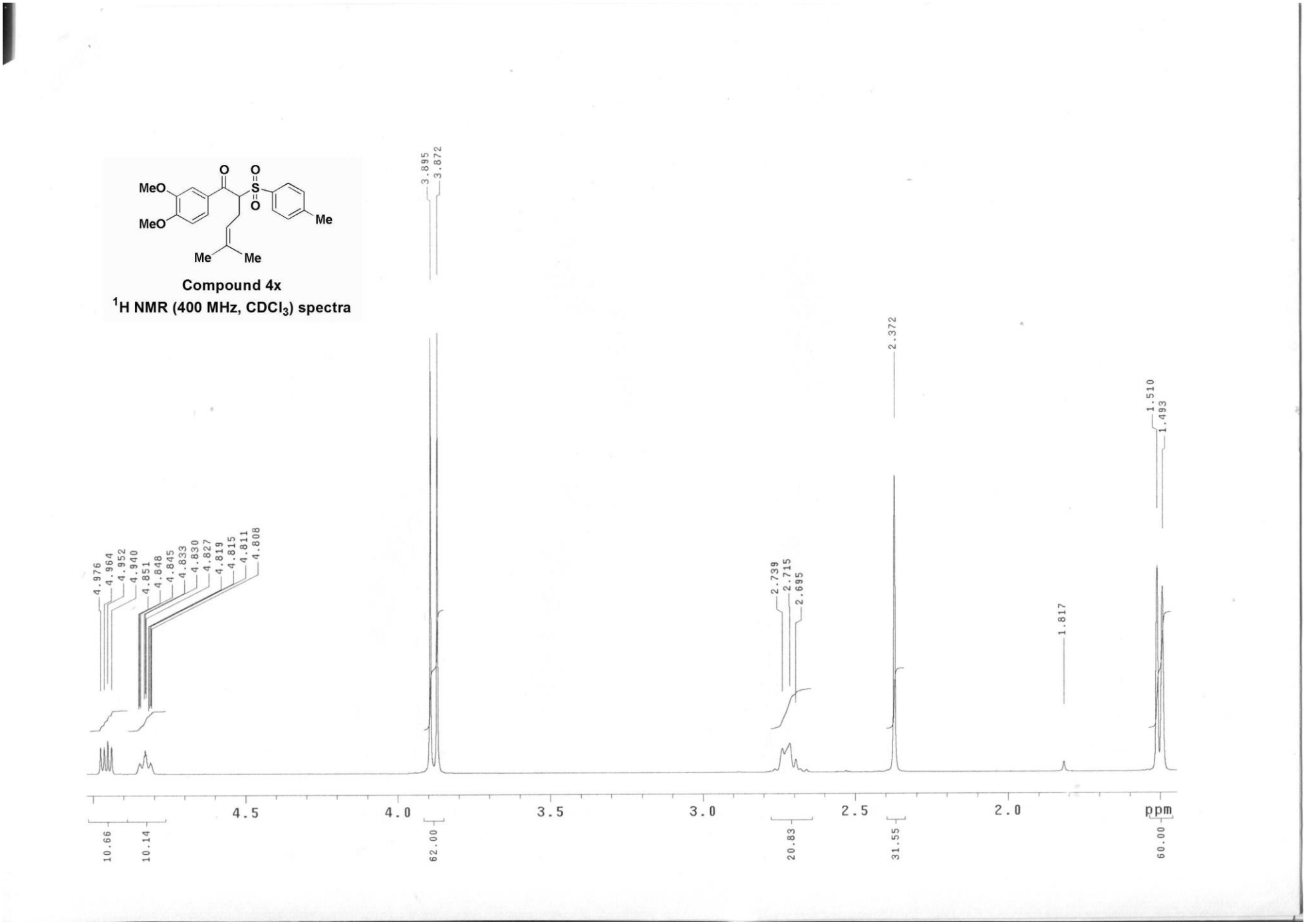
UNITYplus-400 "unity400"
Date: Jan 9 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 4x

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 4x (^{1}H-NMR spectral data-2)

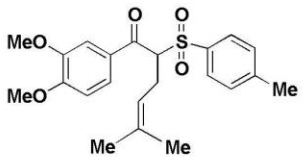


Compound 4x (^{13}C-NMR spectral data)

KSTsPr

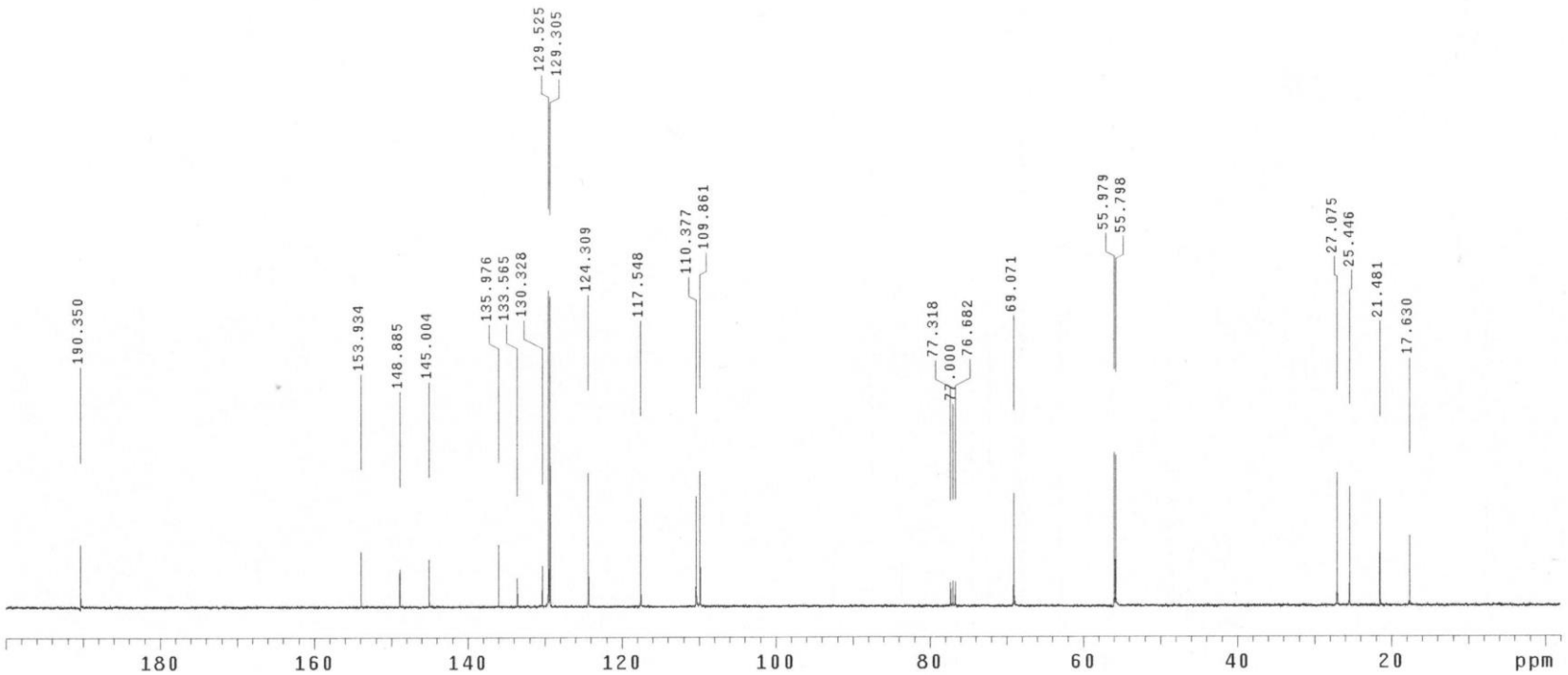
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 9 2019
Solvent: CDCl3
Ambient temperature
Total 336 repetitions



Compound 4x

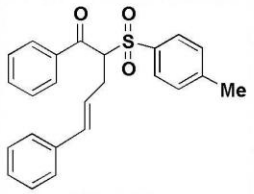
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 4y (^{1}H-NMR spectral data-1)

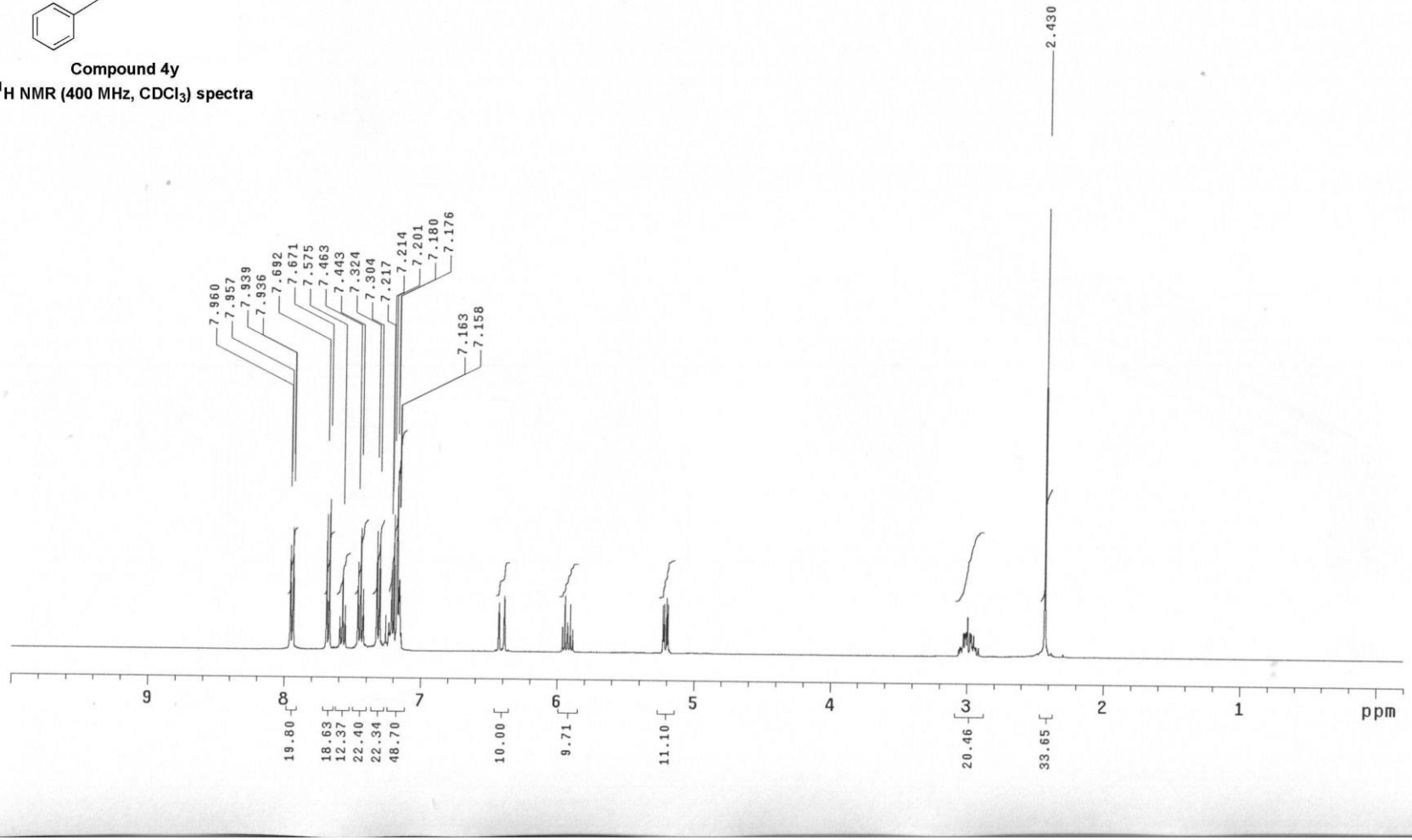
KS4y

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: May 4 2020
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

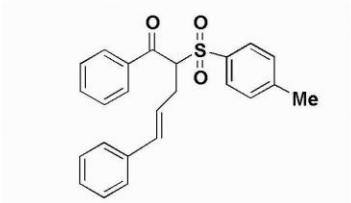


Compound 4y

^{1}H NMR (400 MHz, $CDCl_3$) spectra

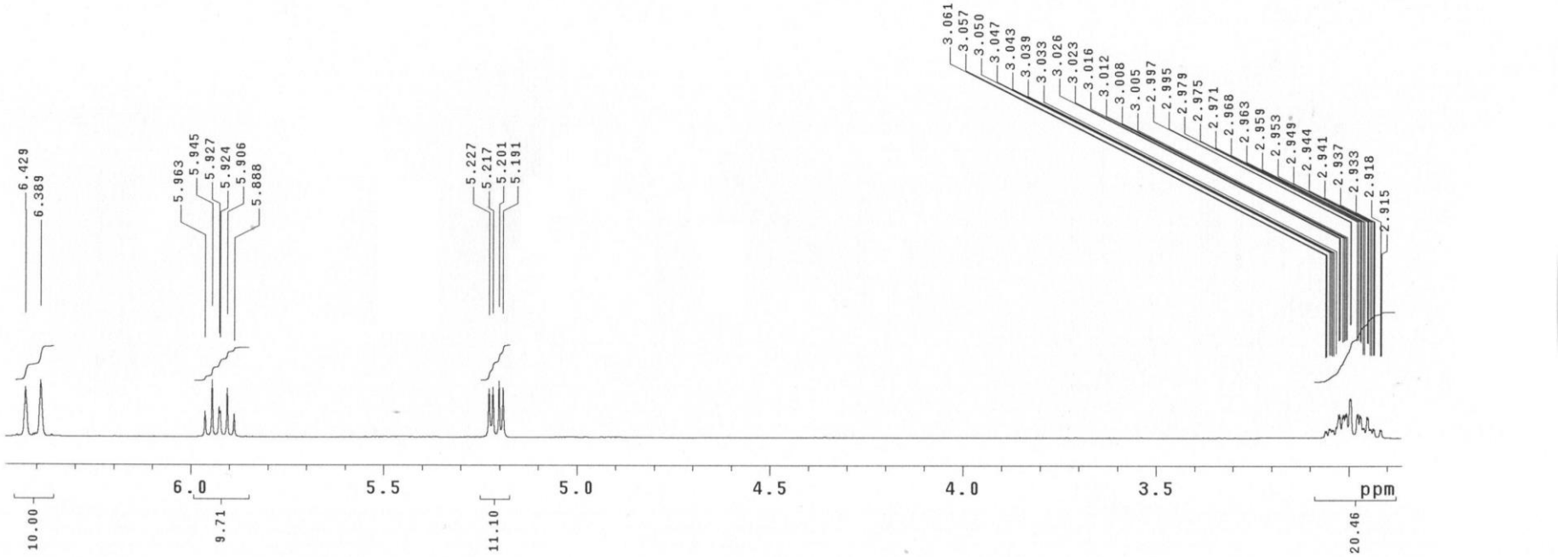


Compound 4y (^{1}H-NMR spectral data-2)



Compound 4y

^{1}H NMR (400 MHz, $CDCl_3$) spectra

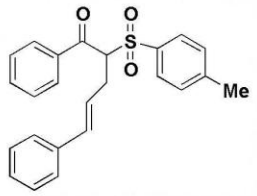


Compound 4y (^{13}C-NMR spectral data)

KS4y

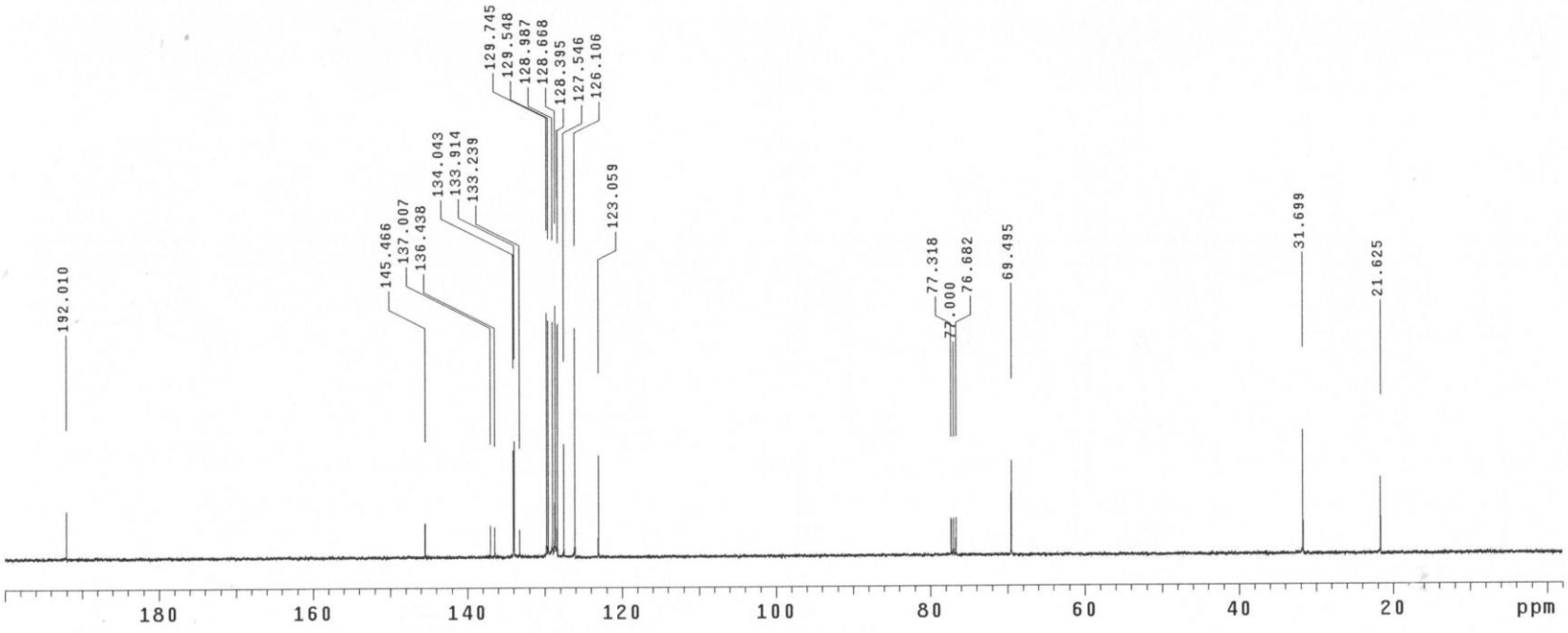
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: May 4 2020
Solvent: CDCl3
Ambient temperature
Total 704 repetitions



Compound 4y

^{13}C NMR (100 MHz, $CDCl_3$) spectra

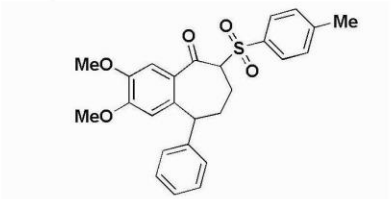


Compound 5a (^{1}H-NMR spectral data-1)

KSTSCrB

Pulse Sequence: s2pul

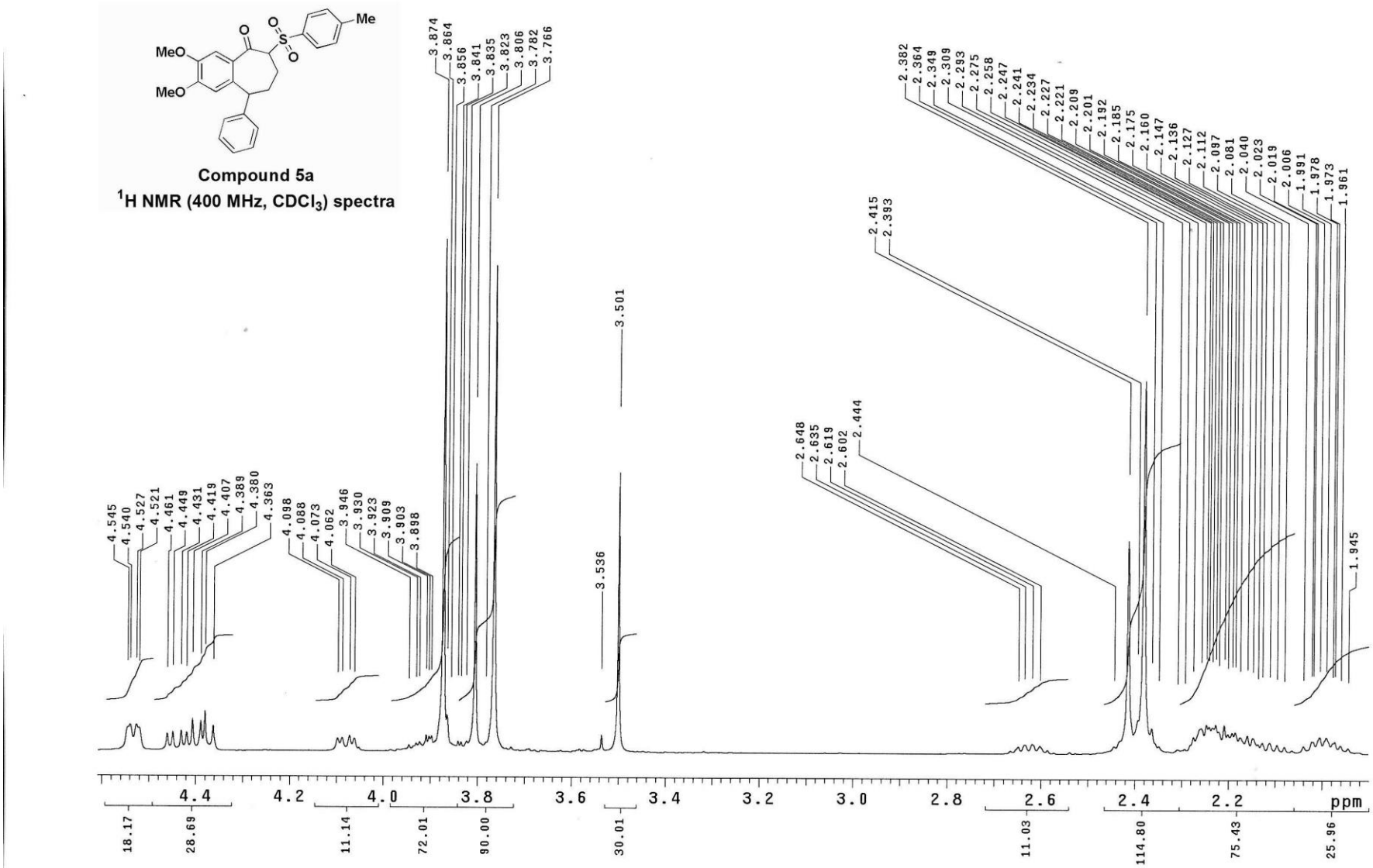
UNITYplus-400 "unity400"
Date: Apr 17 2020
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 5a

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 5a (^{1}H-NMR spectral data-2)

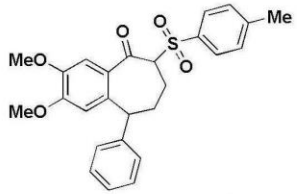


Compound 5a (^{13}C-NMR spectral data)

KSTSCrB

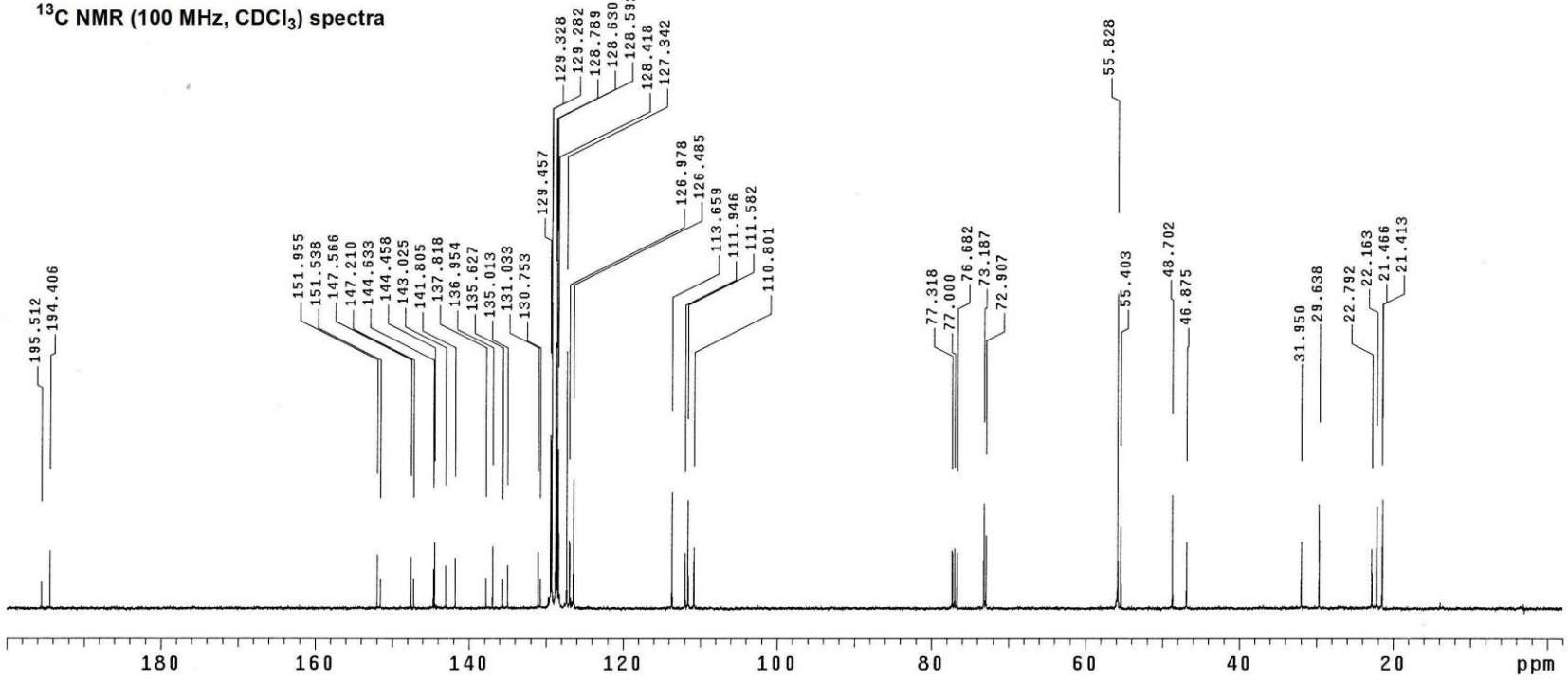
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Apr 17 2020
Solvent: CDCl3
Ambient temperature
Total 800 repetitions



Compound 5a

^{13}C NMR (100 MHz, $CDCl_3$) spectra

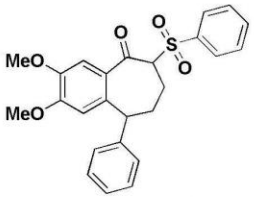


Compound 5b (^{1}H-NMR spectral data-1)

KSE8CBF

Pulse Sequence: s2pul

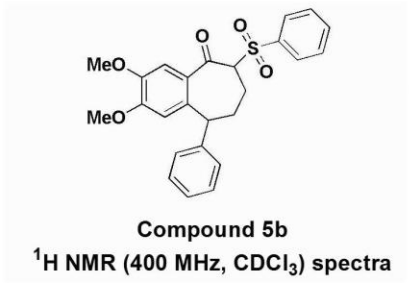
UNITYplus-400 "unity400"
Date: Sep 20 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 5b

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 5b (^{1}H-NMR spectral data-2)



Compound 5b

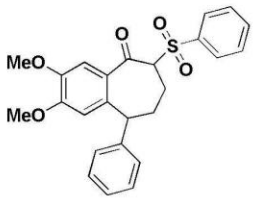
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 5b (^{13}C-NMR spectral data)

KSE8CBF

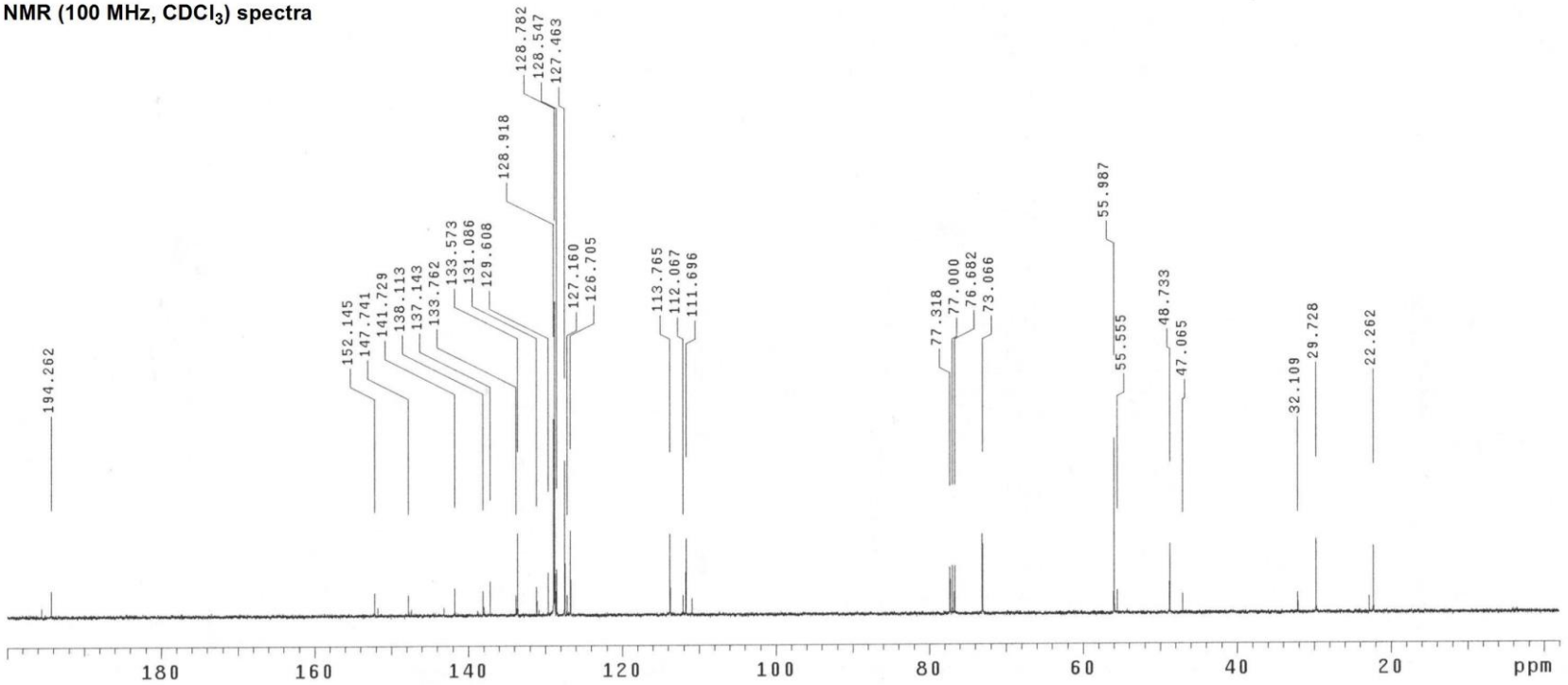
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Sep 20 2018
Solvent: CDCl3
Ambient temperature
Total 640 repetitions



Compound 5b

^{13}C NMR (100 MHz, $CDCl_3$) spectra

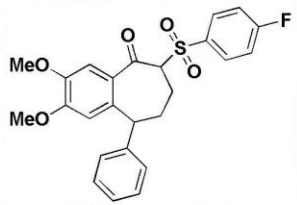


Compound 5c (^{1}H-NMR spectral data-1)

KS5C

Pulse Sequence: s2pul

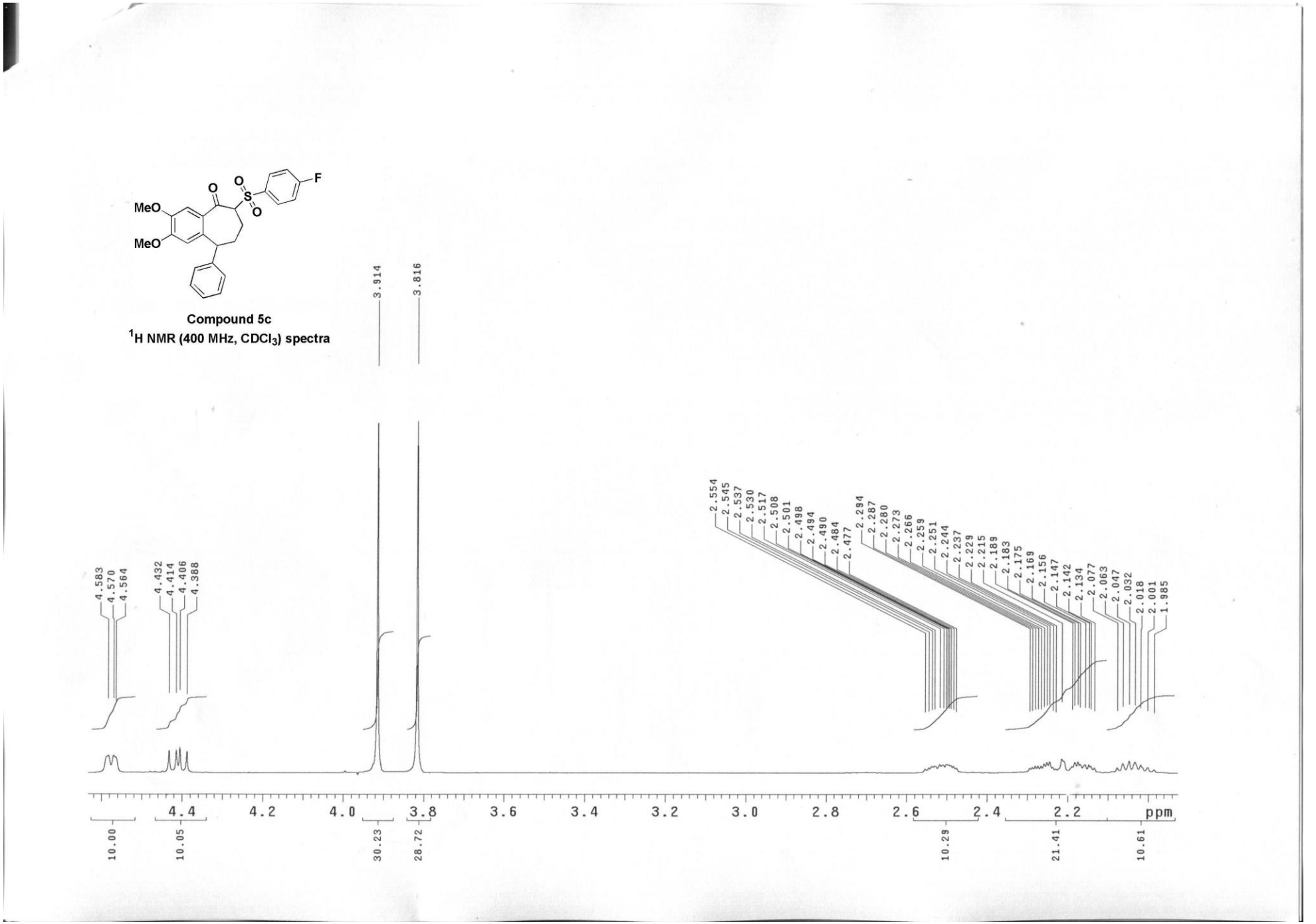
UNITYplus-400 "unity400"
Date: May 4 2020
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 5c

^{1}H NMR (400 MHz, $CDCl_3$) spectra

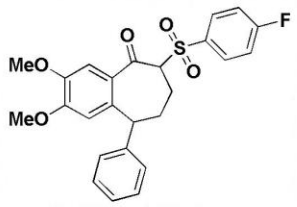
Compound 5c (^{1}H-NMR spectral data-2)



Compound 5c (^{13}C-NMR spectral data)

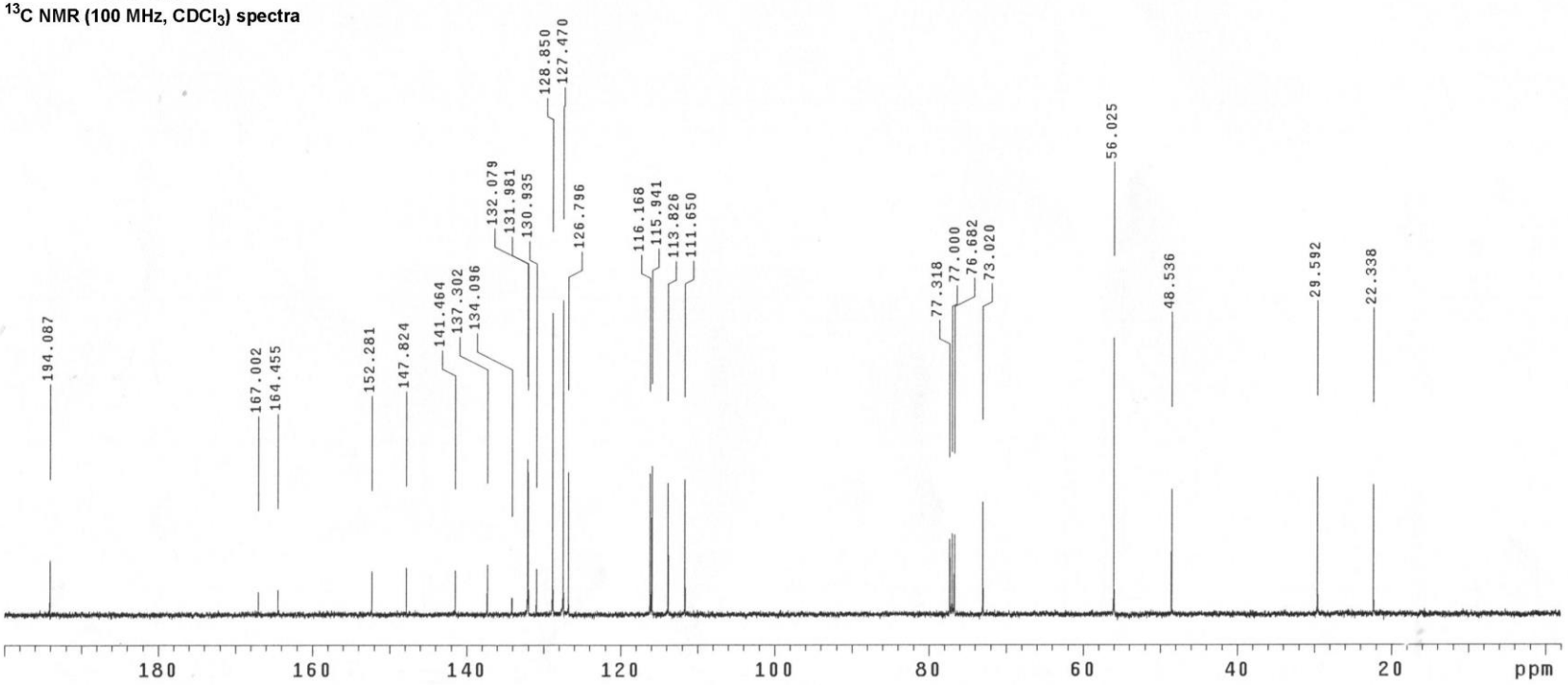
KS5C

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: May 4 2020
Solvent: CDCl3
Ambient temperature
Total 1088 repetitions



Compound 5c

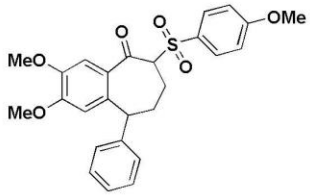
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 5d (^{1}H-NMR spectral data-1)

KSOMeCBF

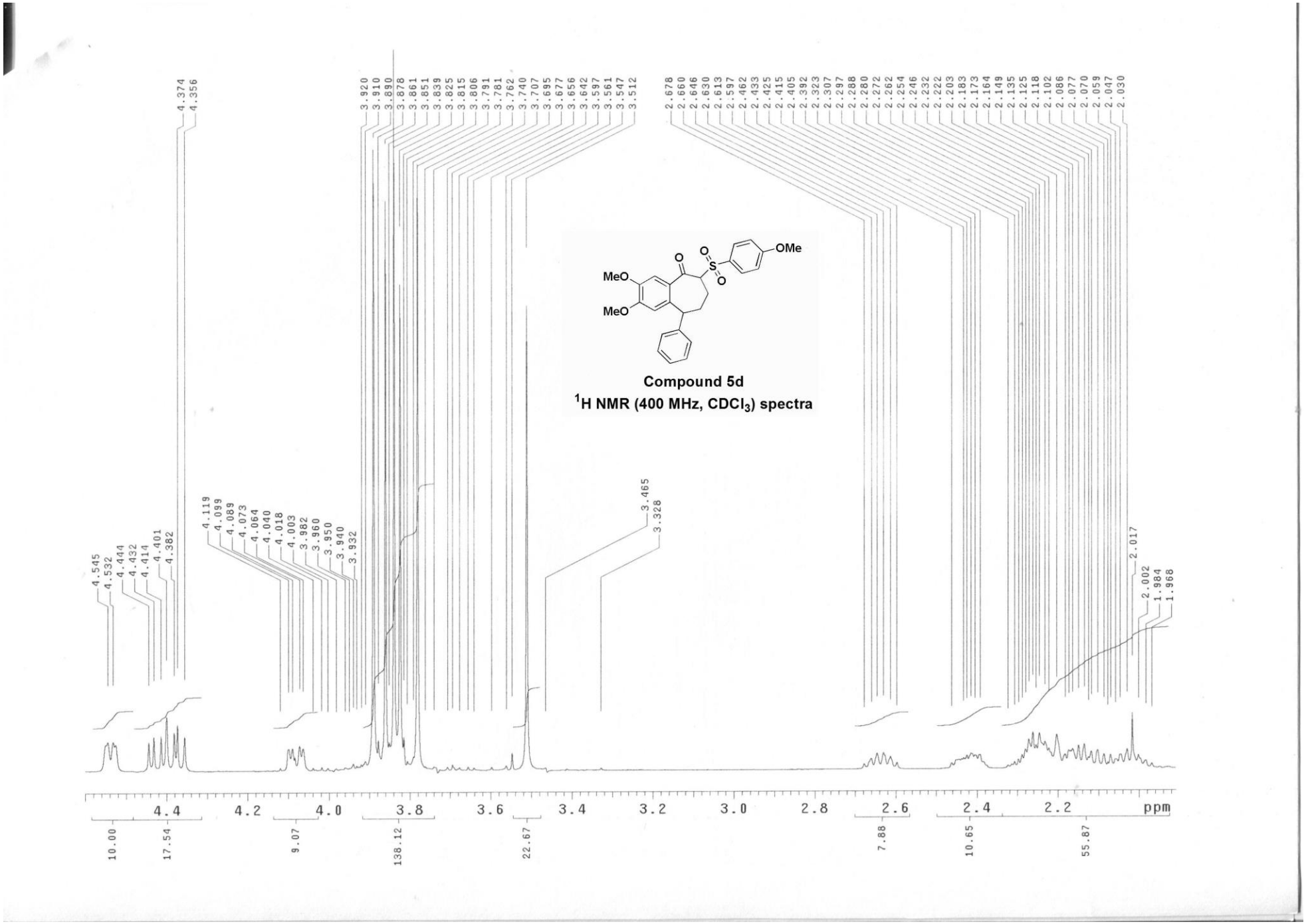
Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Dec 27 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 5d

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 5d (^{1}H-NMR spectral data-2)

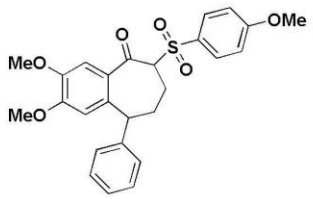


Compound 5d (^{13}C-NMR spectral data)

KSOMeCBF

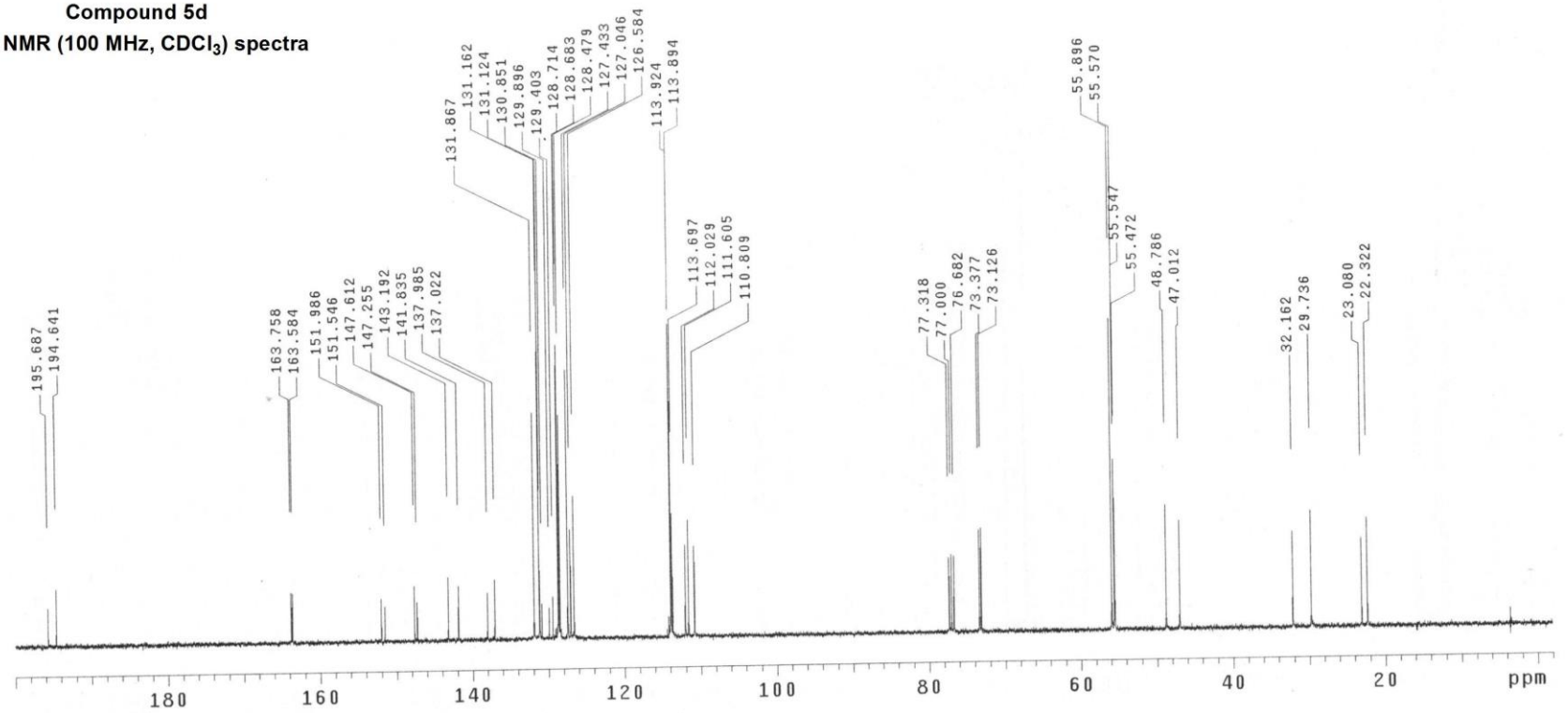
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Dec 27 2018
Solvent: CDCl3
Ambient temperature
Total 752 repetitions



Compound 5d

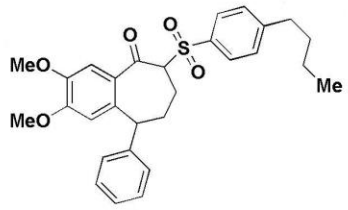
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 5e (^{1}H-NMR spectral data-1)

KSPhBuCBF

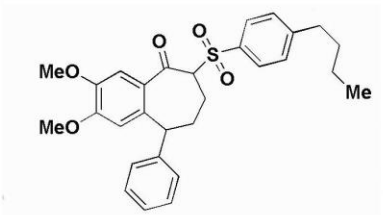
Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Jan 14 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



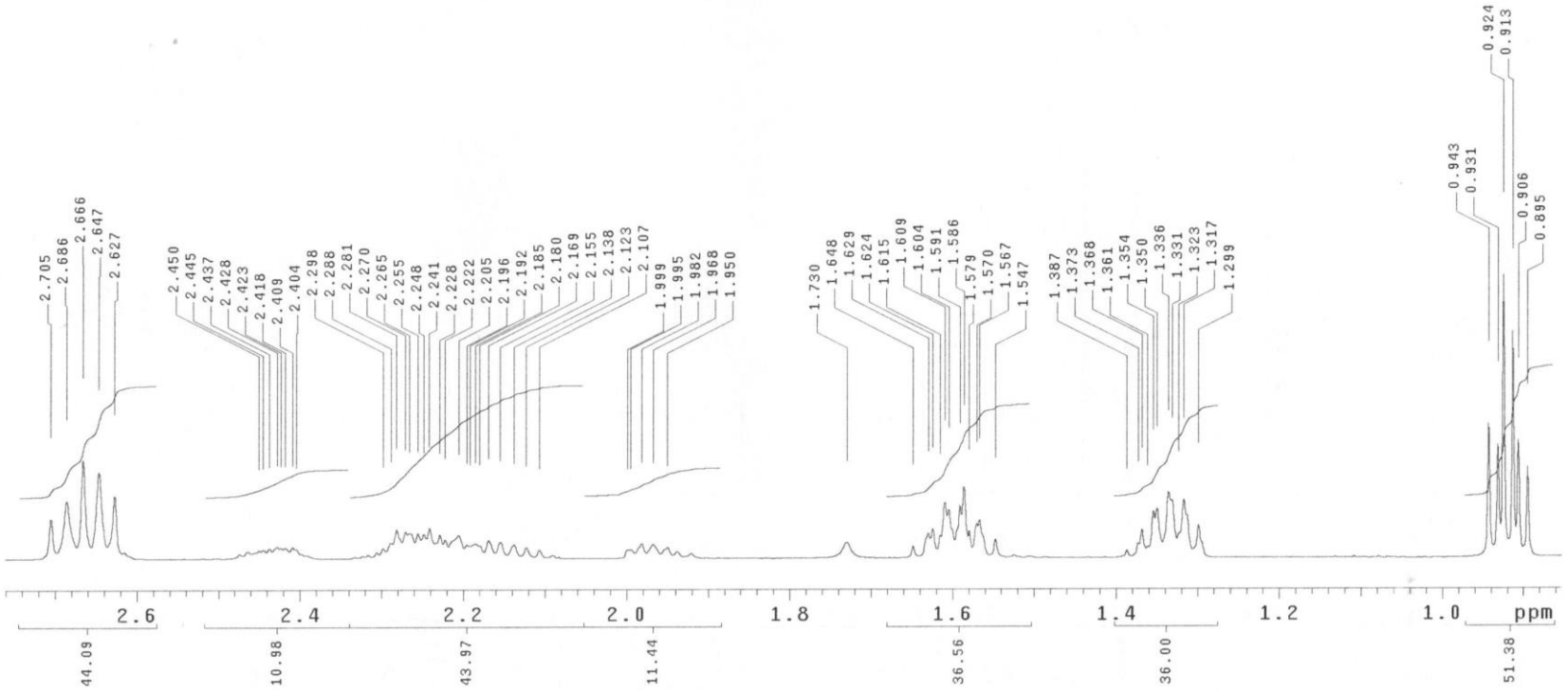
Compound 5e

^{1}H NMR (400 MHz, $CDCl_3$) spectra

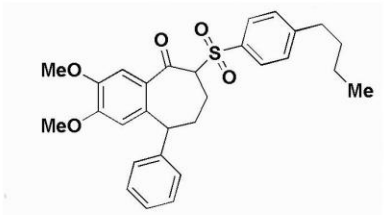
Compound 5e (^{1}H-NMR spectral data-2)



Compound 5e
^{1}H NMR (400 MHz, $CDCl_3$) spectra

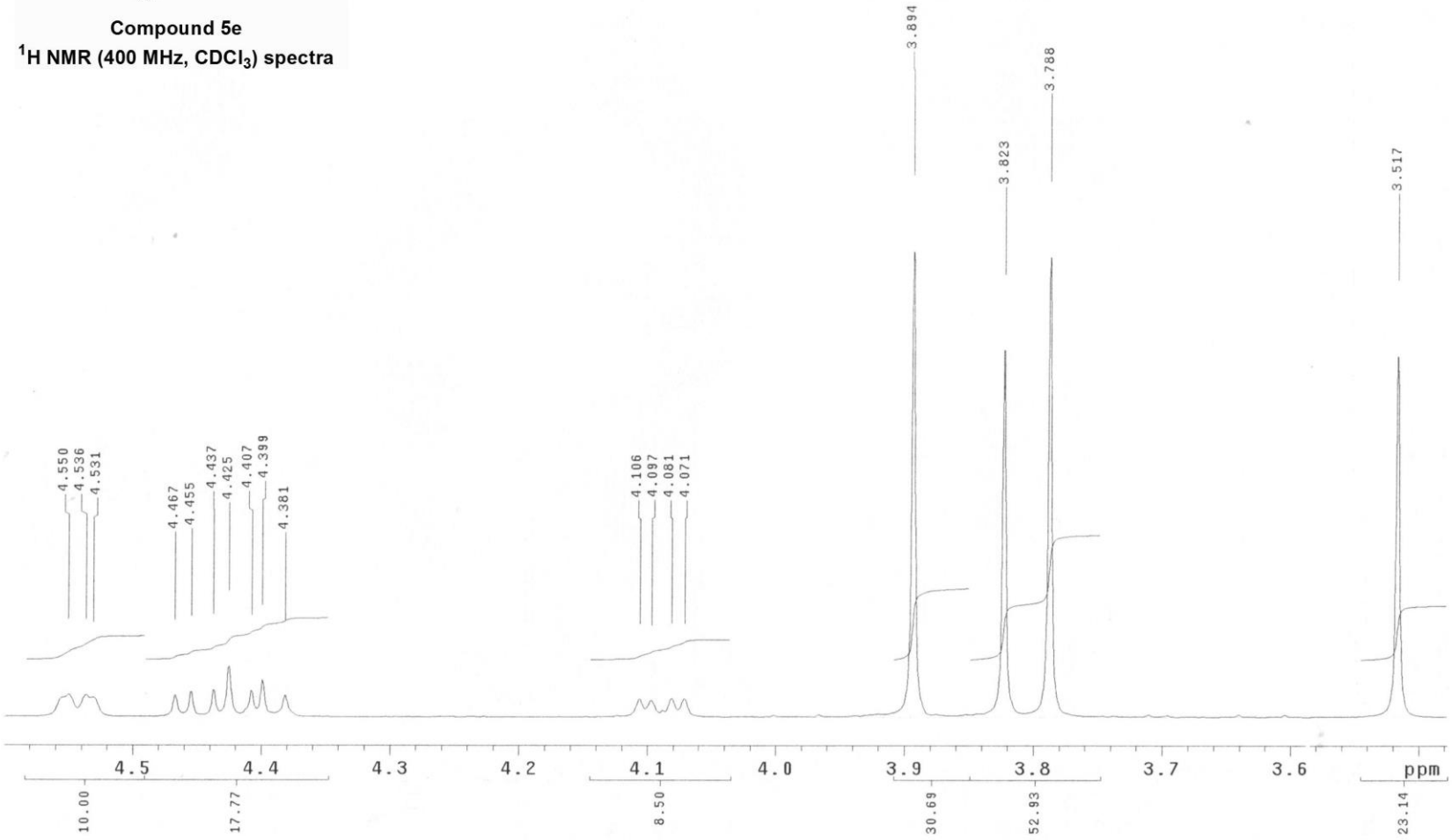


Compound 5e (^{1}H-NMR spectral data-3)



Compound 5e

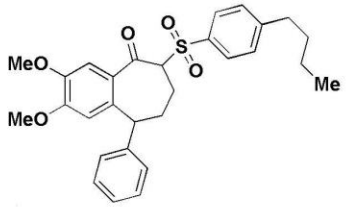
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 5e (^{13}C-NMR spectral data)

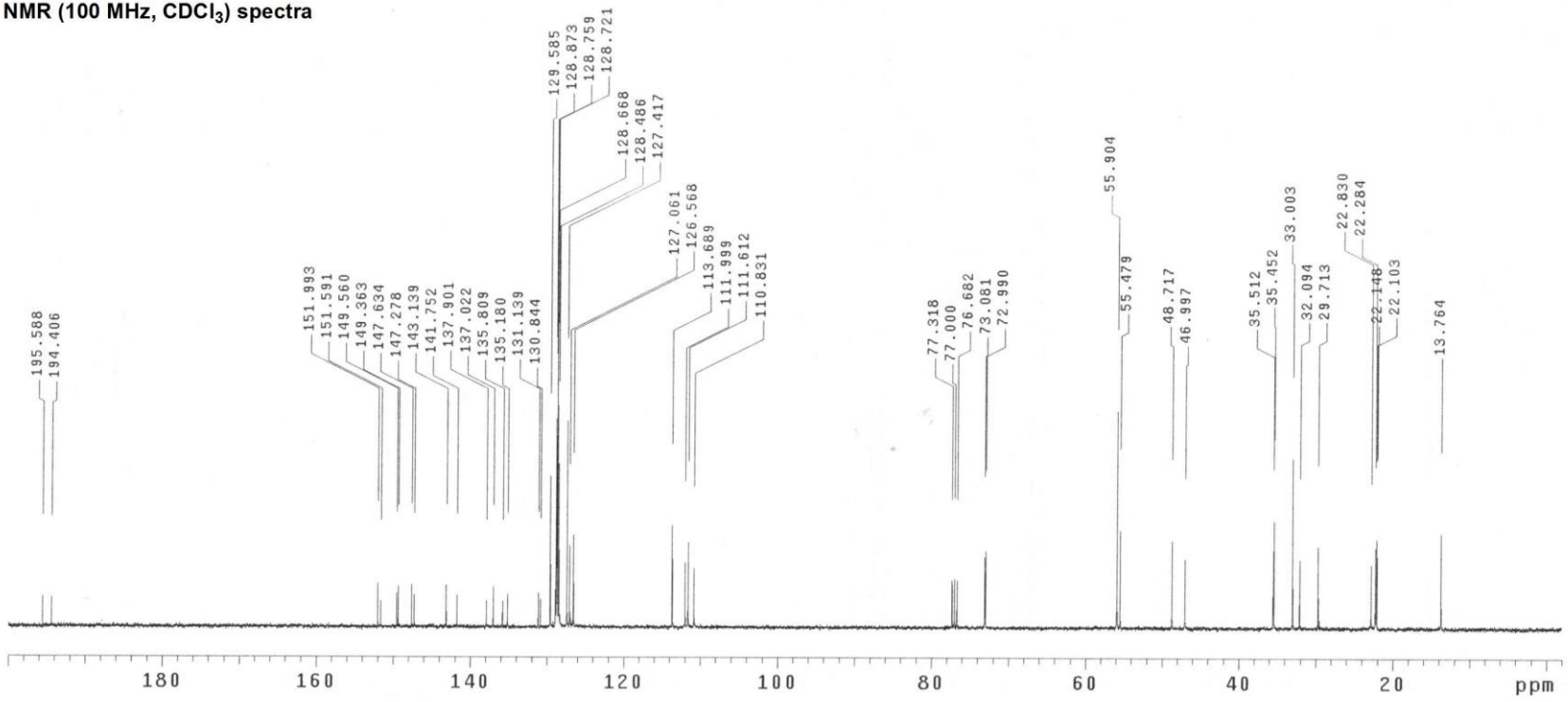
KSPhBuCBF

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Jan 14 2019
Solvent: CDCl3
Ambient temperature
Total 672 repetitions



Compound 5e

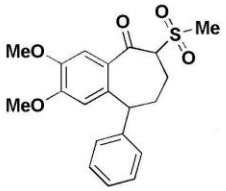
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 5f (^{1}H-NMR spectral data-1)

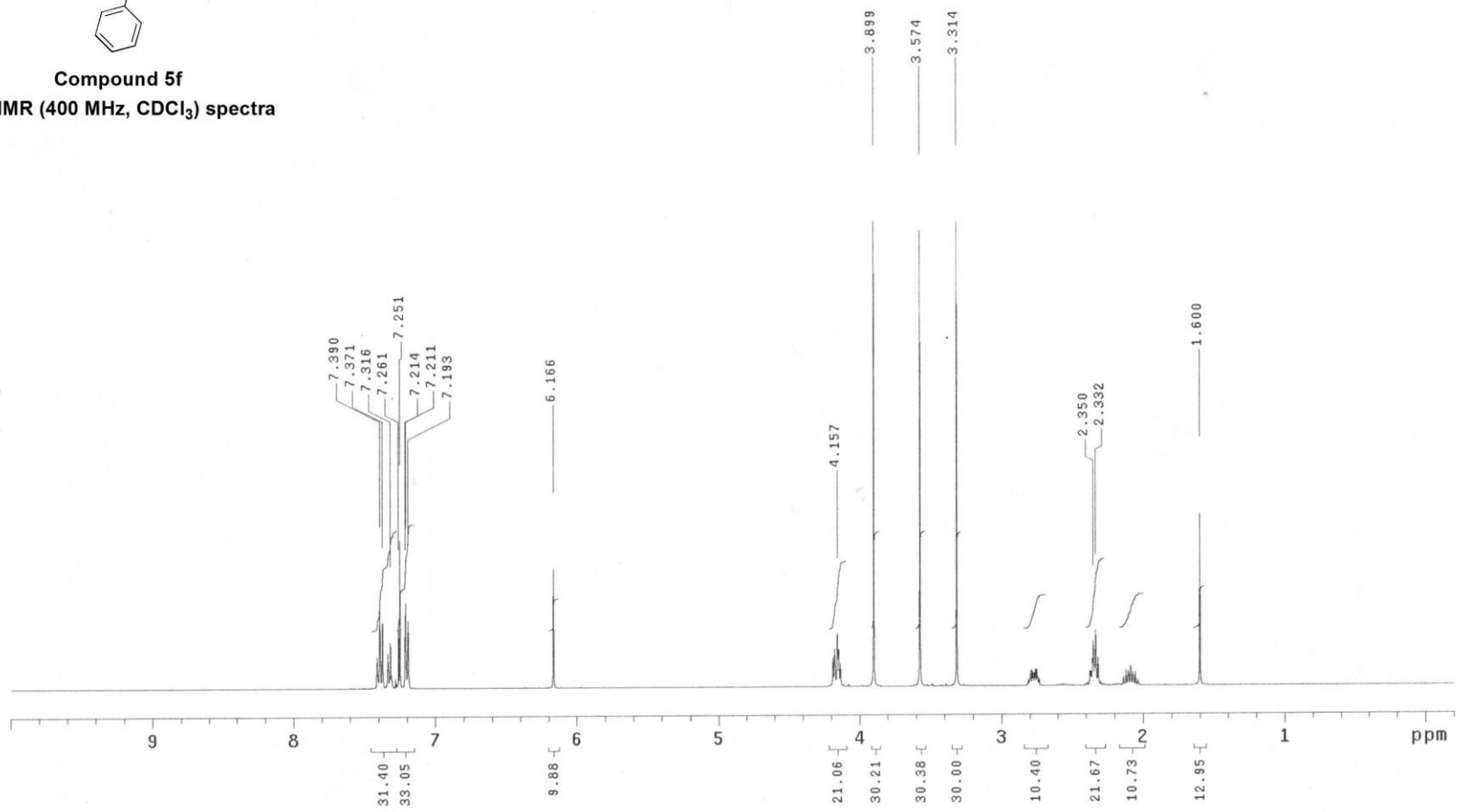
KSMSCBF

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Dec 17 2018
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

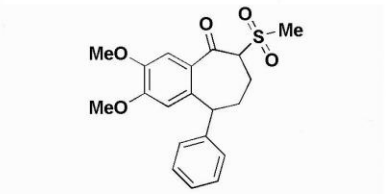


Compound 5f

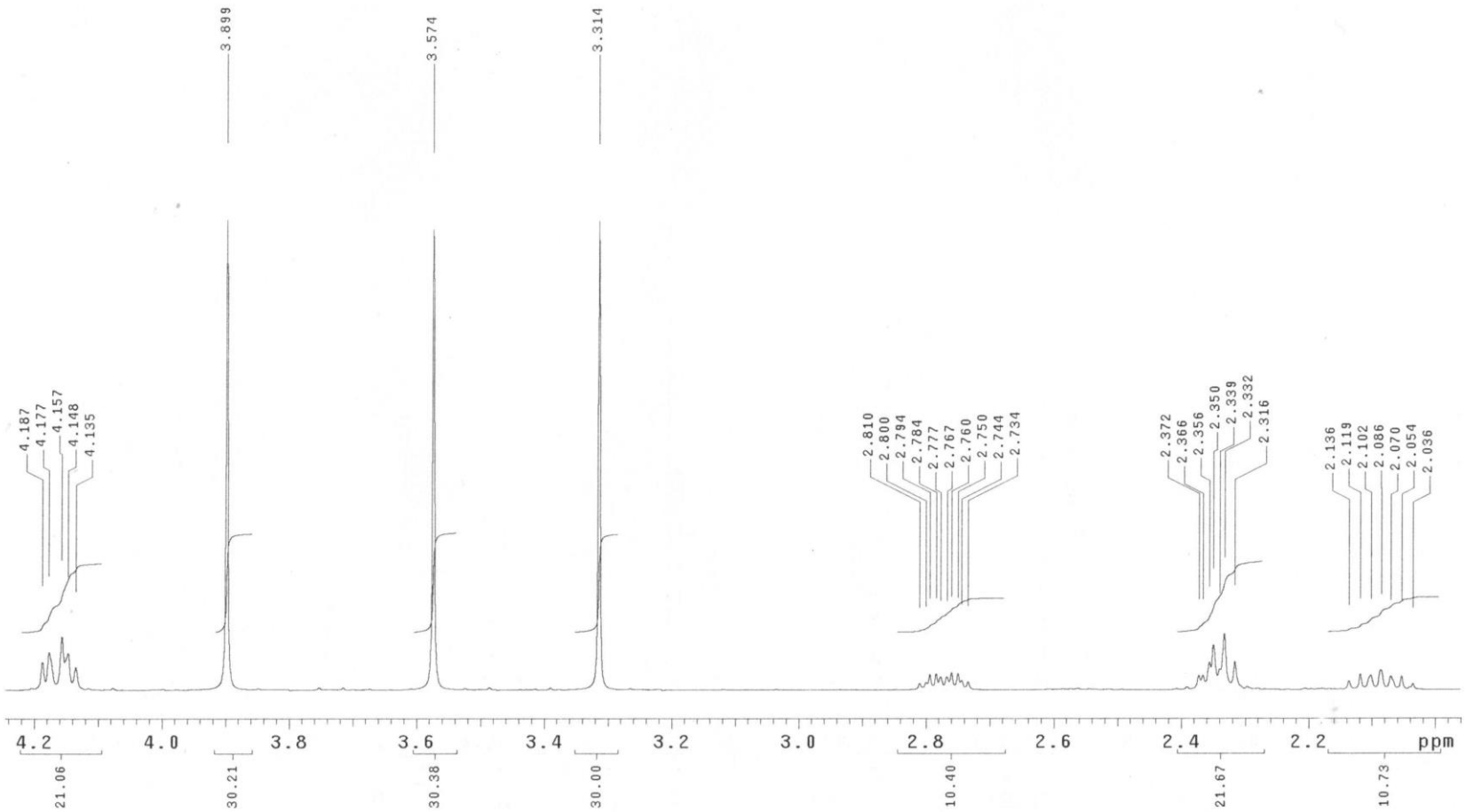
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 5f (^{1}H-NMR spectral data-2)



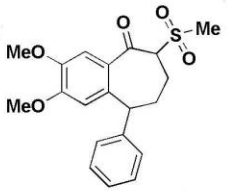
Compound 5f
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 5f (^{13}C-NMR spectral data)

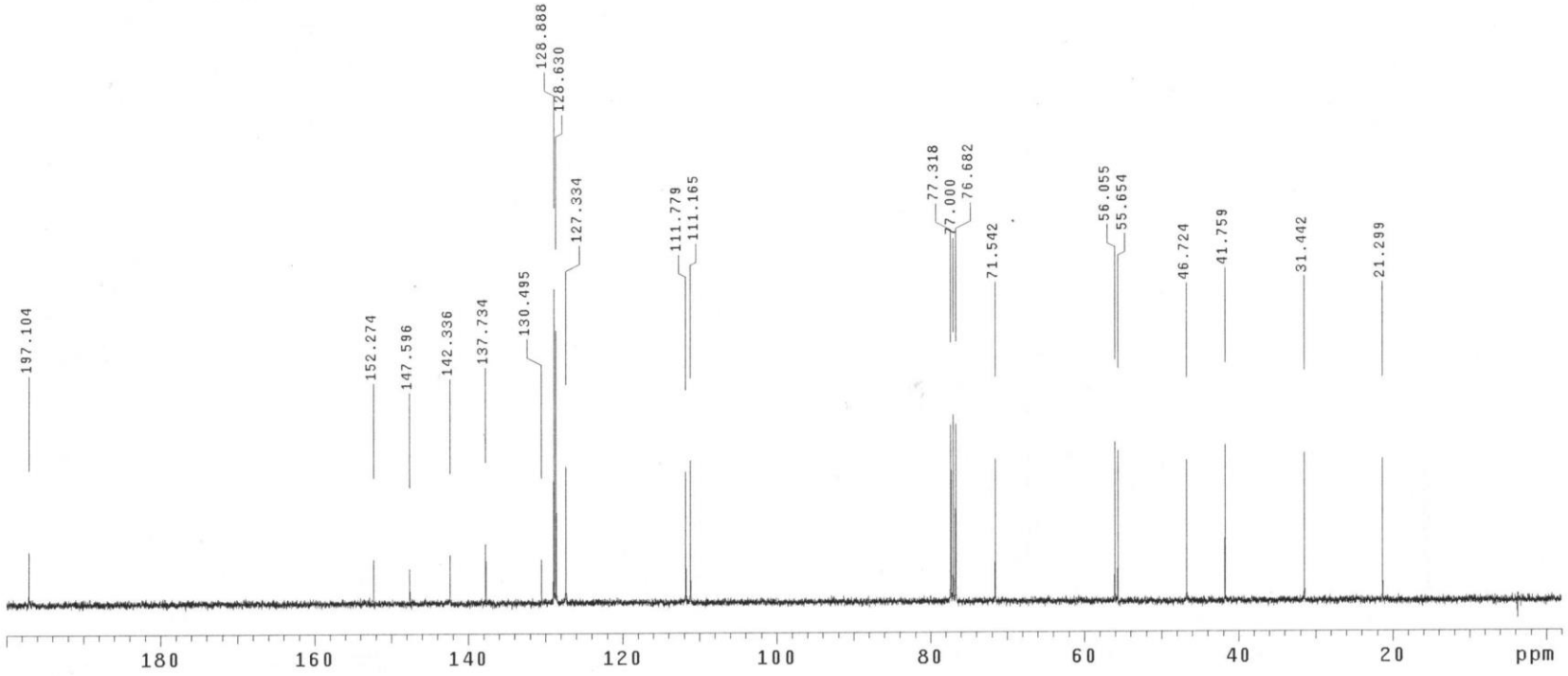
KSMSCBF

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Dec 17 2018
Solvent: CDCl3
Ambient temperature
Total 2464 repetitions

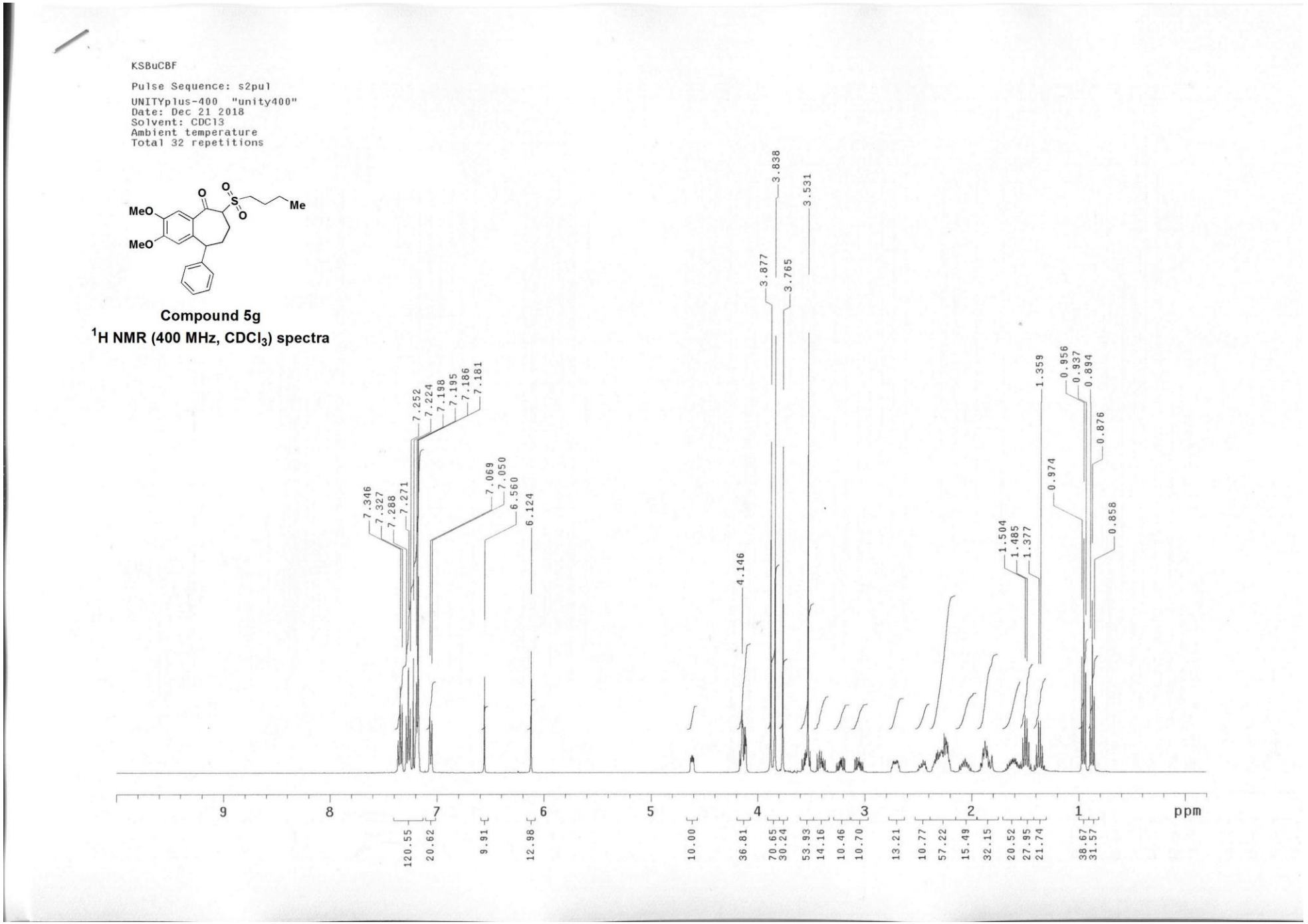


Compound 5f

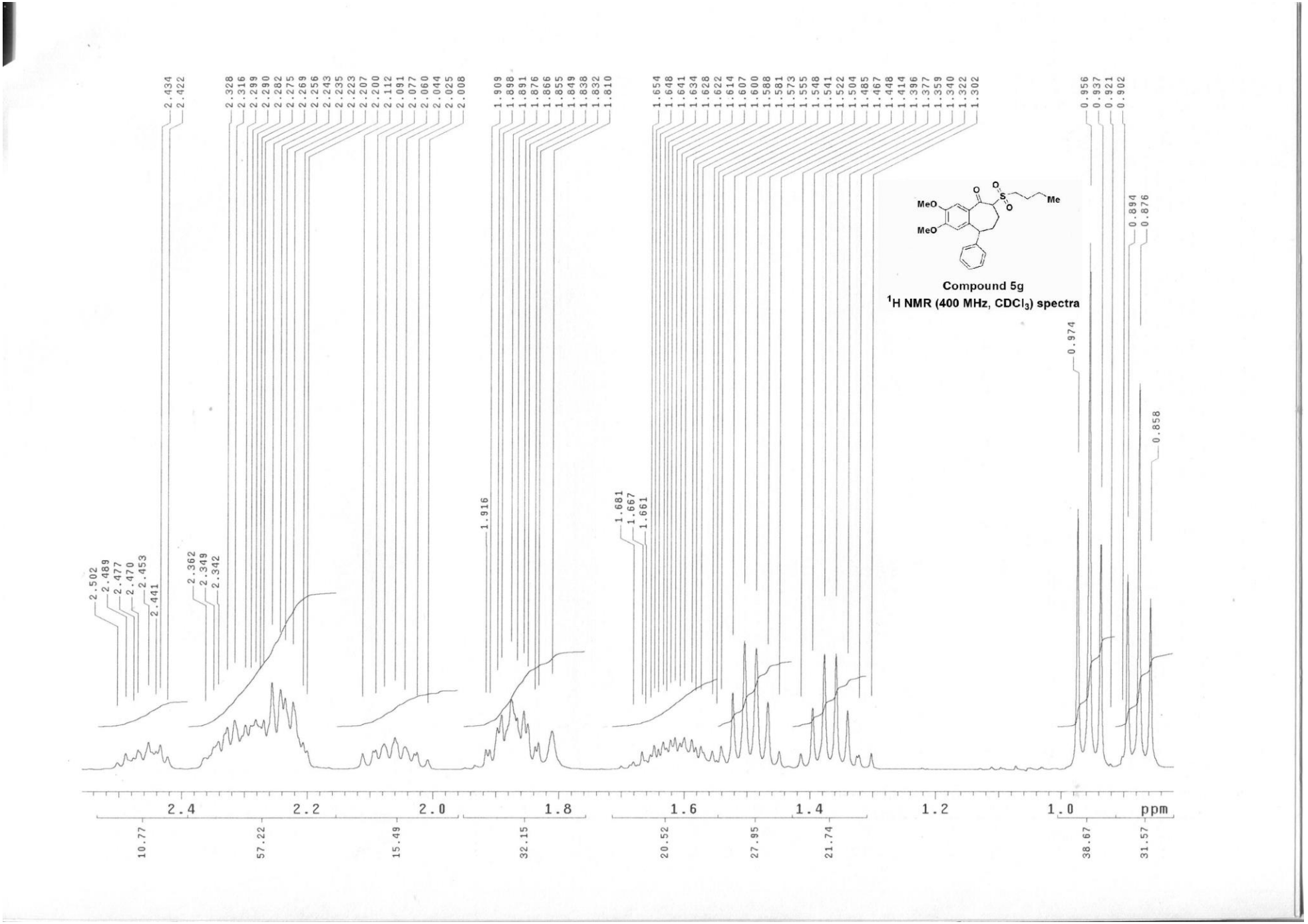
^{13}C NMR (100 MHz, $CDCl_3$) spectra



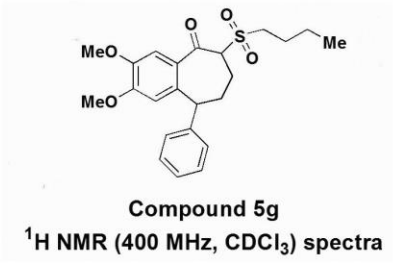
Compound 5g (^{1}H-NMR spectral data-1)



Compound 5g (^{1}H-NMR spectral data-2)



Compound 5g (^{1}H-NMR spectral data-3)

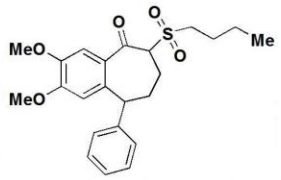


Compound 5g
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 5g (^{13}C-NMR spectral data)

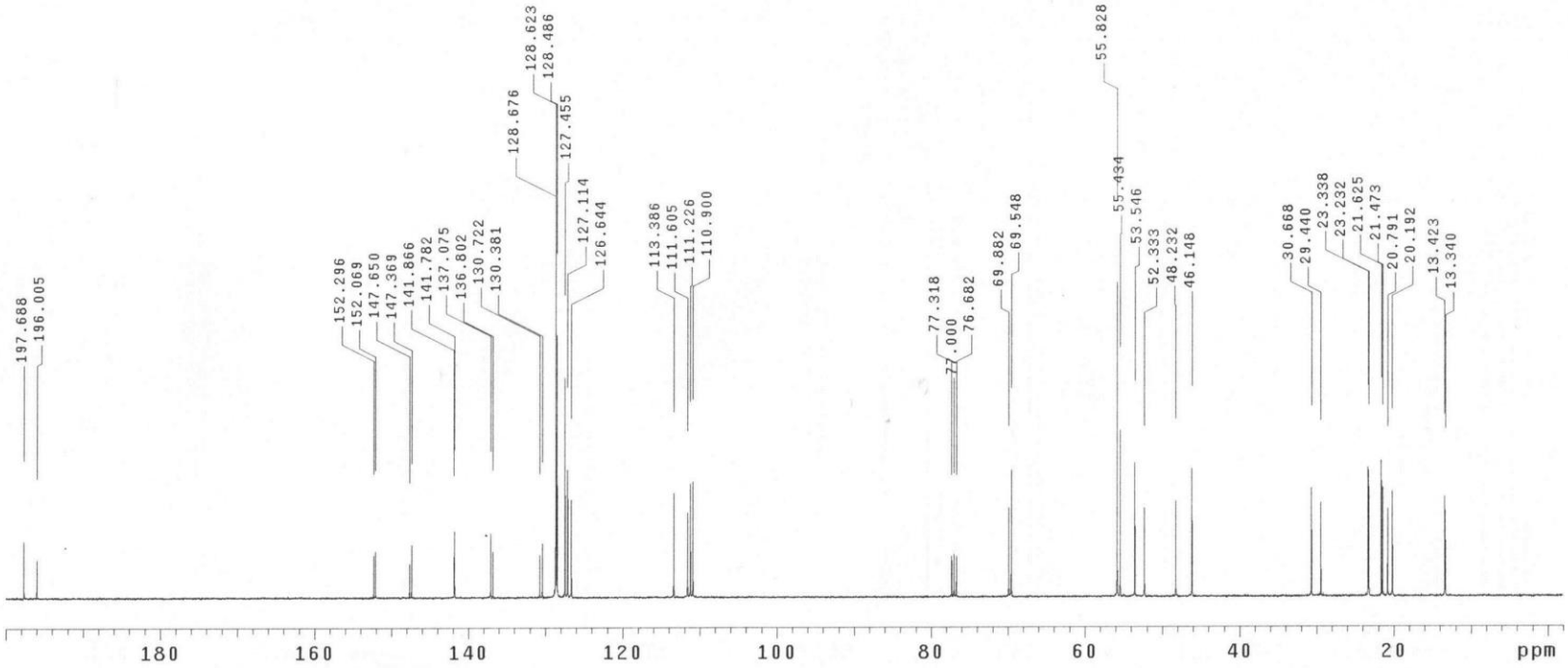
KSBuCBF

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Dec 21 2018
Solvent: CDCl3
Ambient temperature
Total 1392 repetitions



Compound 5g

^{13}C NMR (100 MHz, $CDCl_3$) spectra

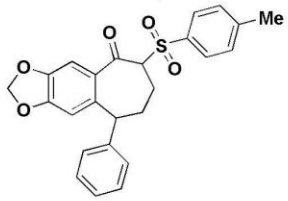


Compound 5h (^{1}H-NMR spectral data-1)

KSE1CBF

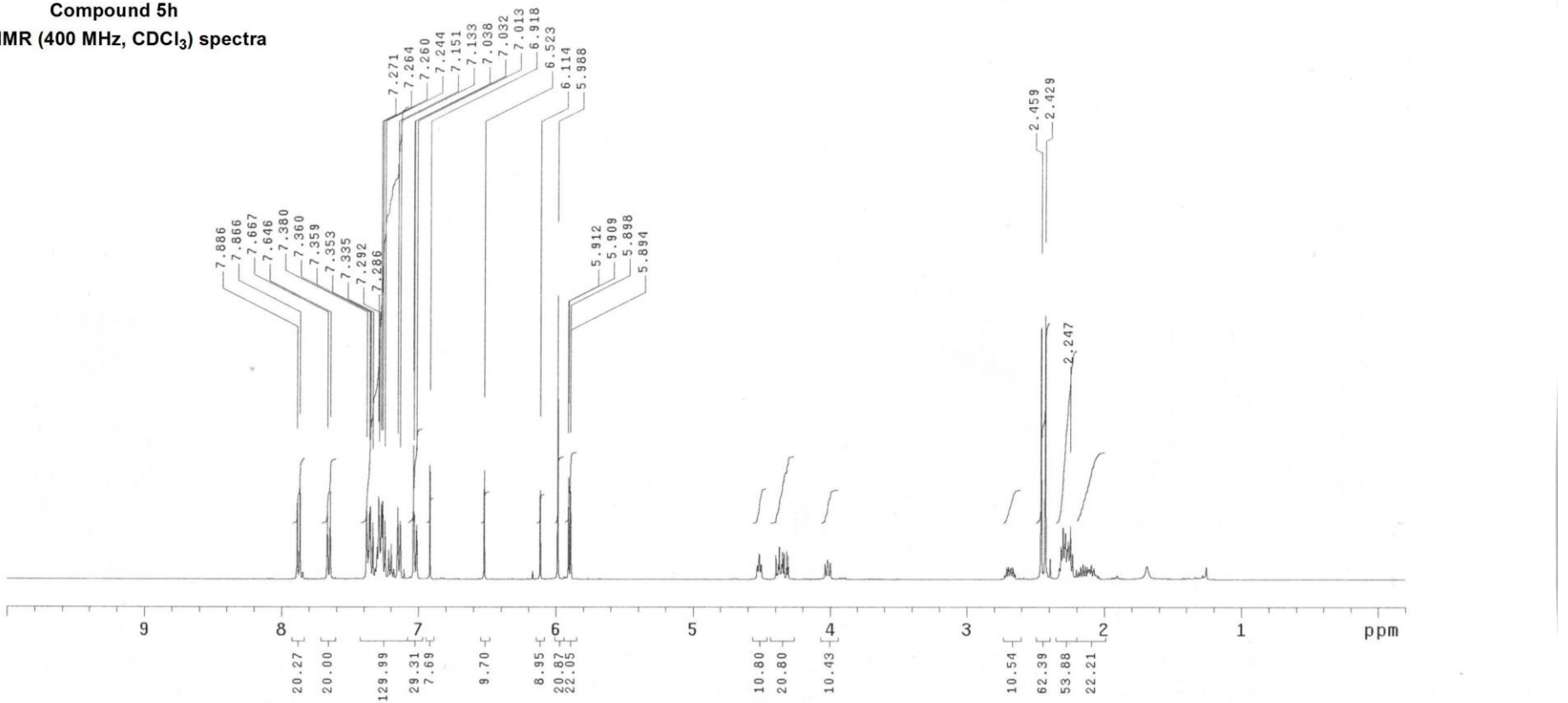
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 16 2019
Solvent: CDCl3
Ambient temperature
Total 64 repetitions

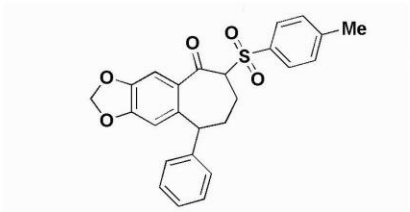


Compound 5h

^{1}H NMR (400 MHz, $CDCl_3$) spectra

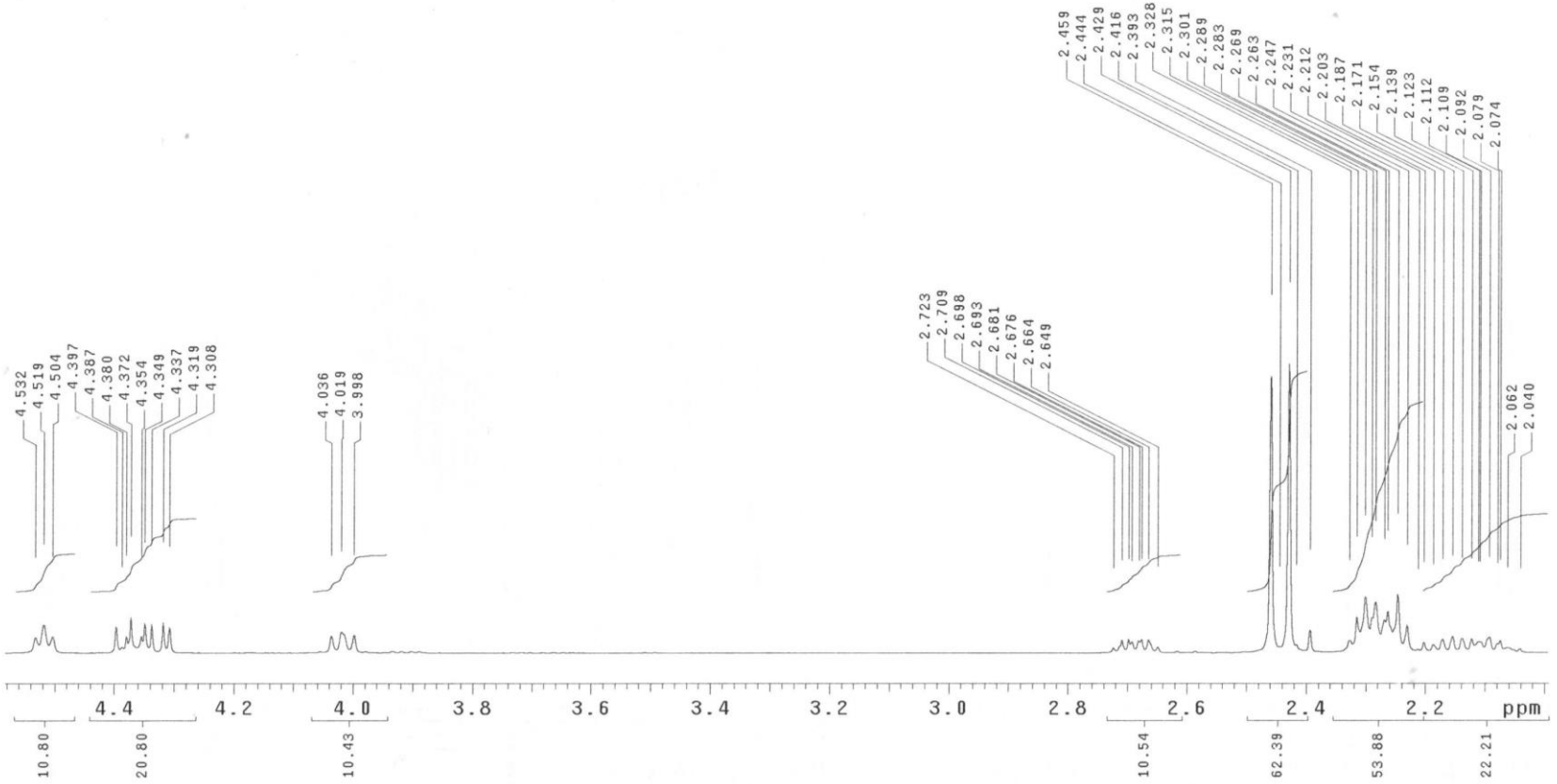


Compound 5h (^{1}H-NMR spectral data-2)



Compound 5h

^{1}H NMR (400 MHz, $CDCl_3$) spectra

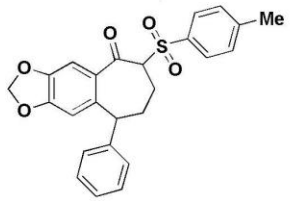


Compound 5h (^{13}C-NMR spectral data)

KSE1CBF

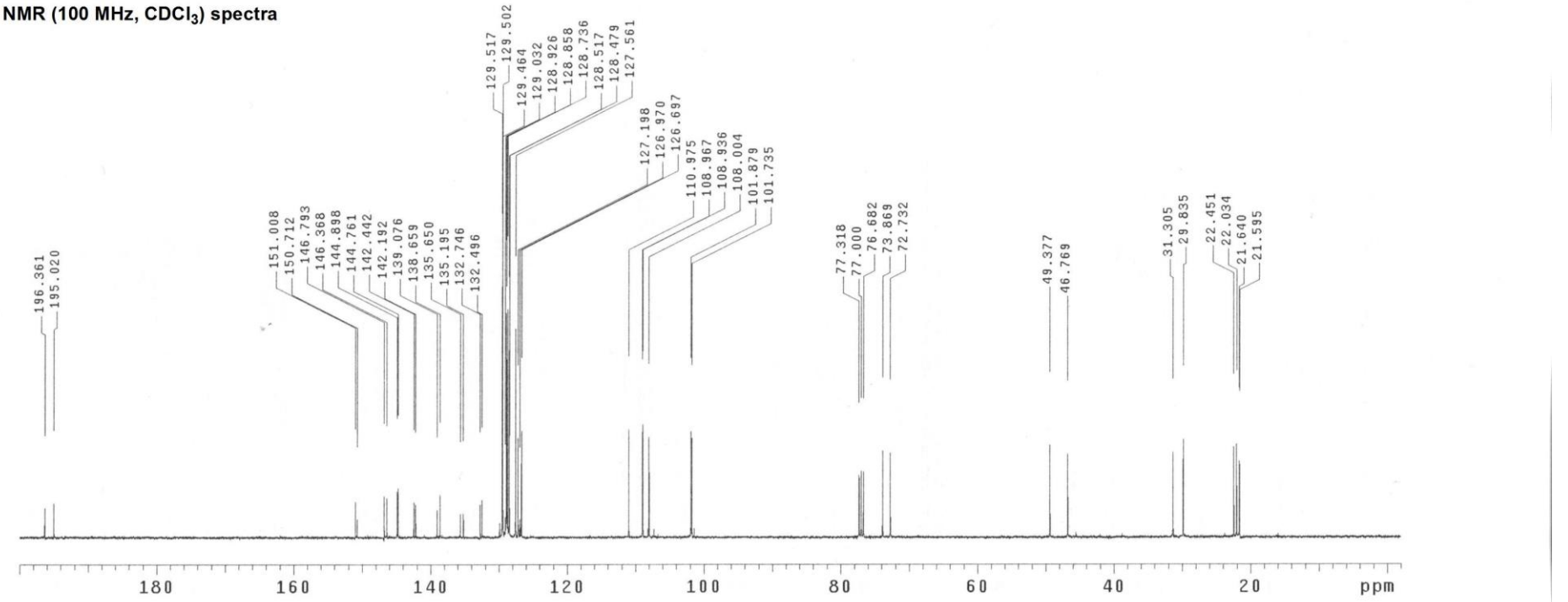
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 16 2019
Solvent: CDCl3
Ambient temperature
Total 4096 repetitions



Compound 5h

^{13}C NMR (100 MHz, $CDCl_3$) spectra

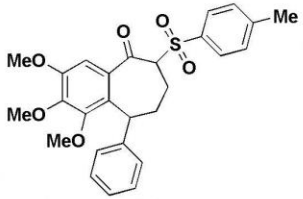


Compound 5i (^{1}H-NMR spectral data-1)

KSE8CBF

Pulse Sequence: s2pul

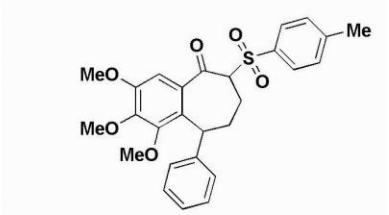
UNITYplus-400 "unity400"
Date: Jan 29 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 5i

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 5i (^{1}H-NMR spectral data-2)



Compound 5i

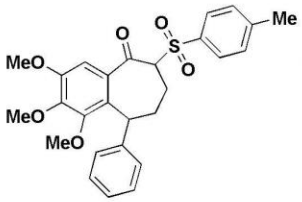
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 5i (^{13}C-NMR spectral data)

KSE8CBF

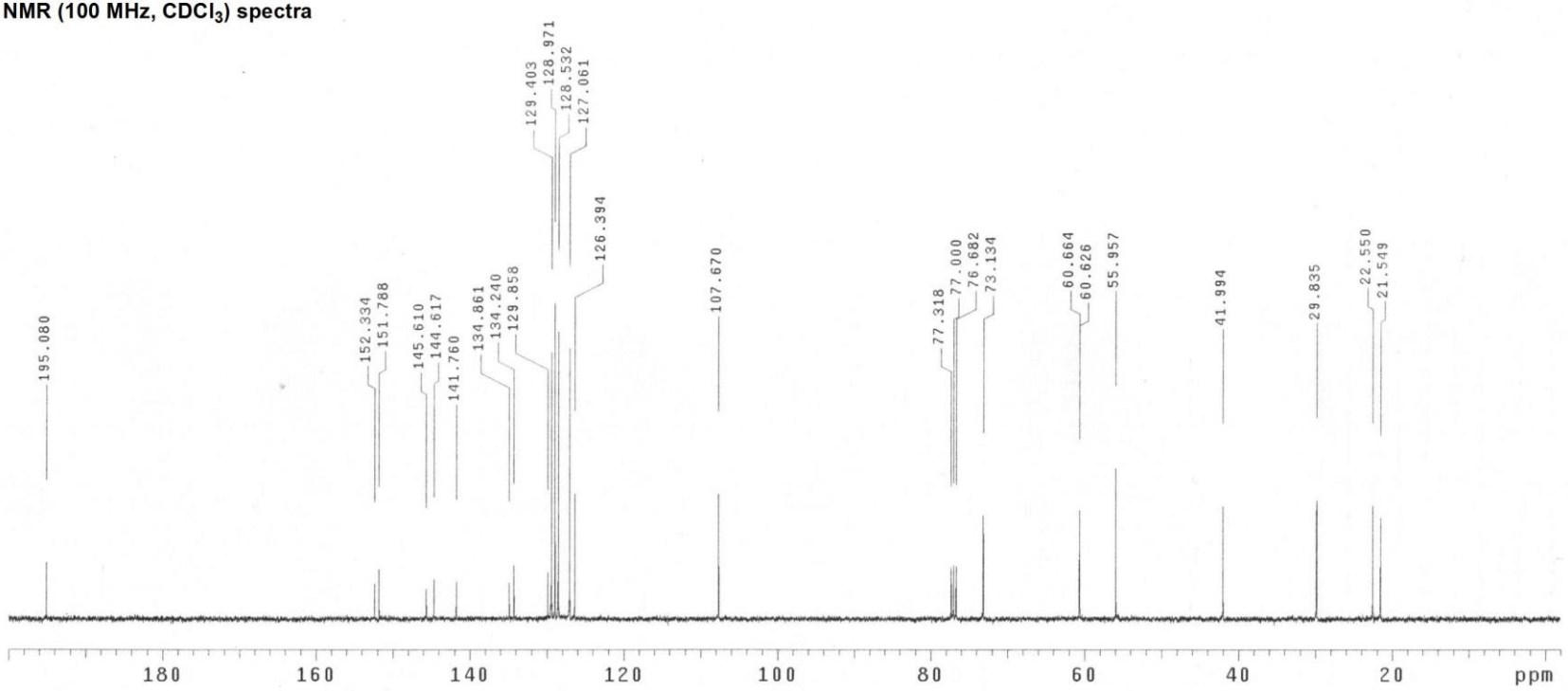
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 29 2019
Solvent: CDCl3
Ambient temperature
Total 480 repetitions



Compound 5i

^{13}C NMR (100 MHz, $CDCl_3$) spectra

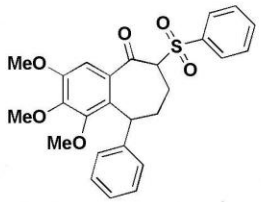


Compound 5j (^{1}H-NMR spectral data-1)

KS30BSCBF

Pulse Sequence: s2pul

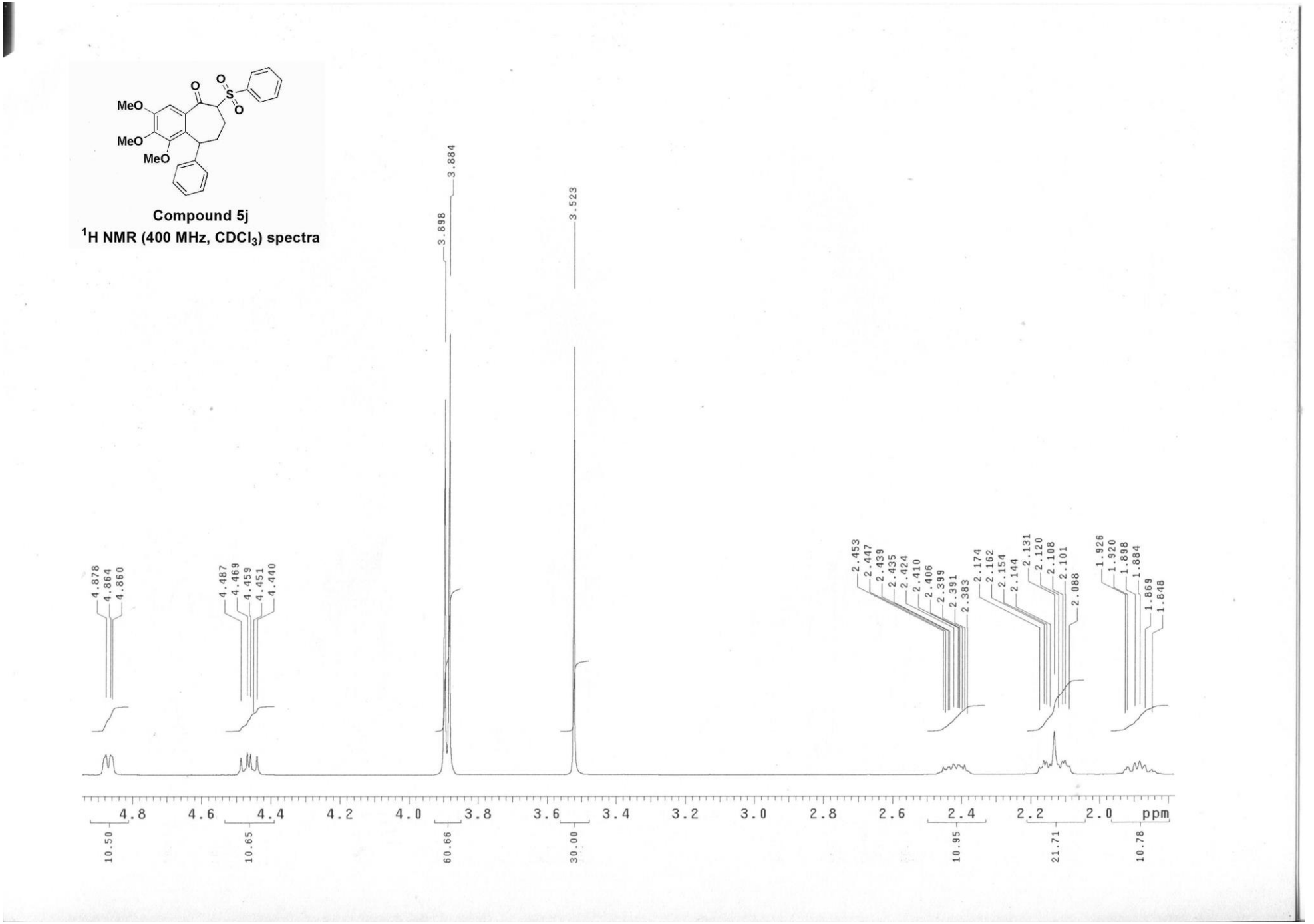
UNITYplus-400 "unity400"
Date: Feb 19 2019
Solvent: CDCl3
Ambient temperature
Total 72 repetitions



Compound 5j

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 5j (^{1}H-NMR spectral data-2)

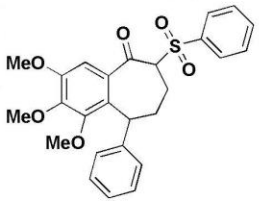


Compound 5j (^{13}C-NMR spectral data)

KS30BSCBF

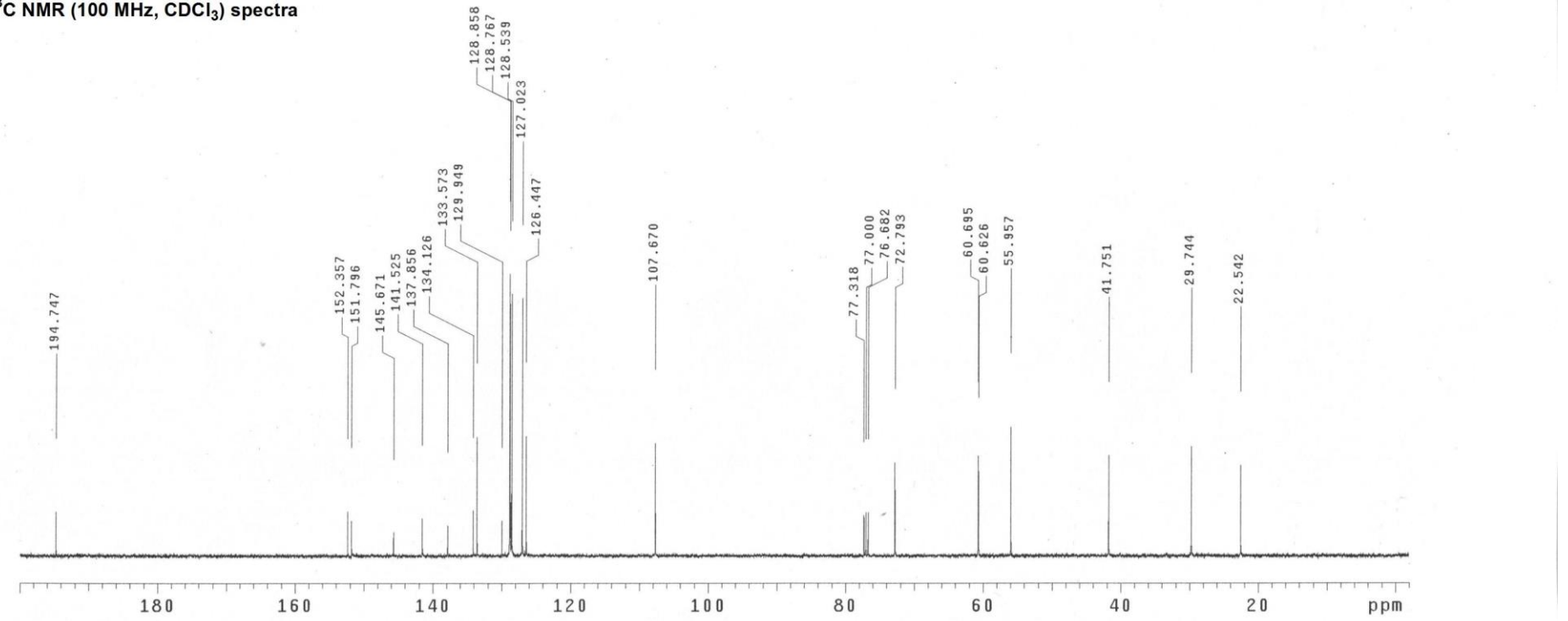
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Feb 19 2019
Solvent: CDCl3
Ambient temperature
Total 480 repetitions



Compound 5j

^{13}C NMR (100 MHz, $CDCl_3$) spectra

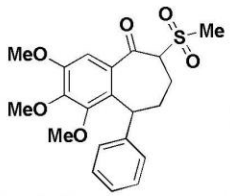


Compound 5k (^{1}H-NMR spectral data-1)

KS30MsCBF

Pulse Sequence: s2pul

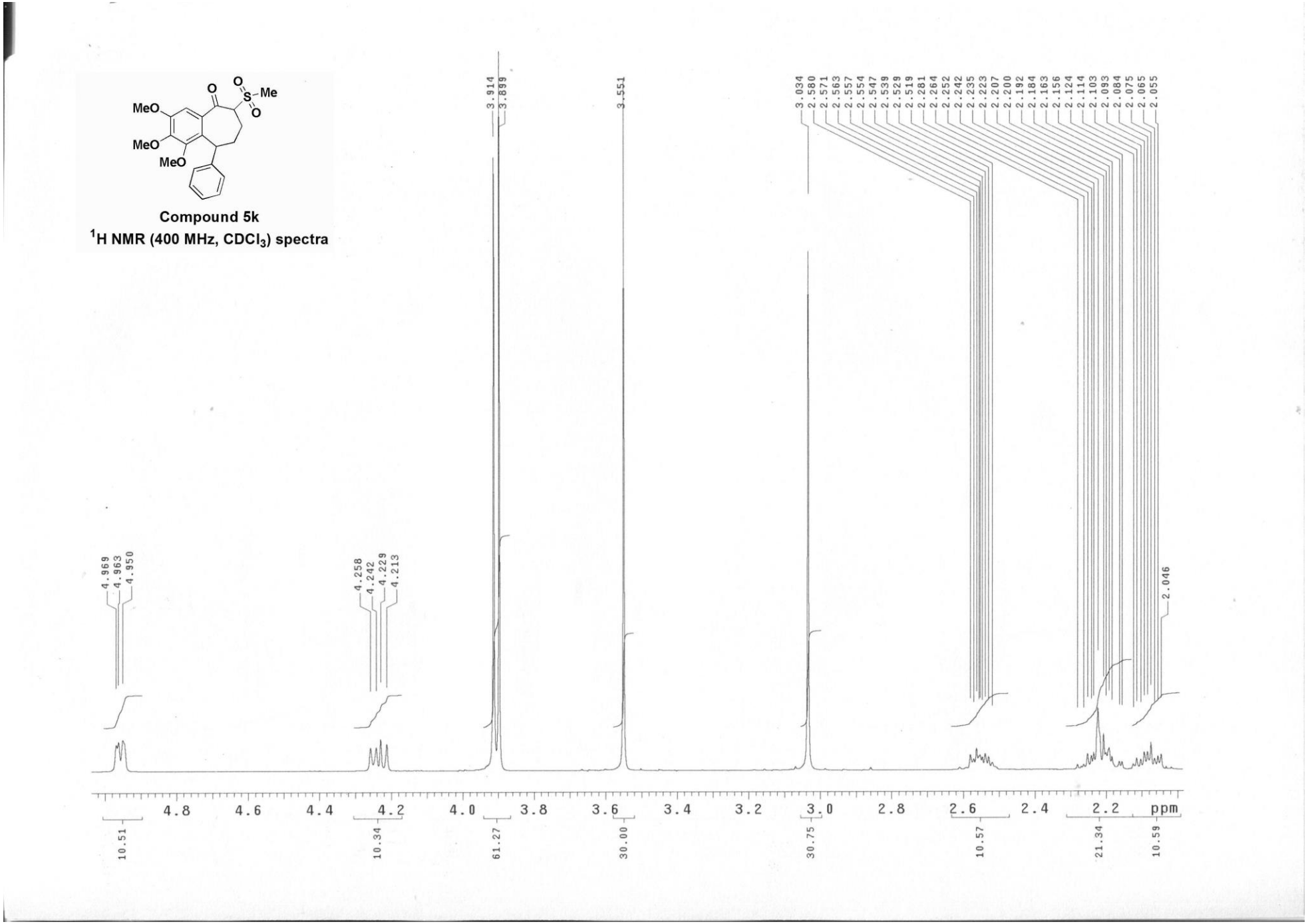
UNITYplus-400 "unity400"
Date: Feb 13 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 5k

^{1}H NMR (400 MHz, $CDCl_3$) spectra

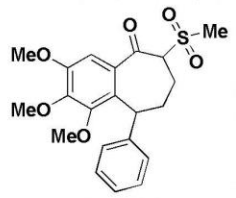
Compound 5k (^{1}H-NMR spectral data-2)



Compound 5k (^{13}C-NMR spectral data)

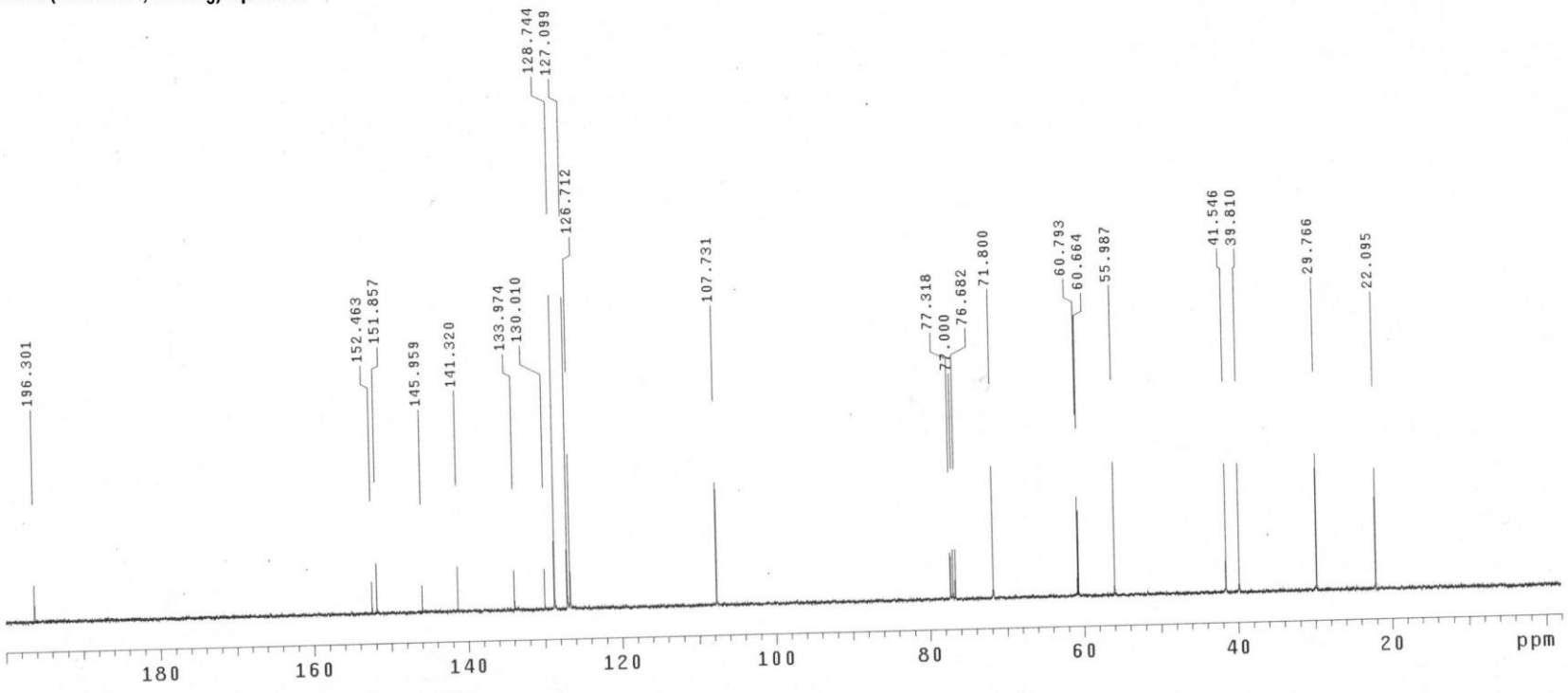
KS30MsCBF

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Feb 13 2019
Solvent: CDCl3
Ambient temperature
Total 576 repetitions

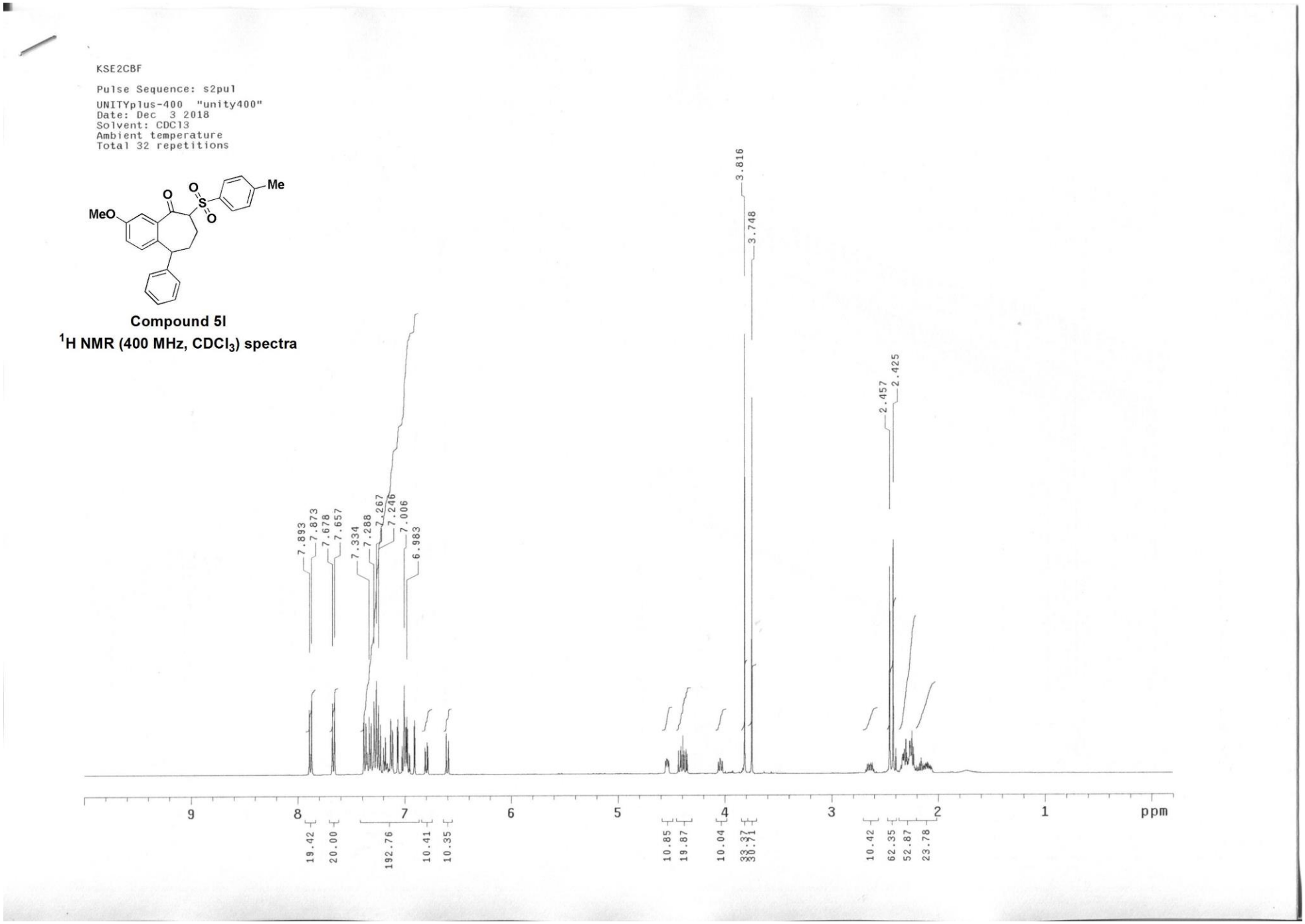


Compound 5k

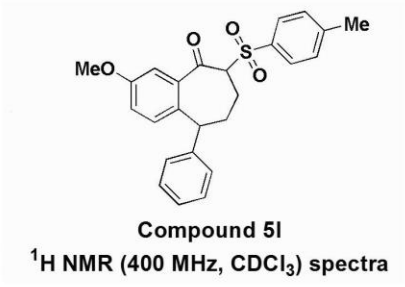
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 5l (^{1}H-NMR spectral data-1)



Compound 5l (^{1}H-NMR spectral data-2)



Compound 5l

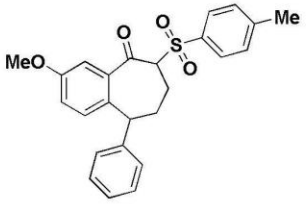
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 5l (^{13}C-NMR spectral data)

KSE2CBF

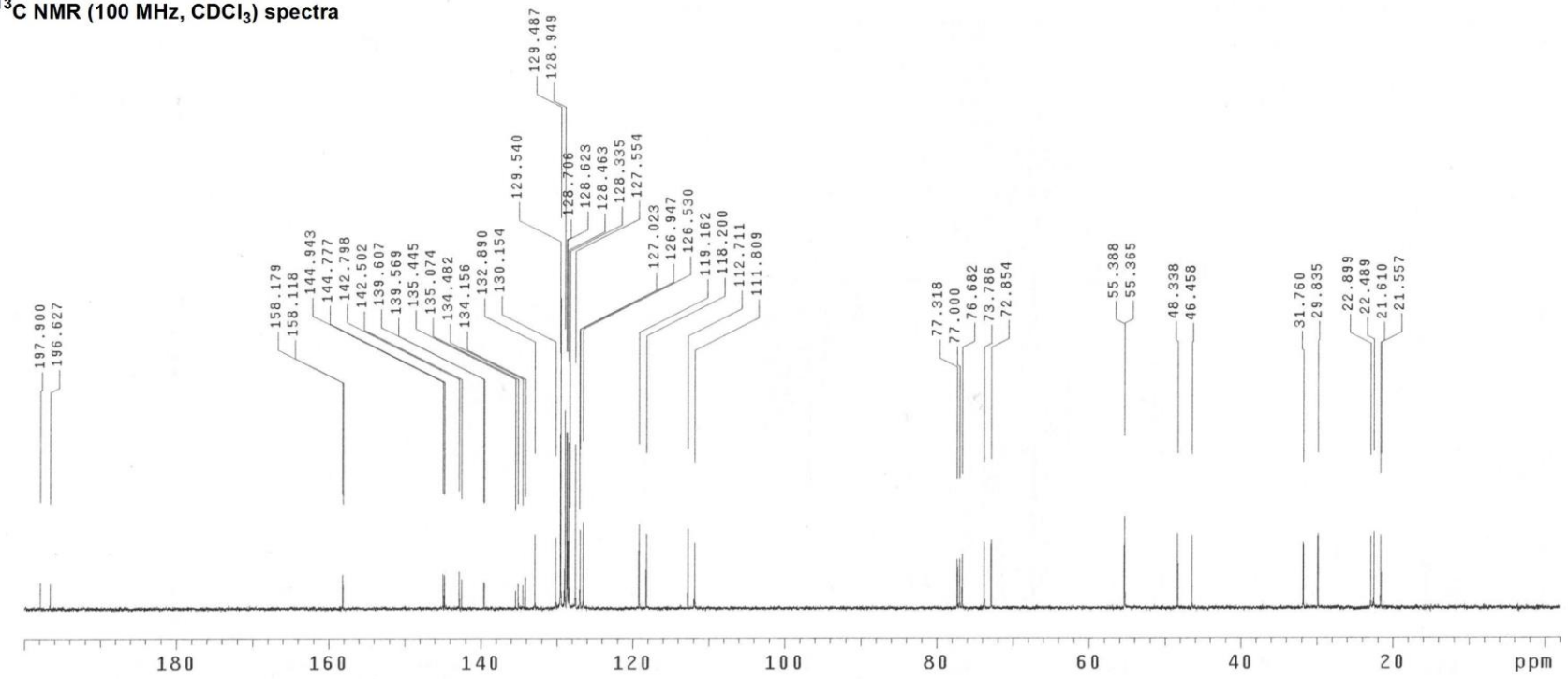
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Dec 3 2018
Solvent: CDCl3
Ambient temperature
Total 544 repetitions



Compound 5l

^{13}C NMR (100 MHz, $CDCl_3$) spectra

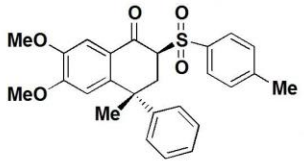


Compound 6a (^{1}H-NMR spectral data-1)

KSTsDBF

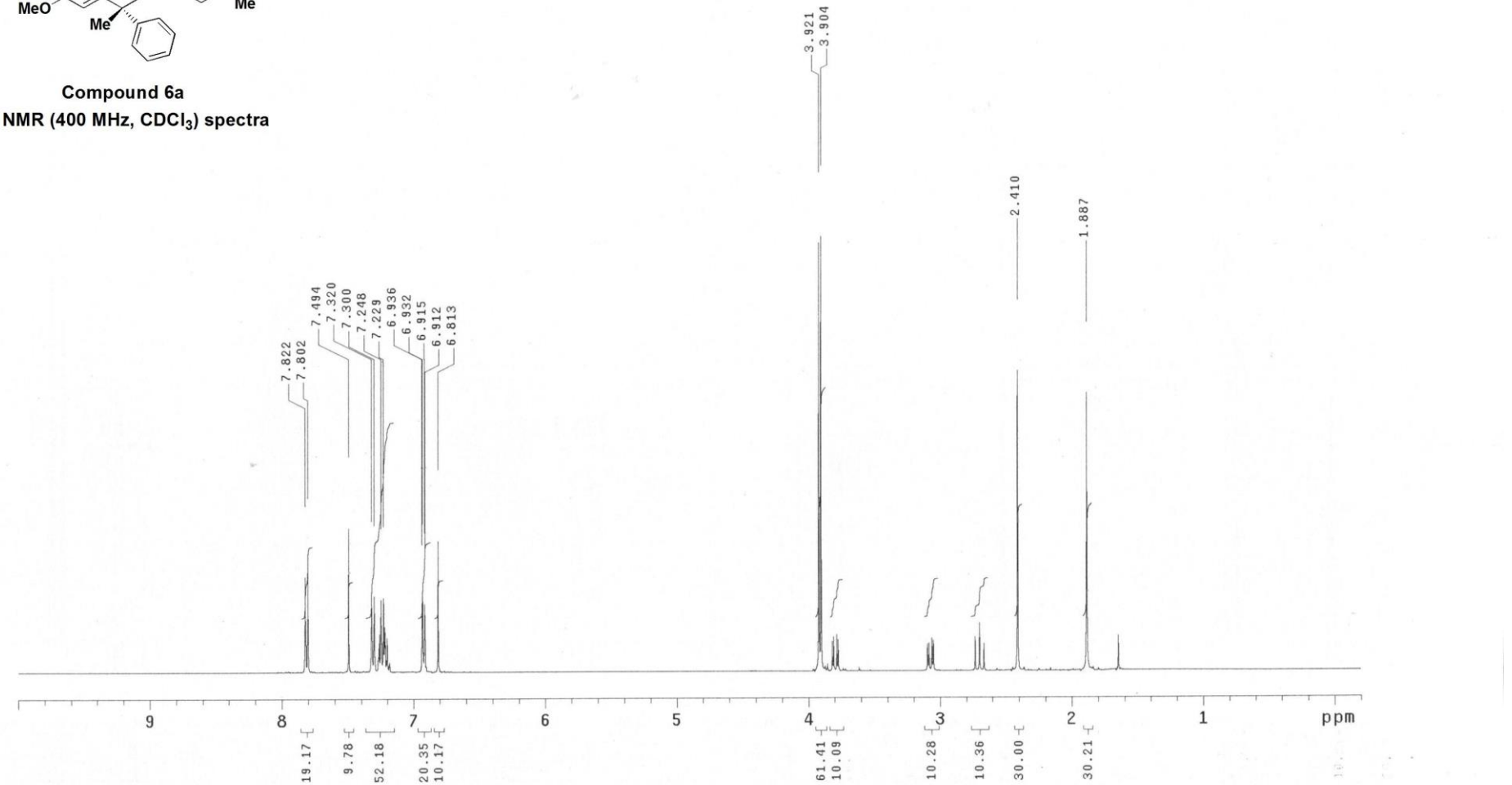
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Mar 4 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

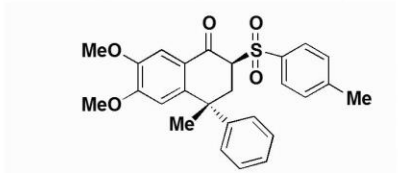


Compound 6a

^{1}H NMR (400 MHz, $CDCl_3$) spectra

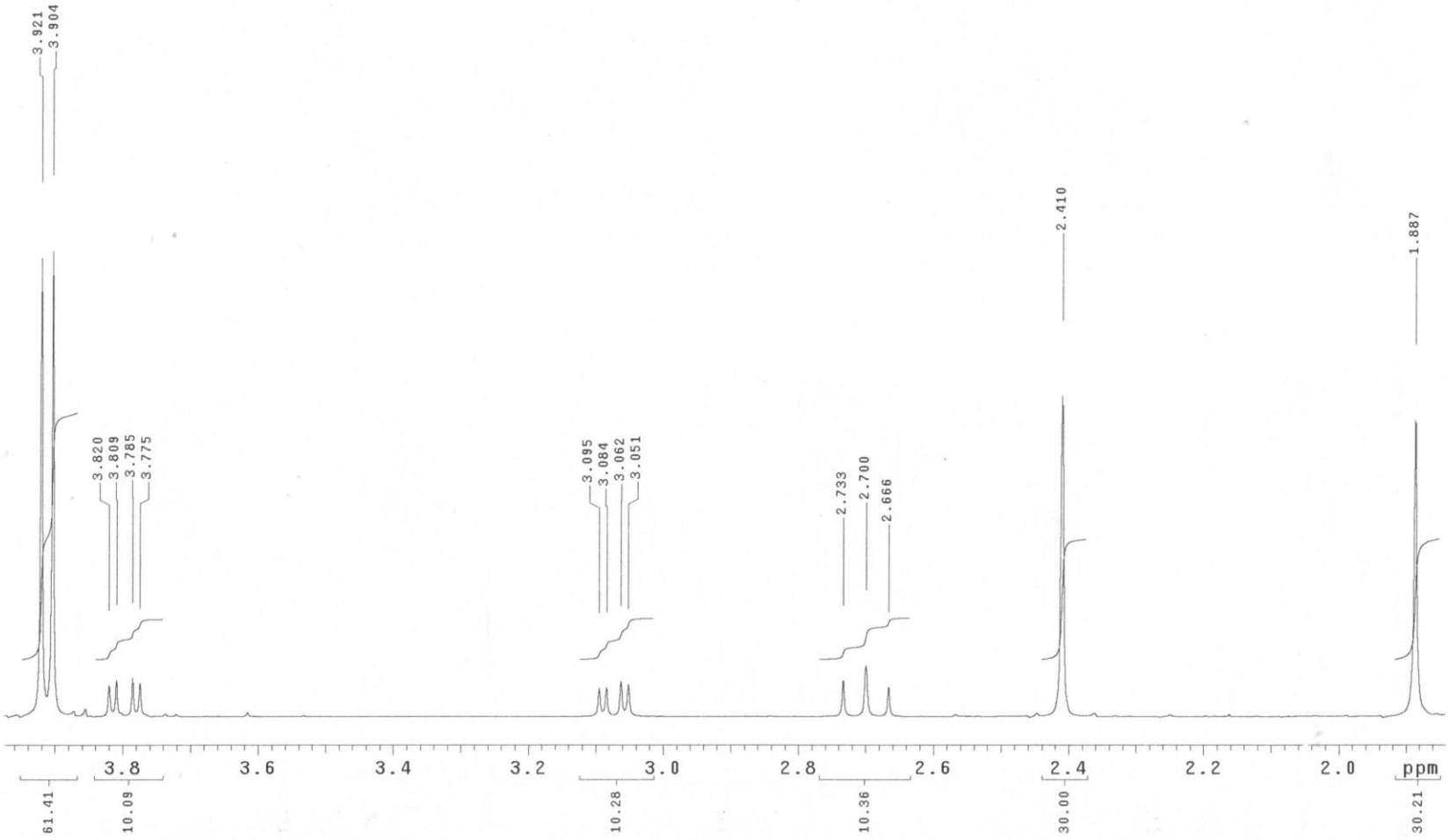


Compound 6a (^{1}H-NMR spectral data-2)



Compound 6a

^{1}H NMR (400 MHz, $CDCl_3$) spectra

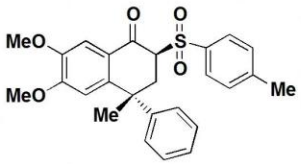


Compound 6a (^{13}C-NMR spectral data)

KSTsDBF

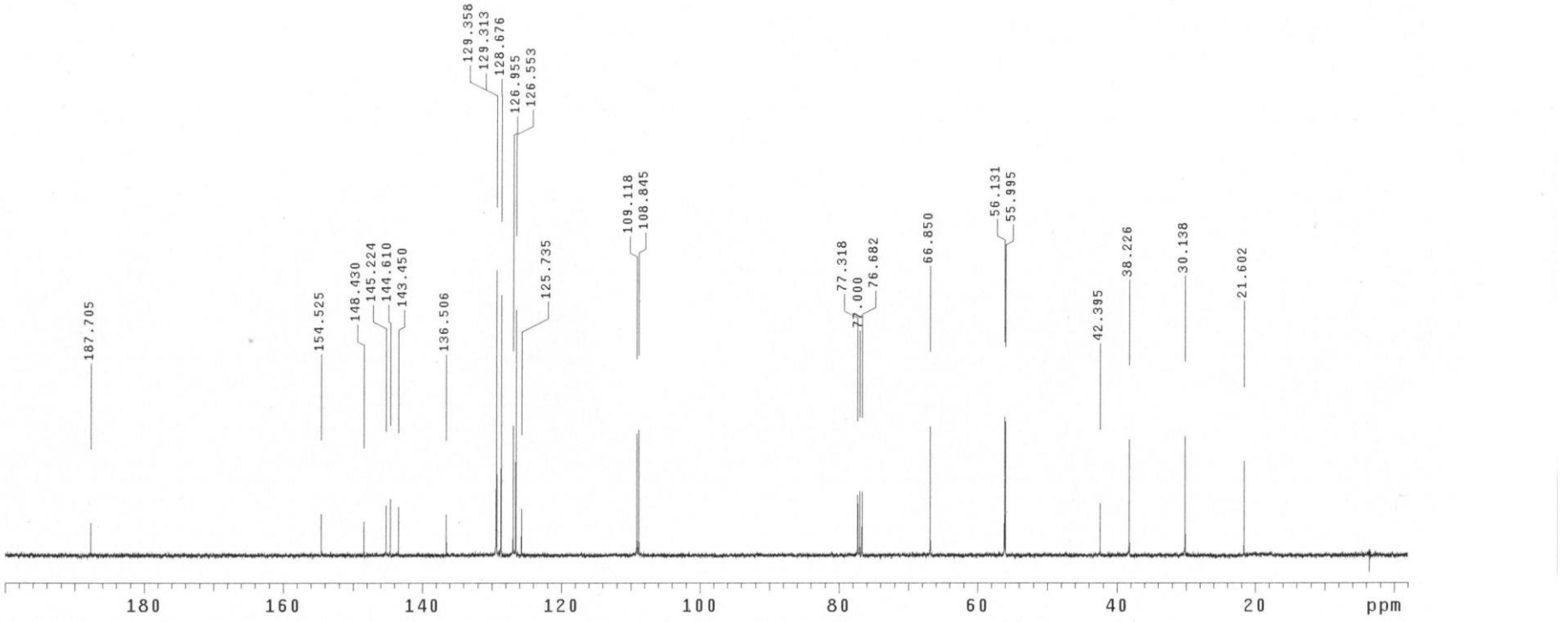
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Mar 4 2019
Solvent: CDCl3
Ambient temperature
Total 1024 repetitions



Compound 6a

^{13}C NMR (100 MHz, $CDCl_3$) spectra

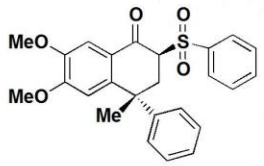


Compound 6b (^{1}H-NMR spectral data-1)

KSBSDBF

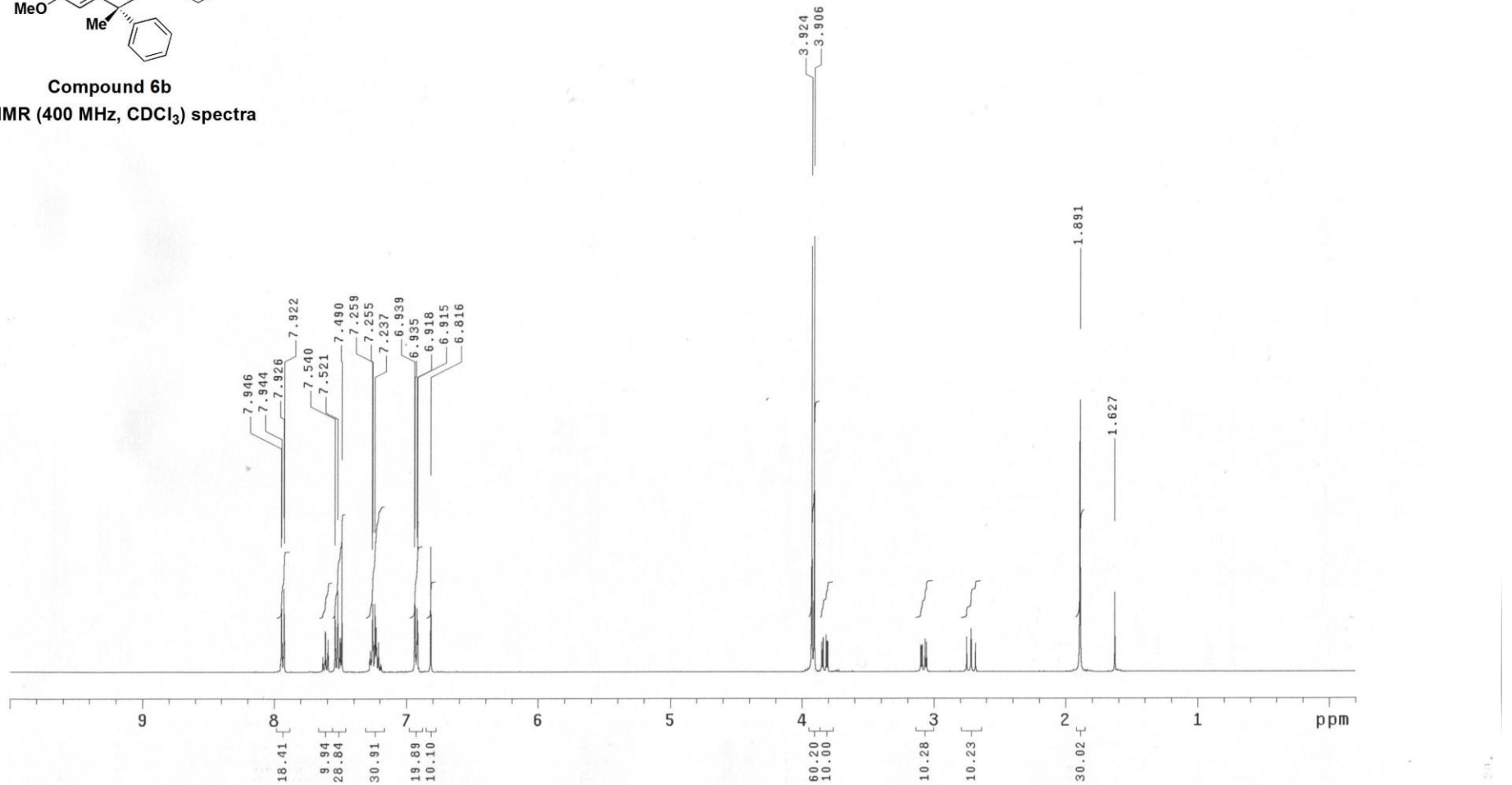
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Mar 14 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

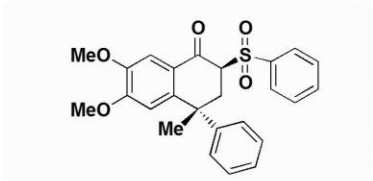


Compound 6b

^{1}H NMR (400 MHz, $CDCl_3$) spectra

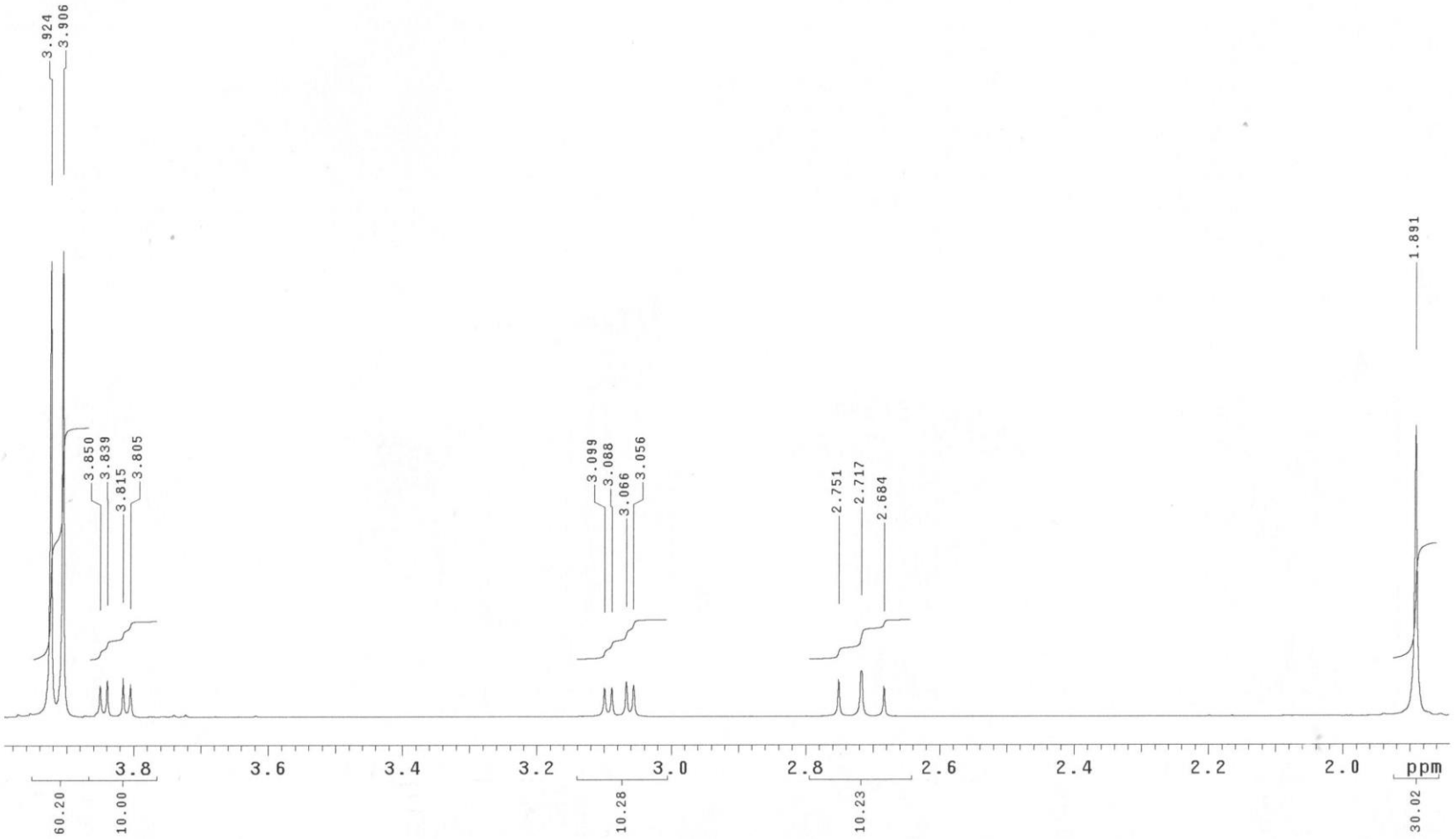


Compound 6b (^{1}H-NMR spectral data-2)



Compound 6b

^{1}H NMR (400 MHz, $CDCl_3$) spectra

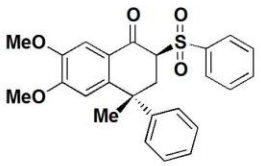


Compound 6b (^{13}C-NMR spectral data)

KSBSDBF

Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Mar 14 2019
Solvent: CDCl3
Ambient temperature
Total 1712 repetitions



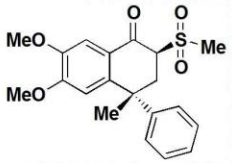
Compound 6b

^{13}C NMR (100 MHz, $CDCl_3$) spectra

Compound 6c (^{1}H-NMR spectral data-1)

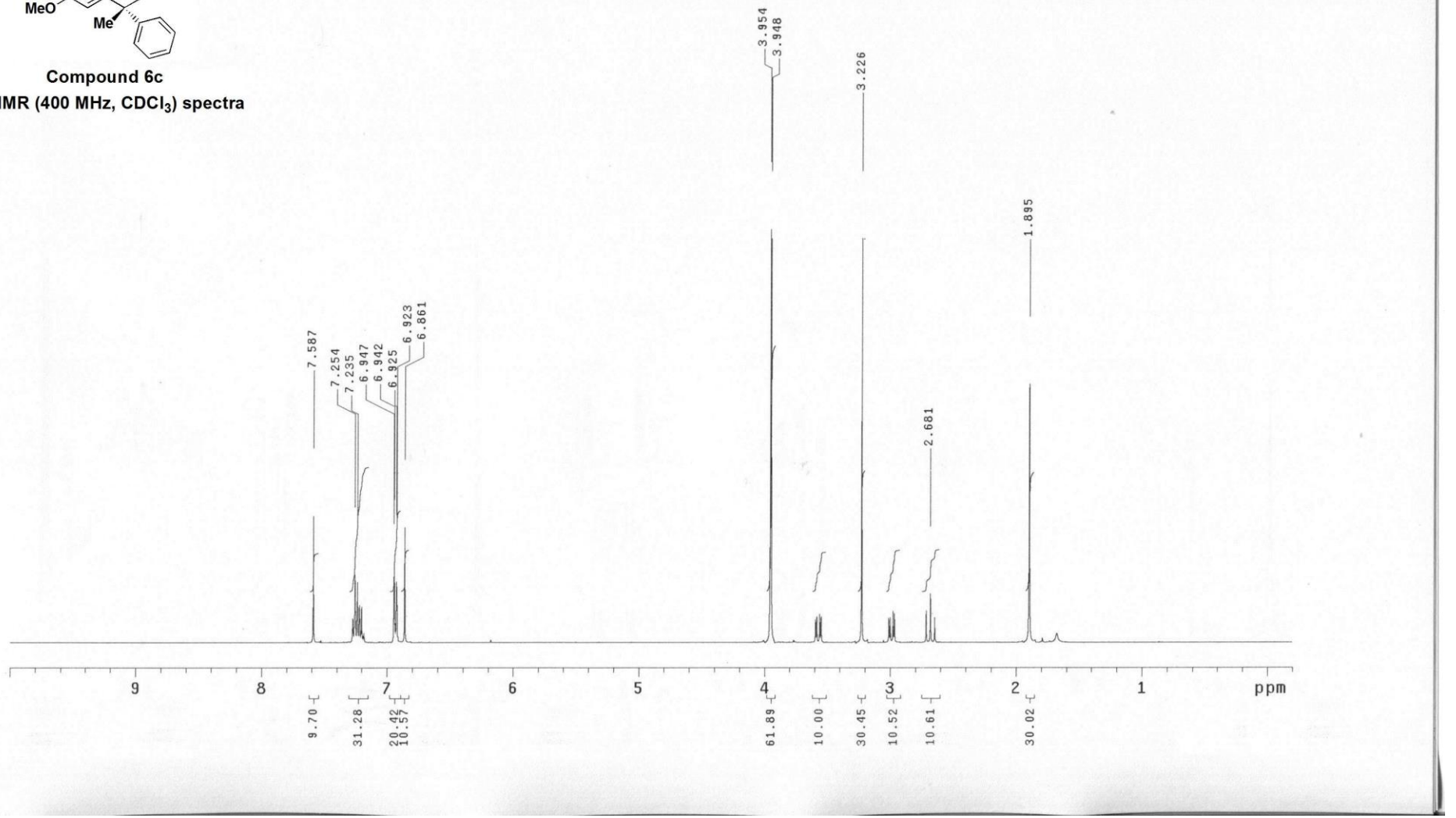
KSMSDBF

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Mar 22 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

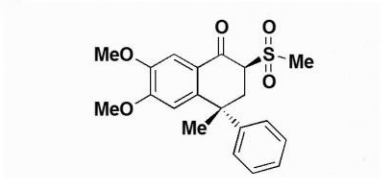


Compound 6c

^{1}H NMR (400 MHz, $CDCl_3$) spectra

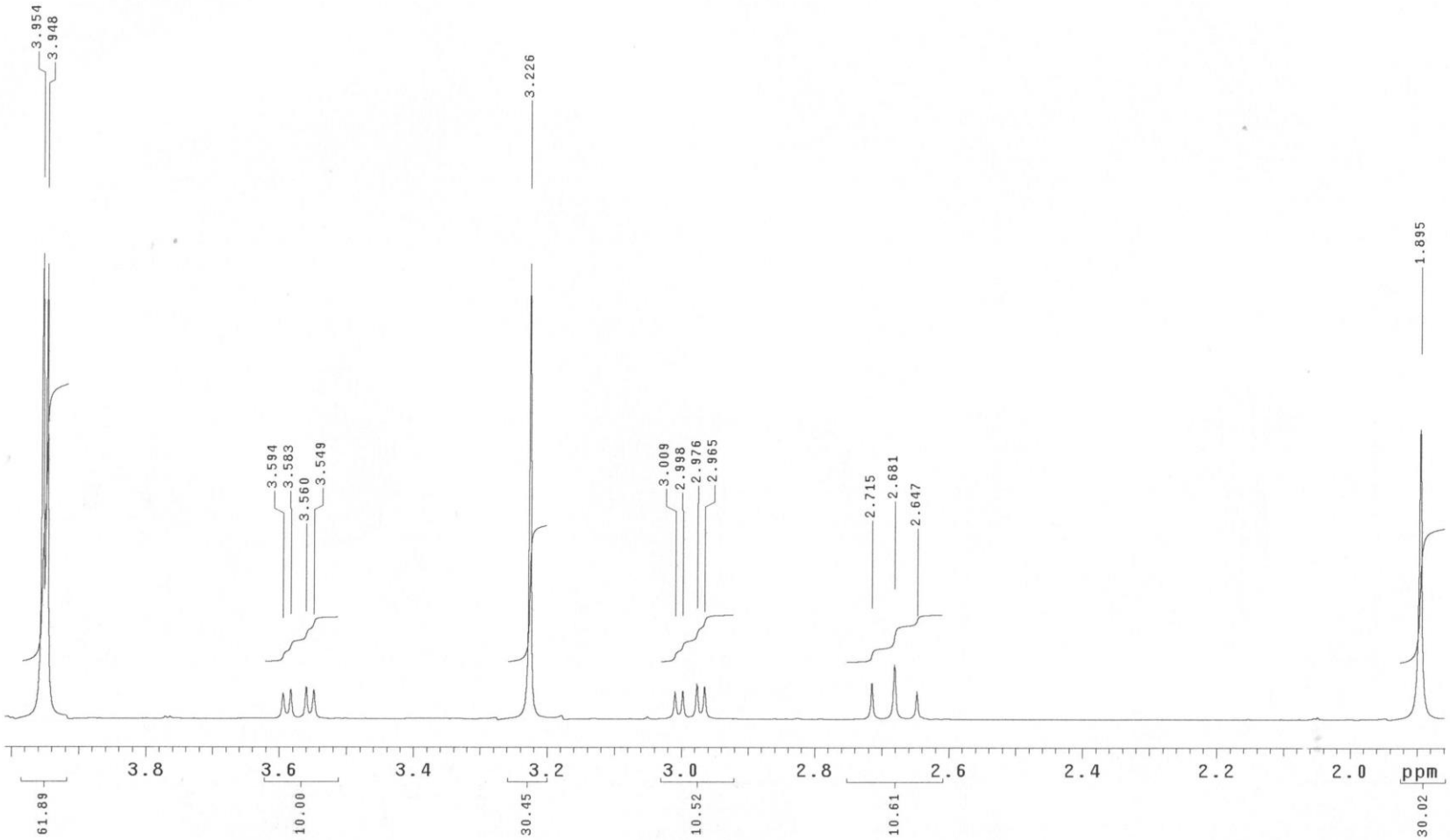


Compound 6c (^{1}H-NMR spectral data-2)



Compound 6c

^{1}H NMR (400 MHz, $CDCl_3$) spectra

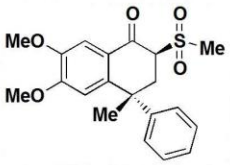


Compound 6c (^{13}C-NMR spectral data)

KSMSDBF

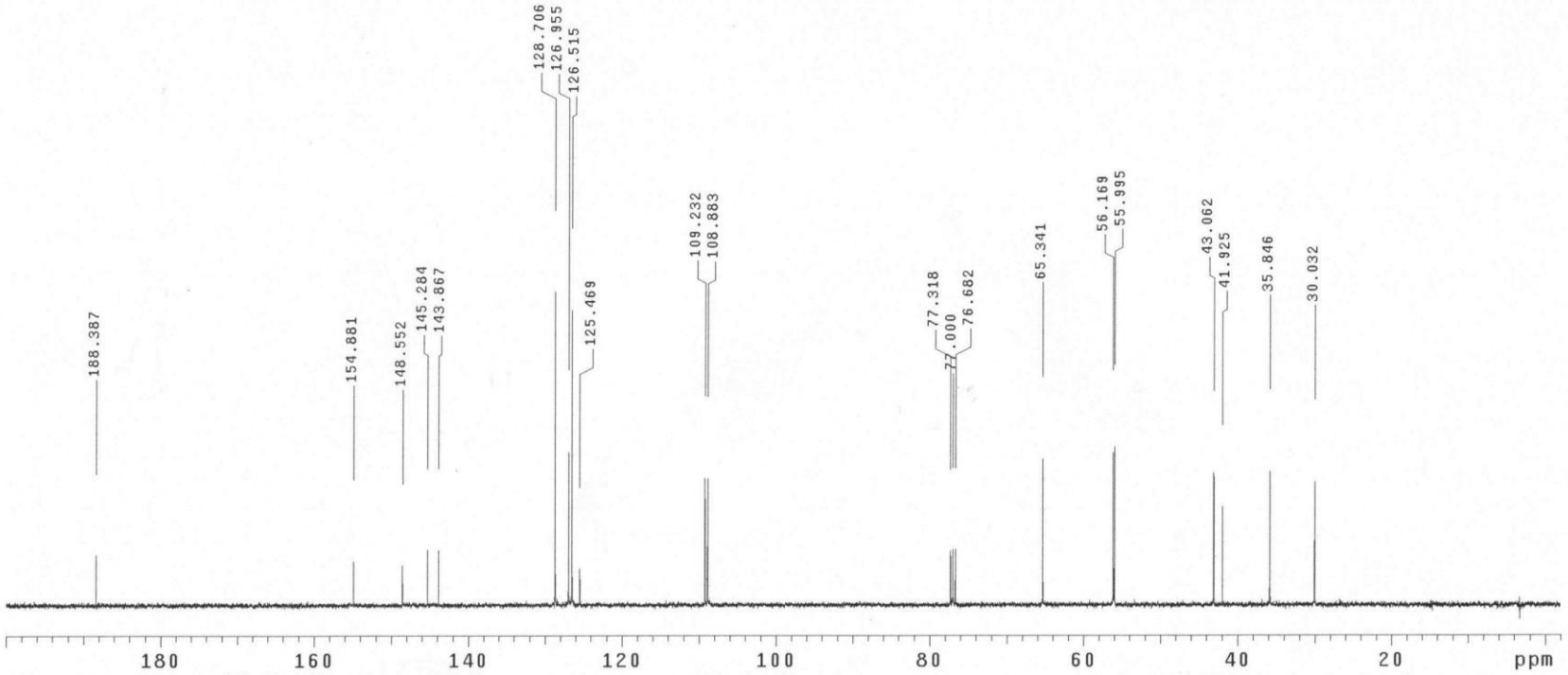
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Mar 22 2019
Solvent: CDCl3
Ambient temperature
Total 432 repetitions



Compound 6c

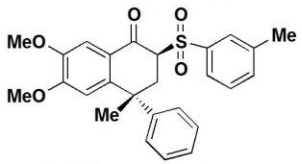
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 6d (^{1}H-NMR spectral data-1)

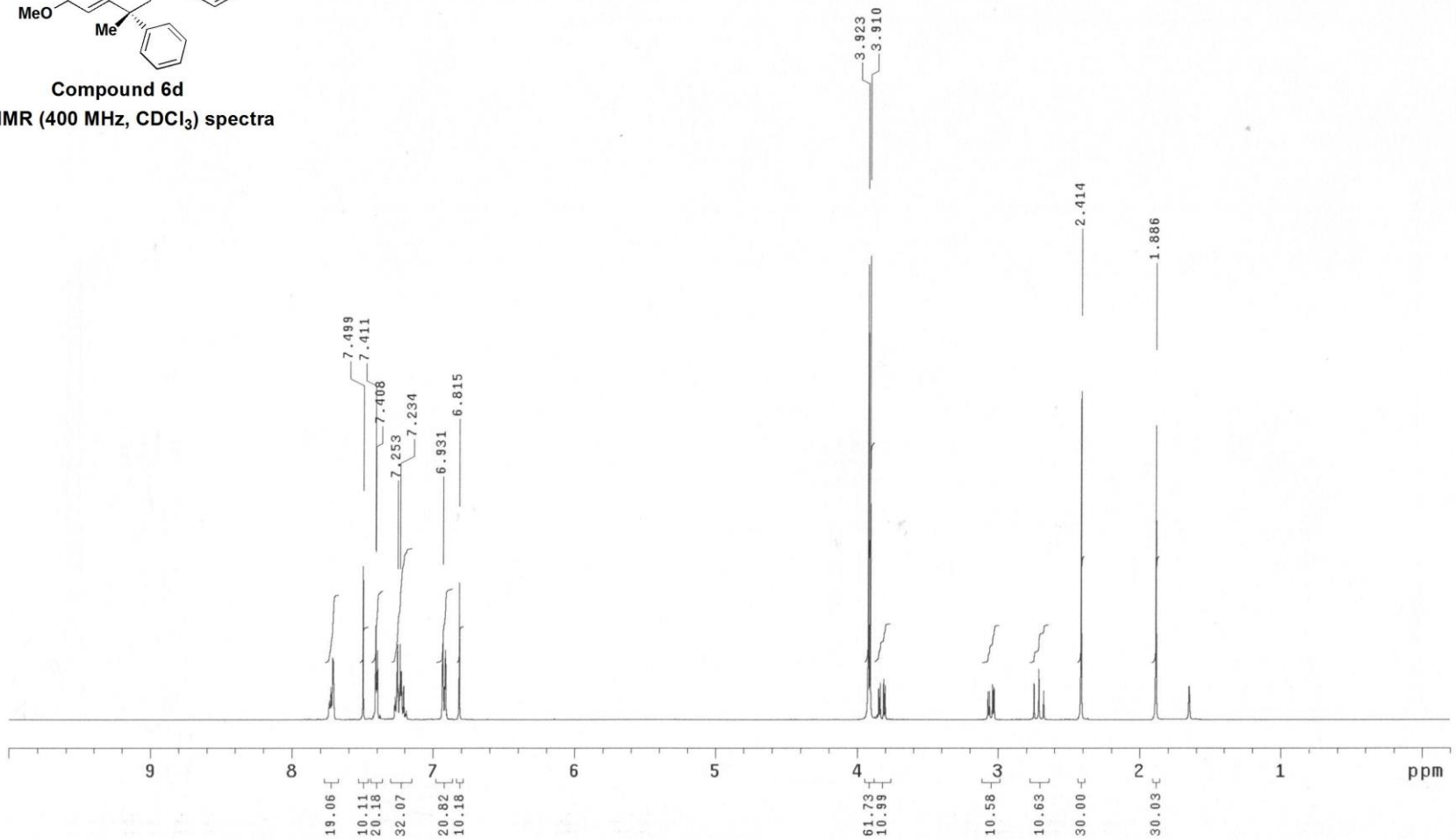
KSmMeDBF

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Mar 18 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions

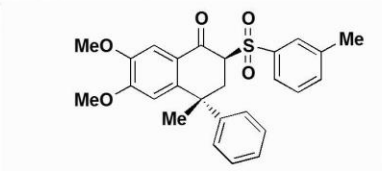


Compound 6d

^{1}H NMR (400 MHz, $CDCl_3$) spectra

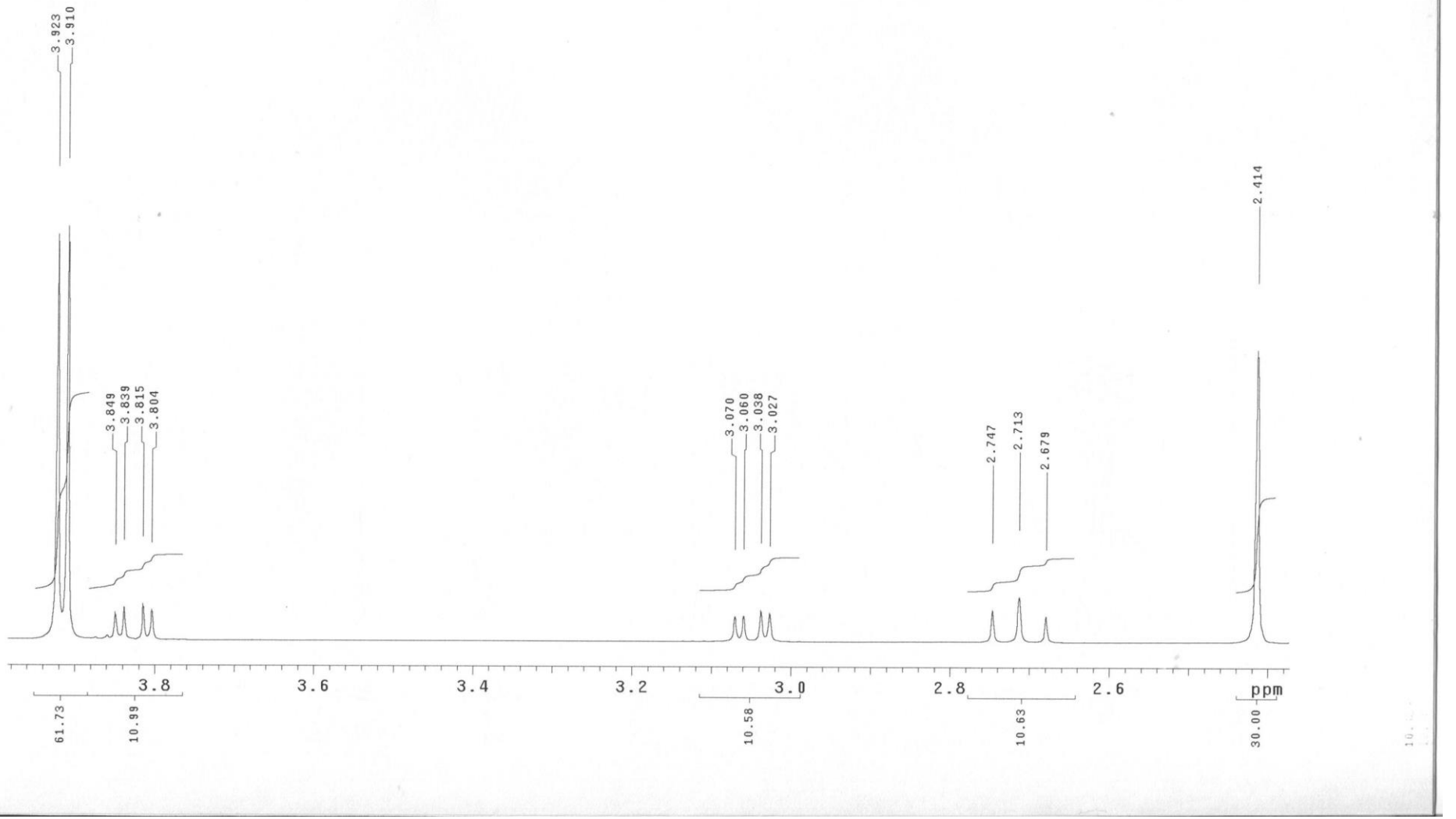


Compound 6d (^{1}H-NMR spectral data-2)



Compound 6d

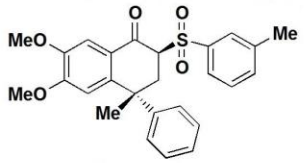
^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 6d (^{13}C-NMR spectral data)

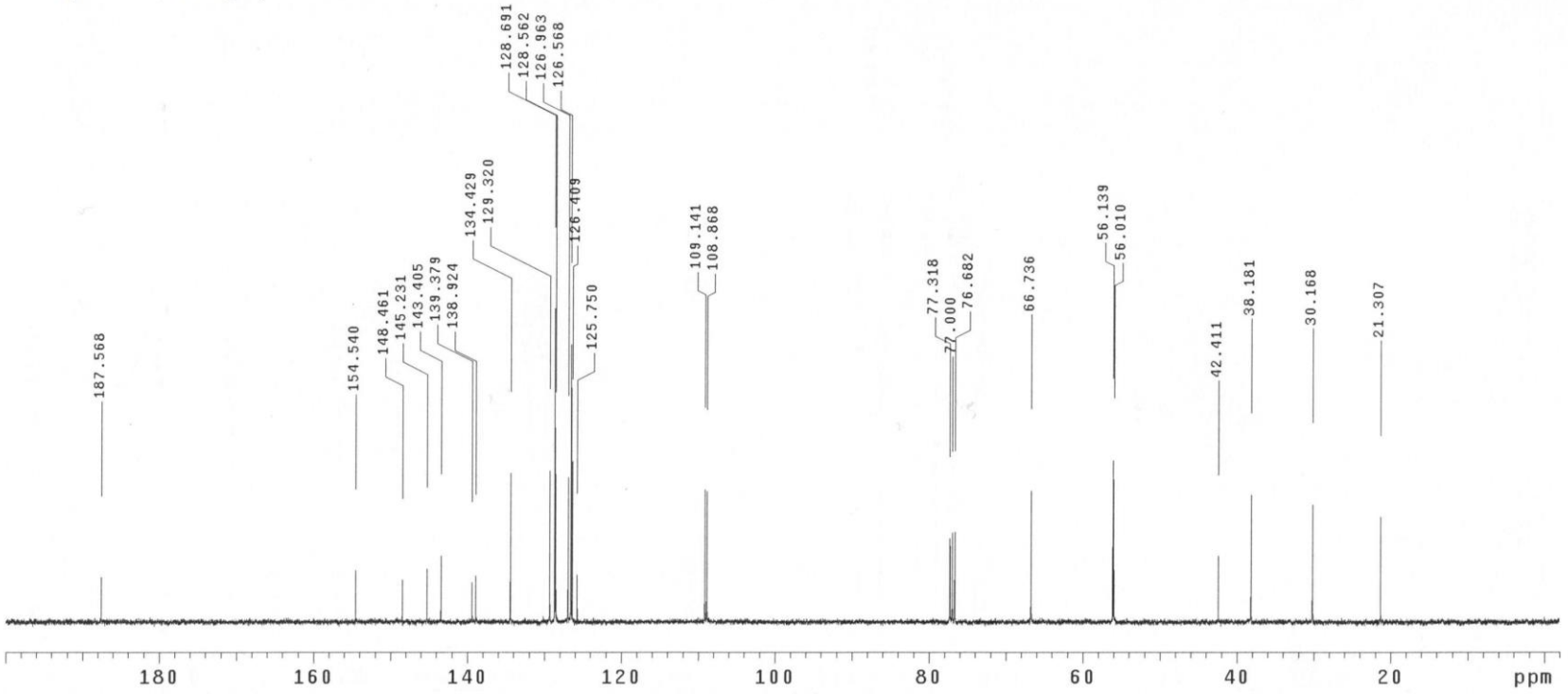
KSmMeDBF

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Mar 18 2019
Solvent: CDCl3
Ambient temperature
Total 1024 repetitions

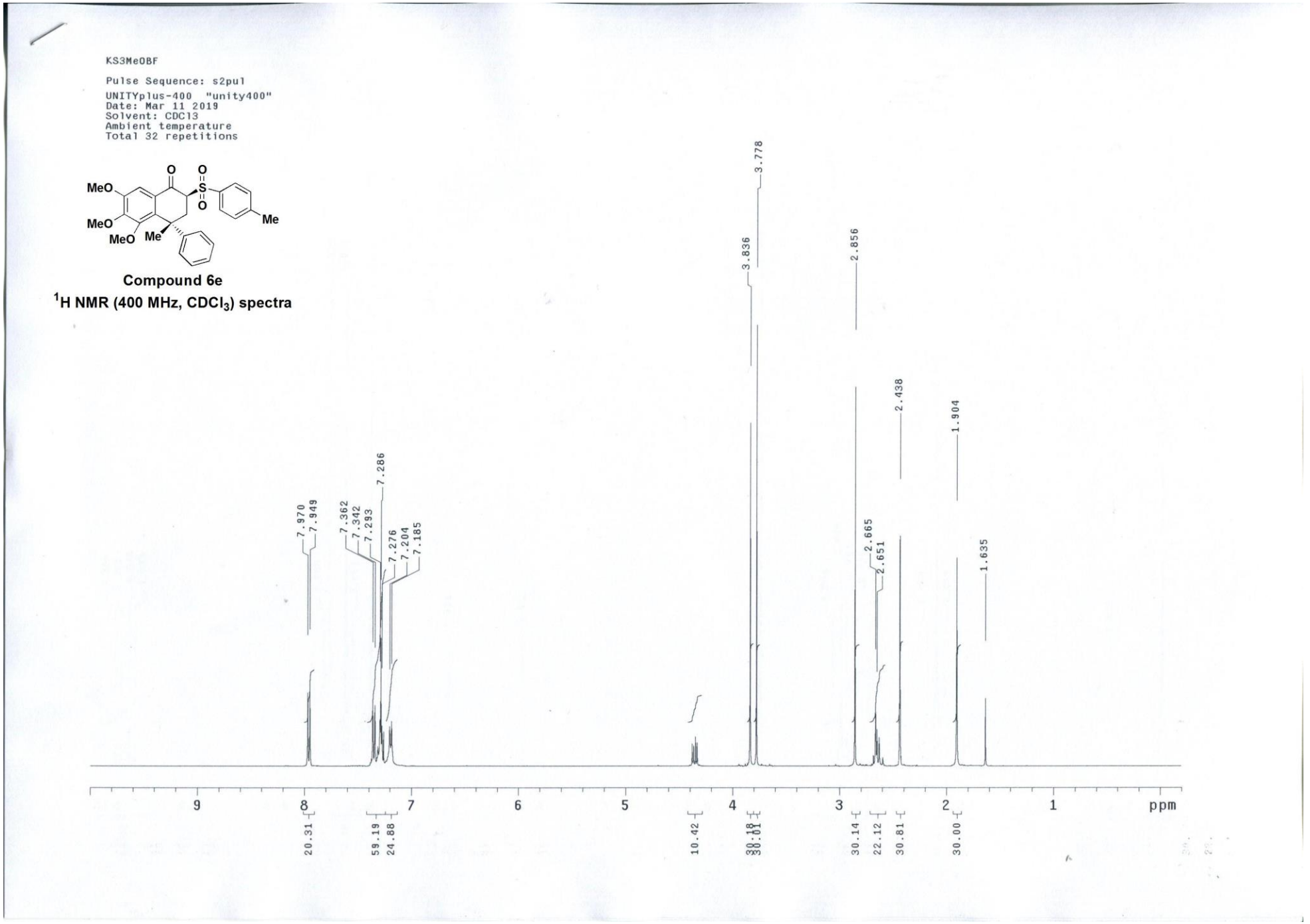


Compound 6d

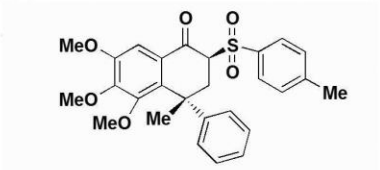
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 6e (^{1}H-NMR spectral data-1)

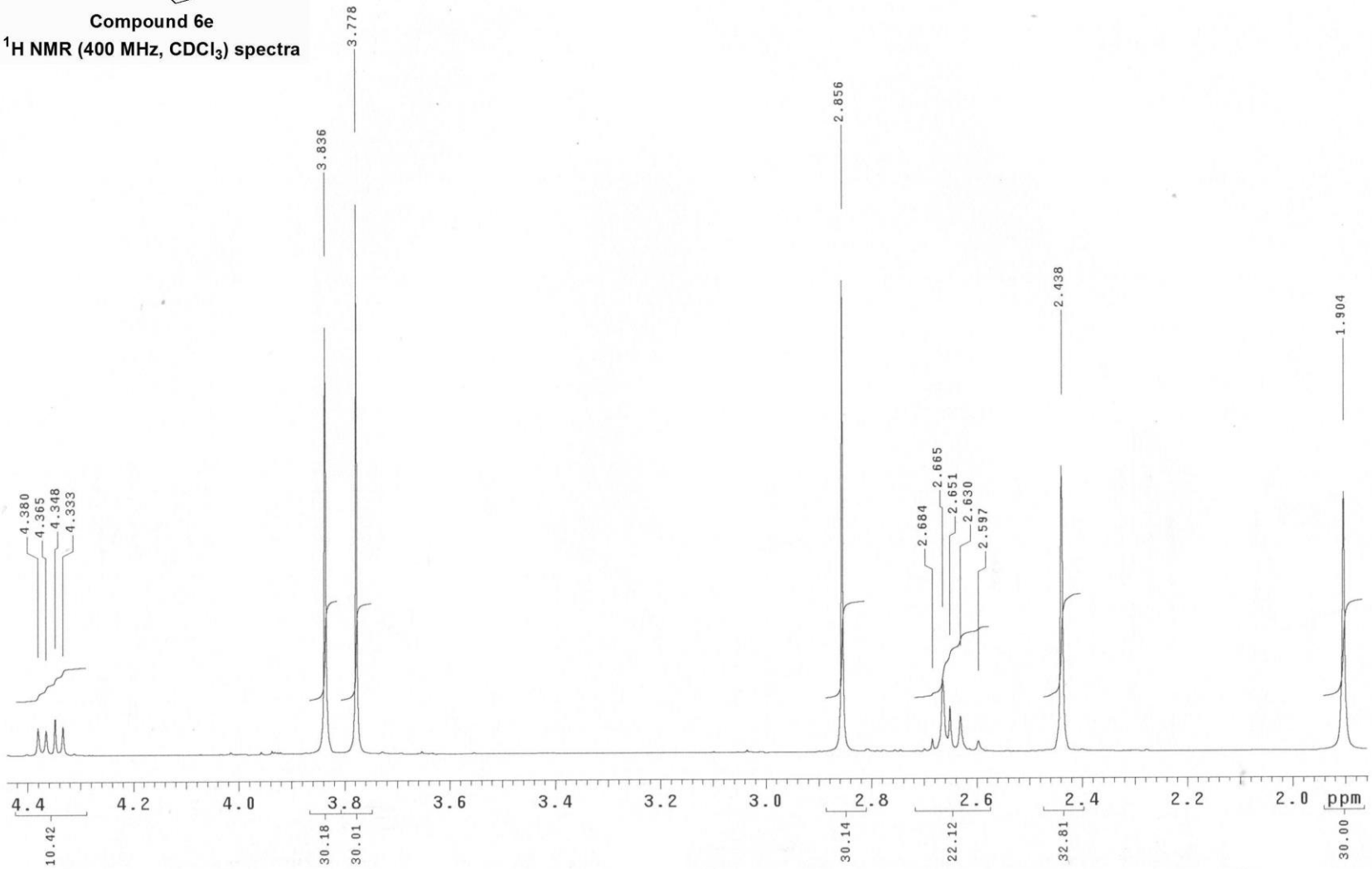


Compound 6e (^{1}H-NMR spectral data-2)



Compound 6e

^{1}H NMR (400 MHz, $CDCl_3$) spectra

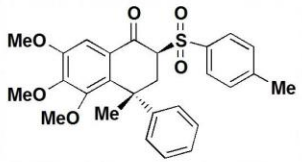


Compound 6e (^{13}C-NMR spectral data)

KS3MeOBF

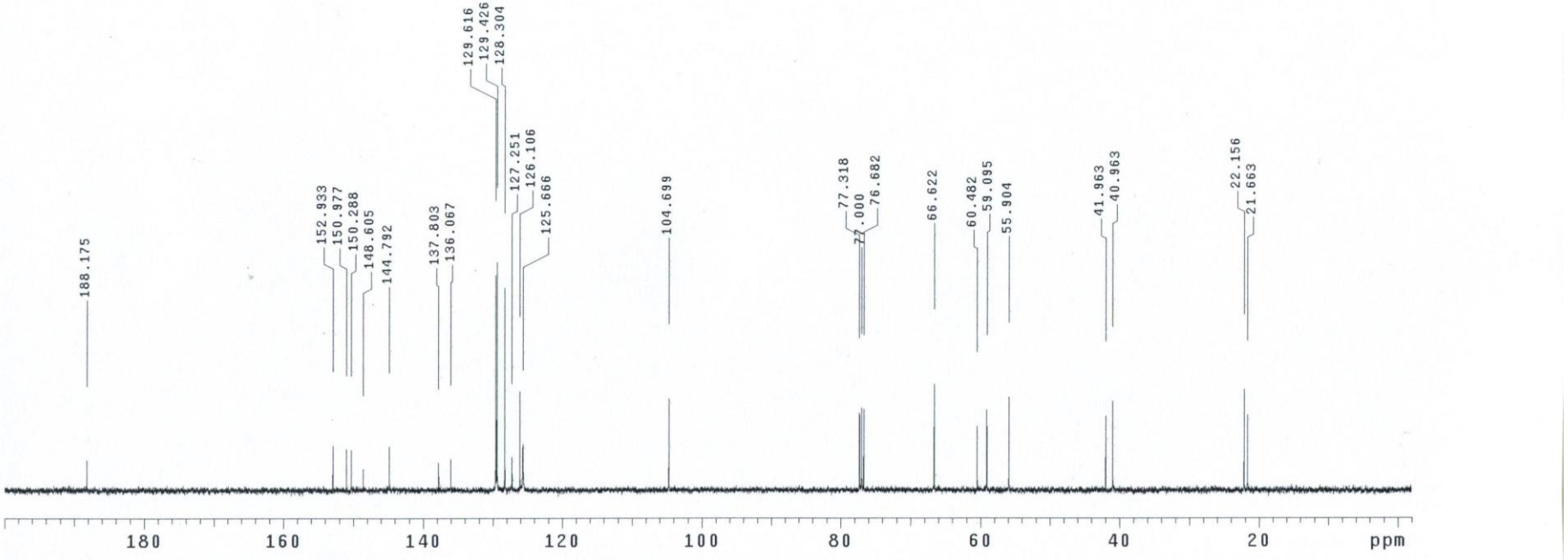
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Mar 11 2019
Solvent: CDCl3
Ambient temperature
Total 640 repetitions



Compound 6e

^{13}C NMR (100 MHz, $CDCl_3$) spectra

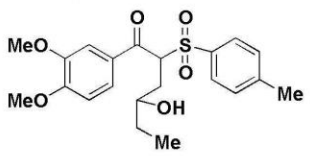


Compound 7a (^{1}H-NMR spectral data-1)

KSTSCrBF

Pulse Sequence: s2pul

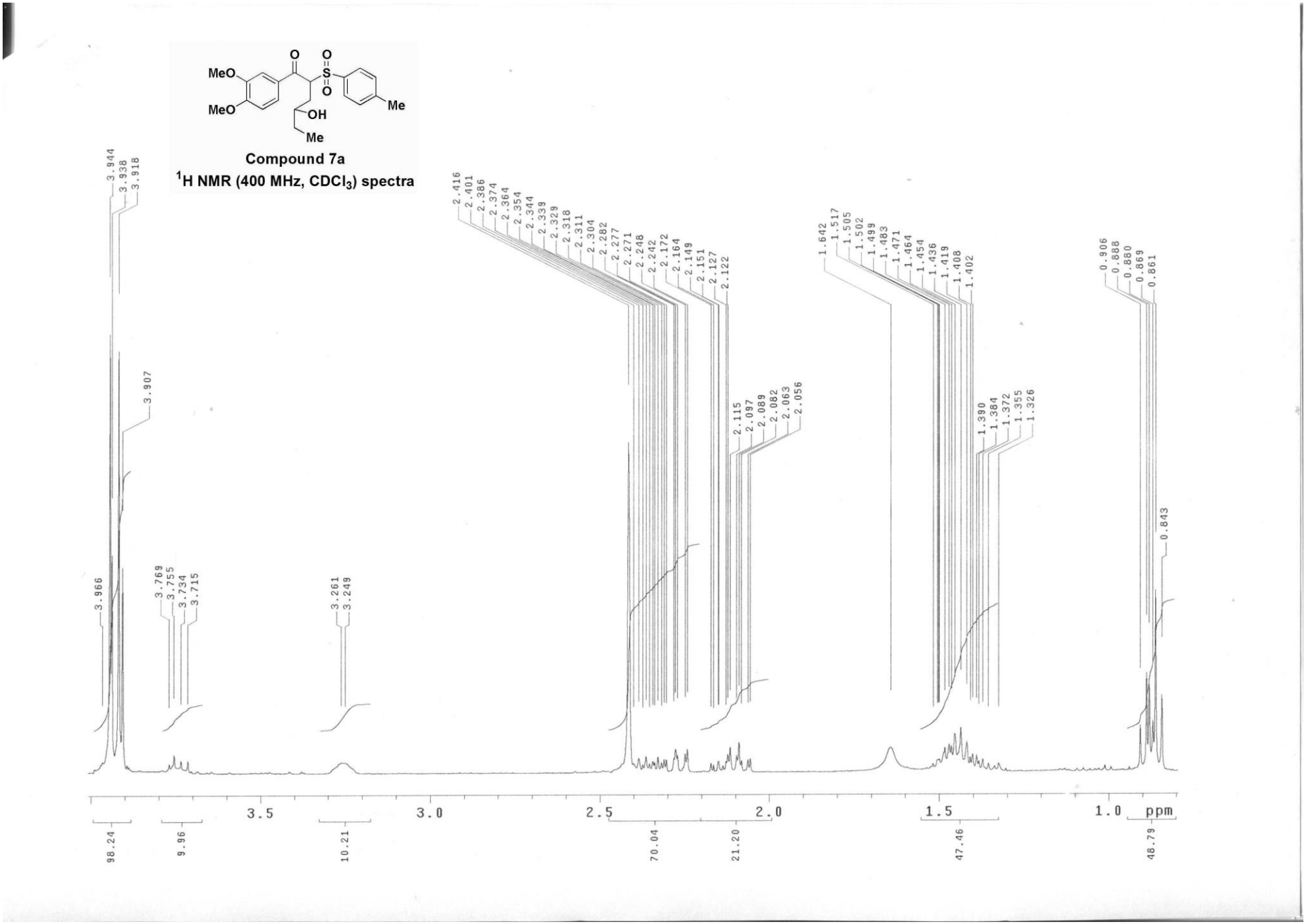
UNITYplus-400 "unity400"
Date: Jan 17 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



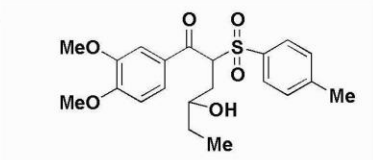
Compound 7a

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 7a (^{1}H-NMR spectral data-2)

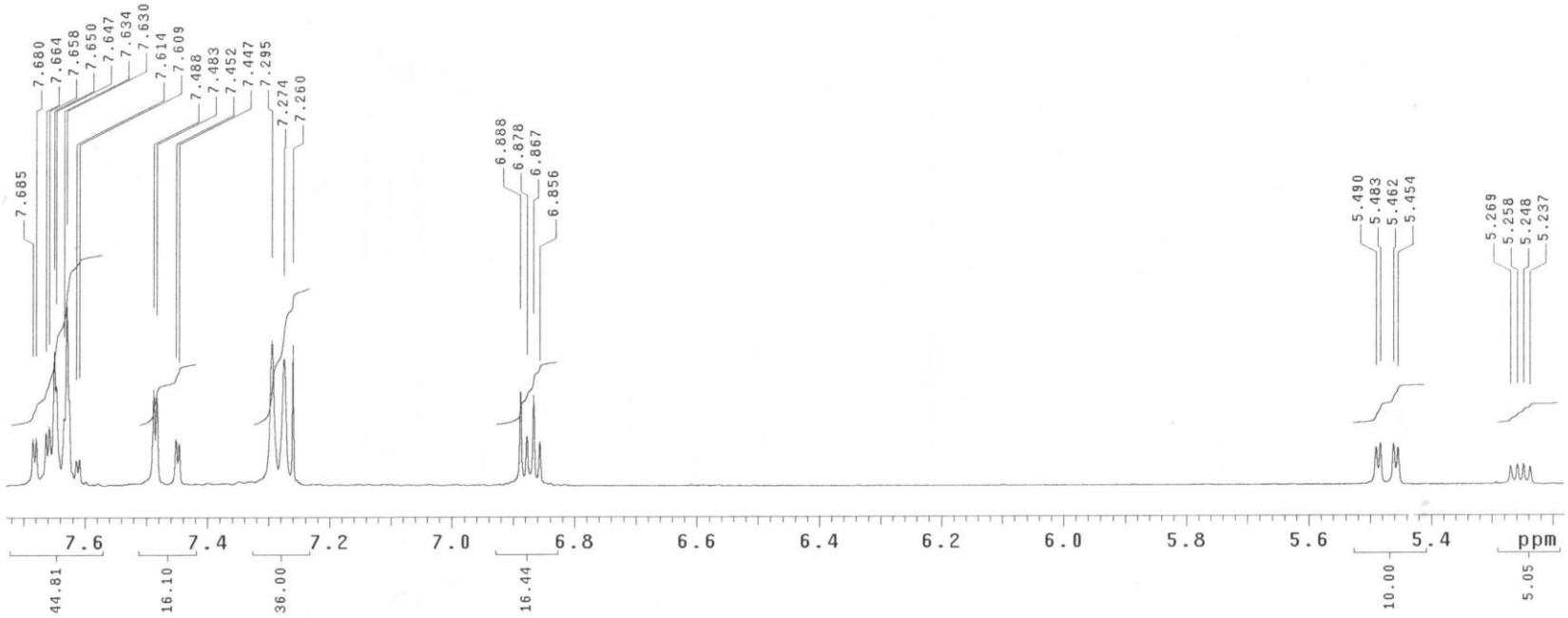


Compound 7a (^{1}H-NMR spectral data-3)



Compound 7a

^{1}H NMR (400 MHz, $CDCl_3$) spectra

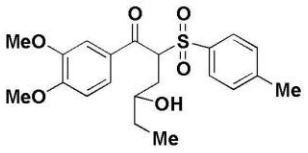


Compound 7a (^{13}C-NMR spectral data)

KSTSCrBF

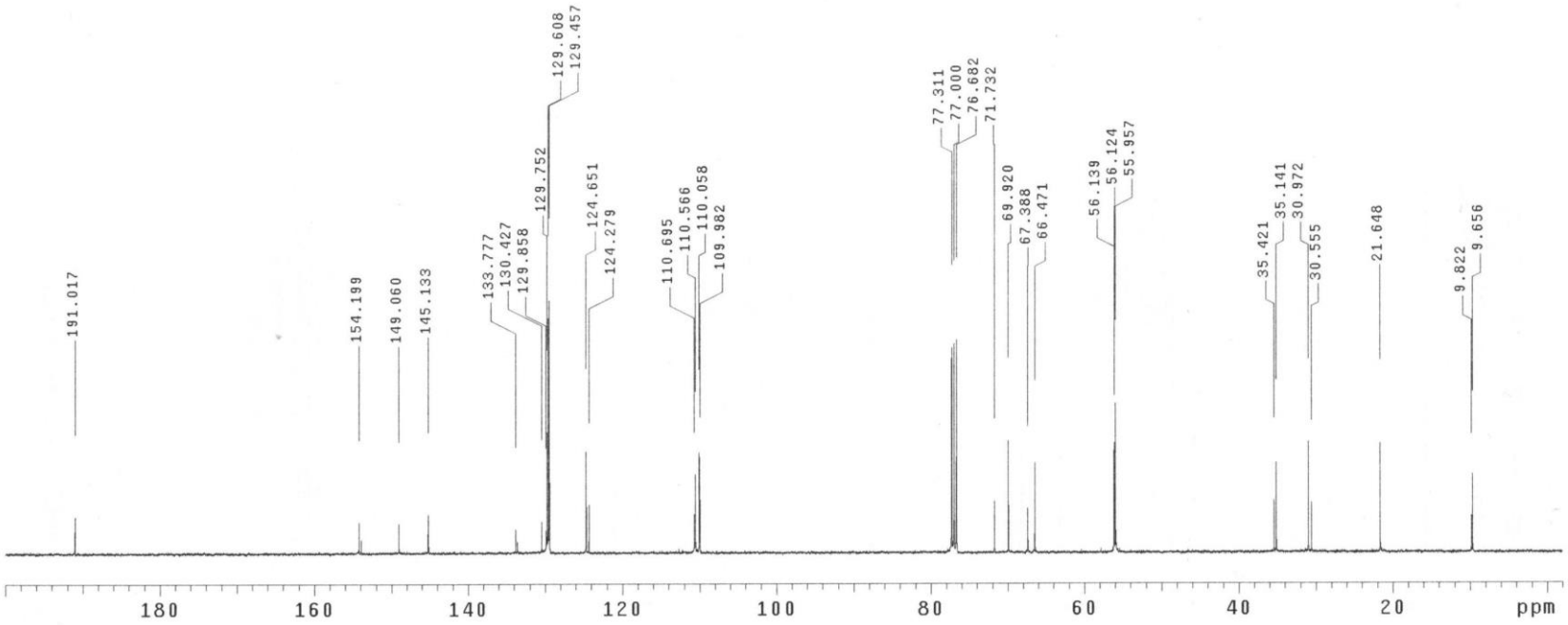
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 17 2019
Solvent: CDCl3
Ambient temperature
Total 32000 repetitions

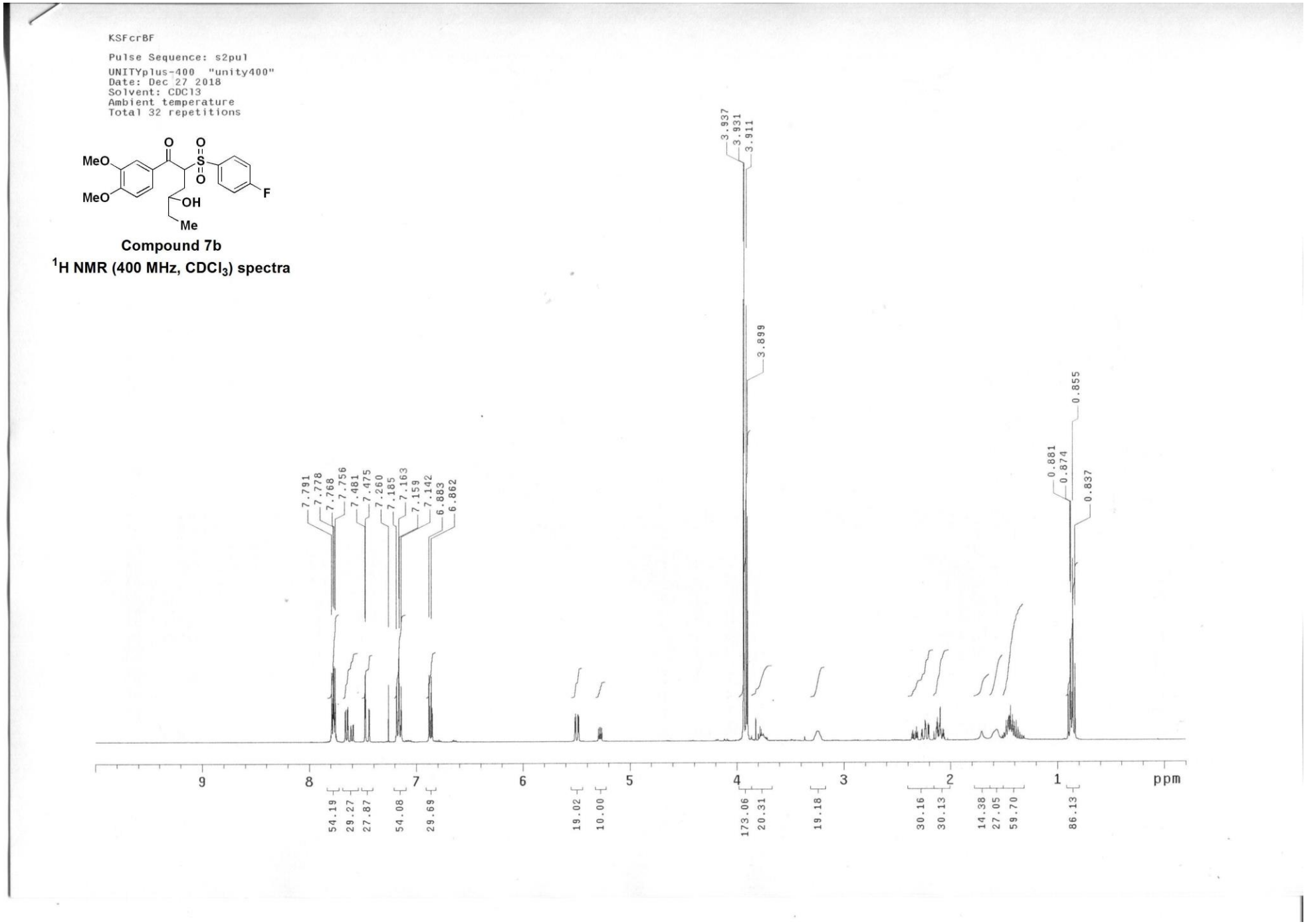


Compound 7a

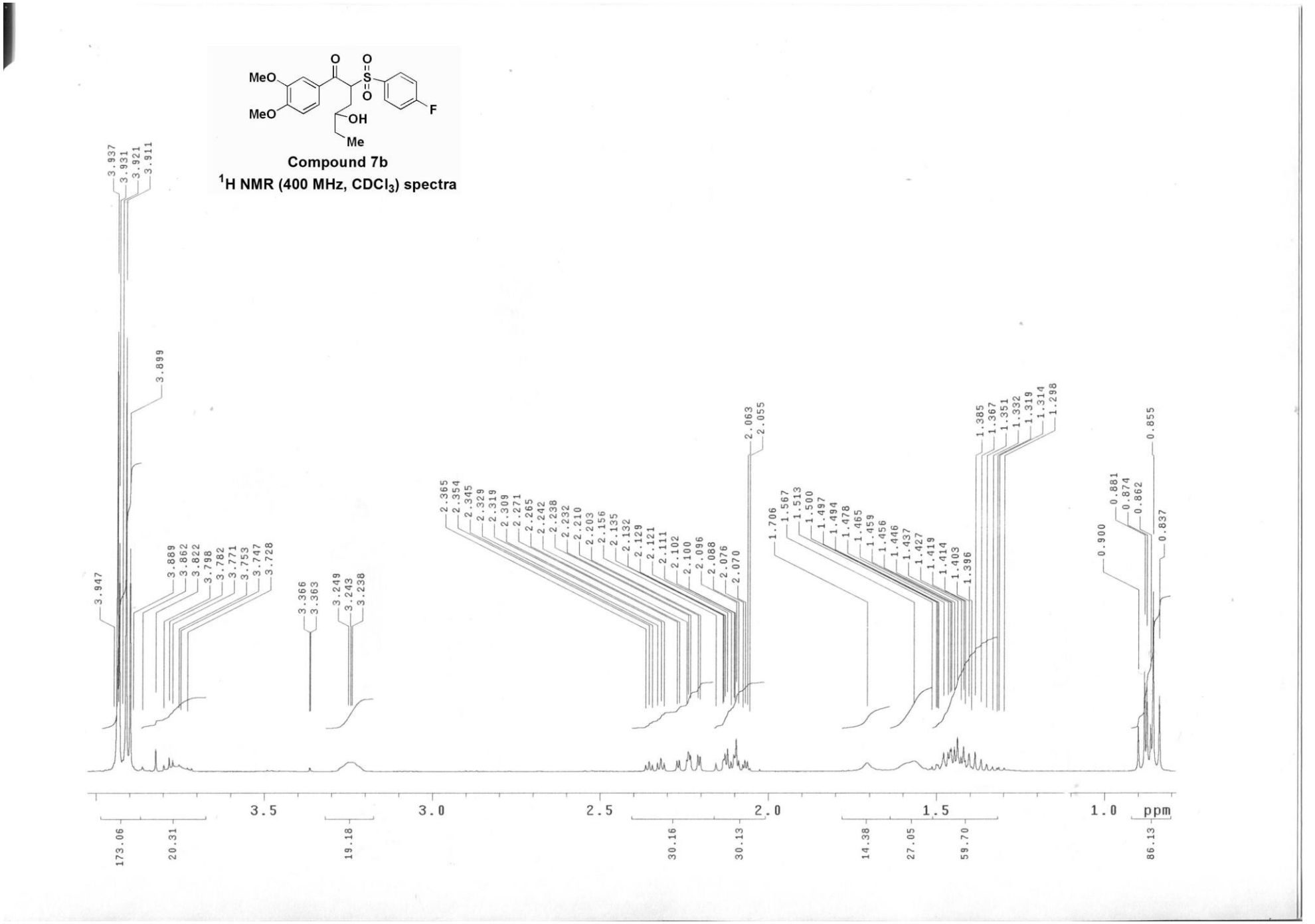
^{13}C NMR (100 MHz, $CDCl_3$) spectra



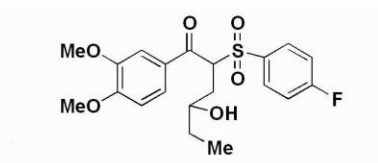
Compound 7b (^{1}H-NMR spectral data-1)



Compound 7b (^{1}H-NMR spectral data-2)

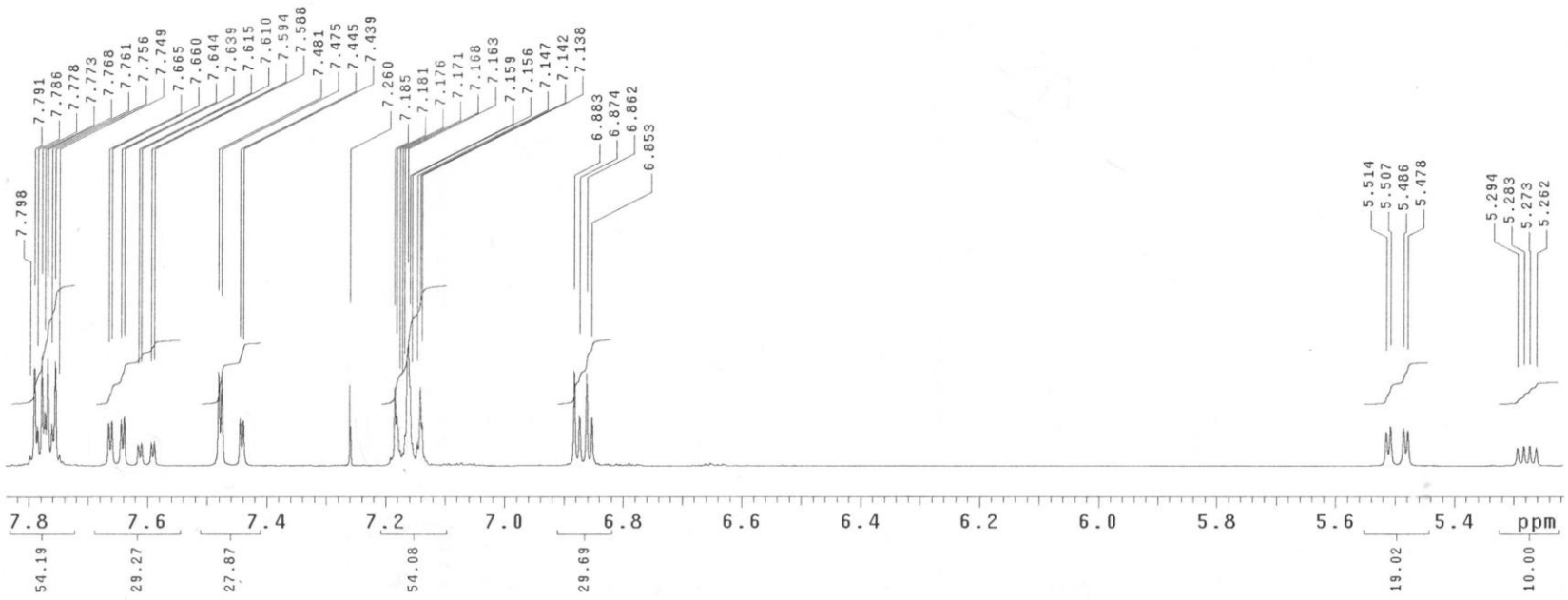


Compound 7b (^{1}H-NMR spectral data-3)



Compound 7b

^{1}H NMR (400 MHz, $CDCl_3$) spectra

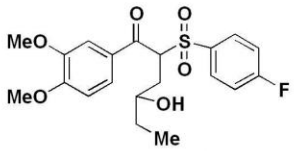


Compound 7b (^{13}C-NMR spectral data)

KSFcrBF

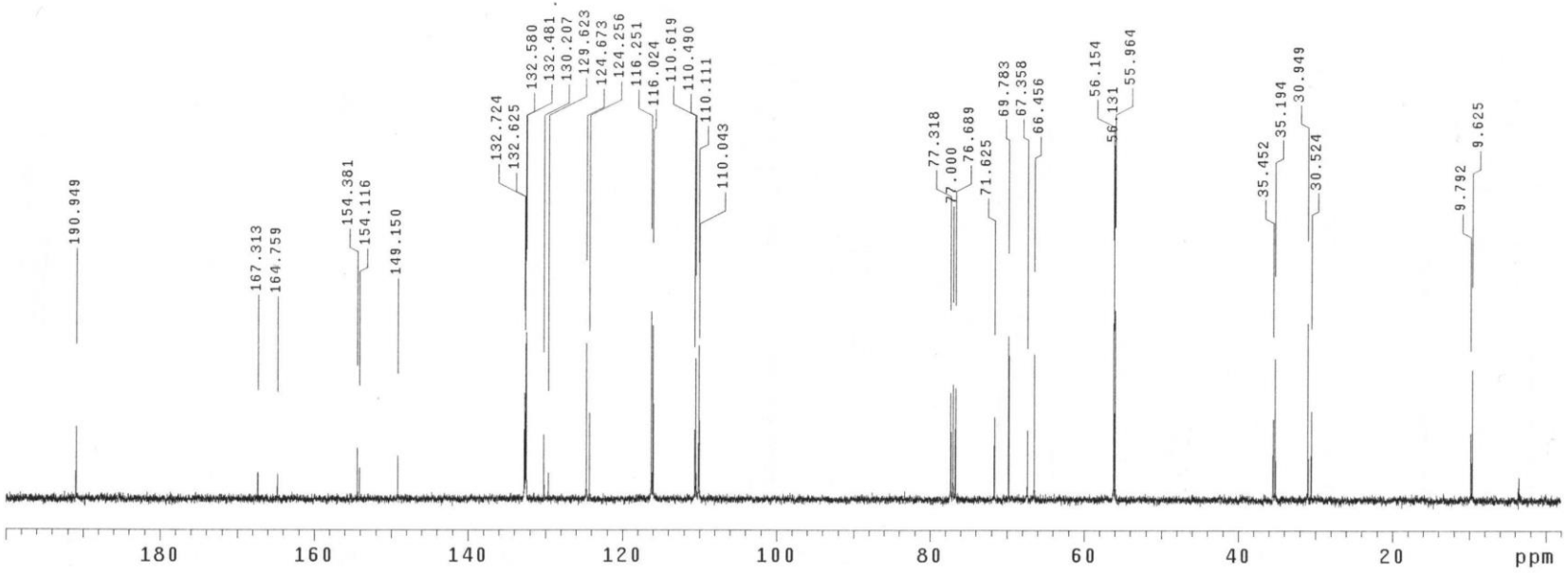
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Dec 27 2018
Solvent: CDCl3
Ambient temperature
Total 1024 repetitions



Compound 7b

^{13}C NMR (100 MHz, $CDCl_3$) spectra

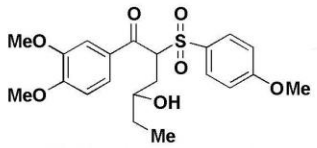


Compound 7c (^{1}H-NMR spectral data-1)

KSOMeCrBF

Pulse Sequence: s2pul

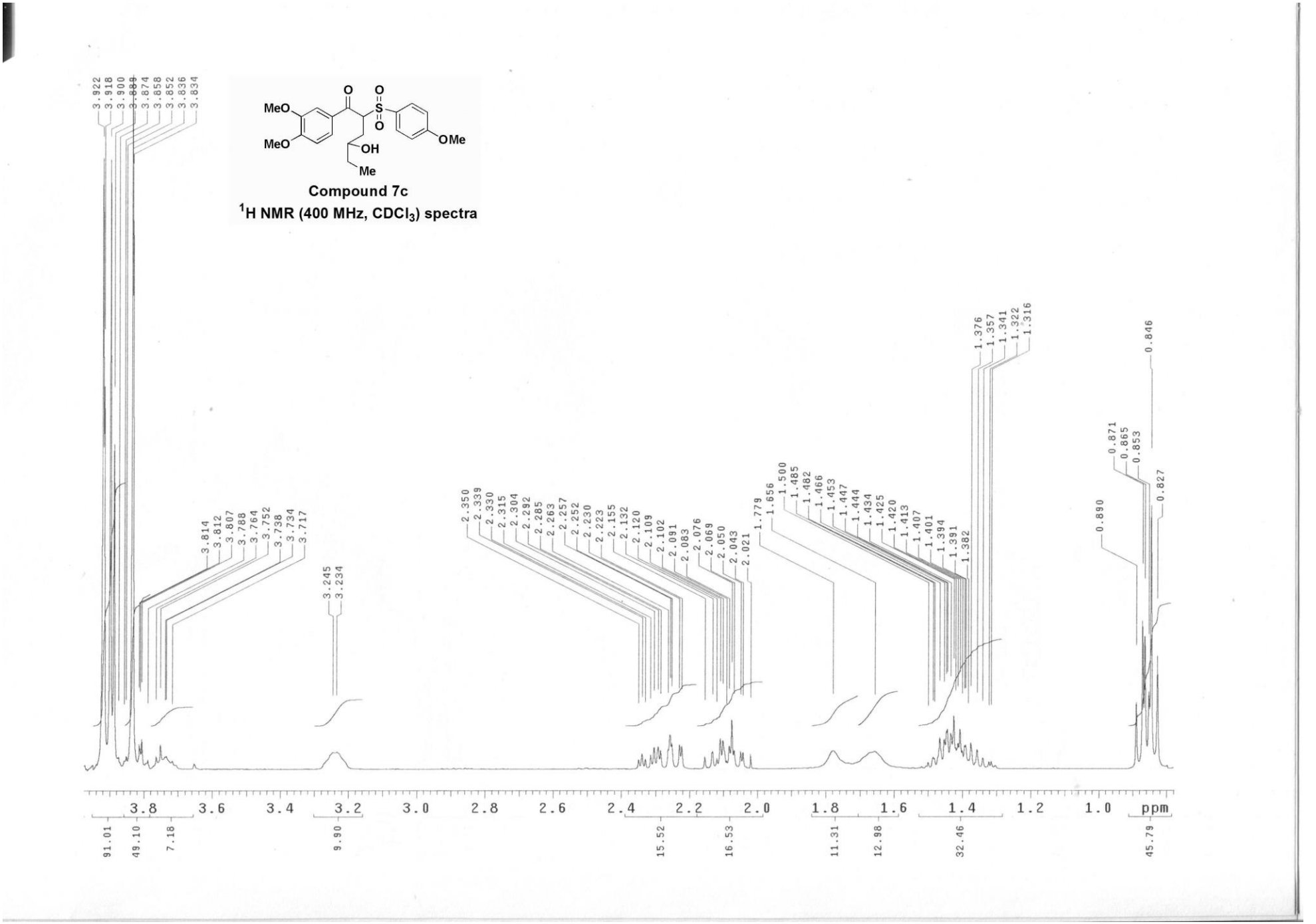
UNITYplus-400 "unity400"
Date: Jan 14 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



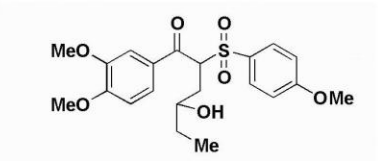
Compound 7c

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 7c (^{1}H-NMR spectral data-2)

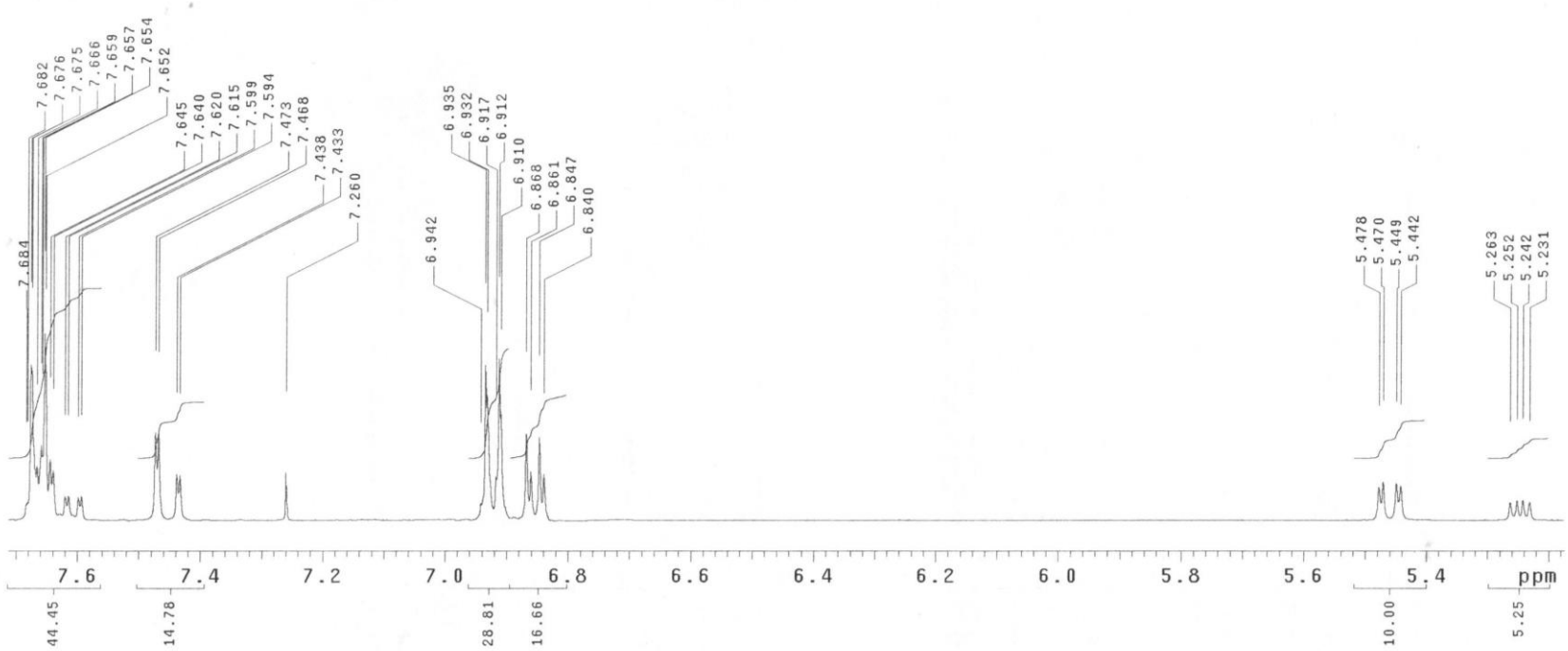


Compound 7c (^{1}H-NMR spectral data-3)



Compound 7c

^{1}H NMR (400 MHz, $CDCl_3$) spectra

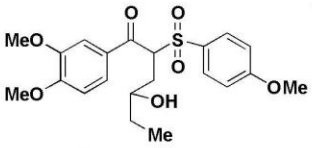


Compound 7c (^{13}C-NMR spectral data)

KSOMeCrBF

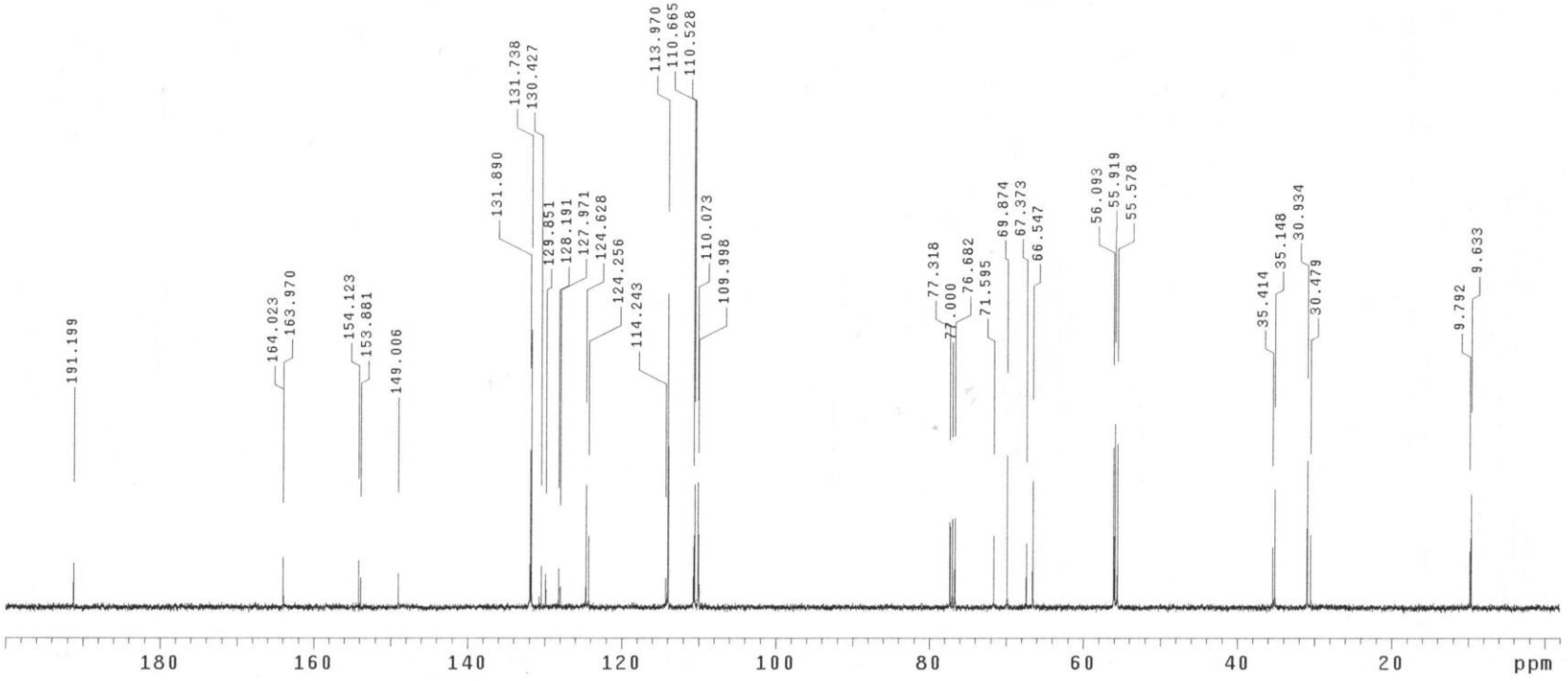
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Jan 14 2019
Solvent: CDCl3
Ambient temperature
Total 1056 repetitions



Compound 7c

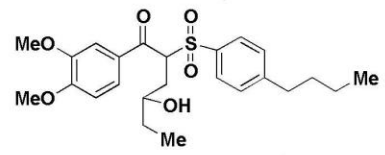
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 7d (^{1}H-NMR spectral data-1)

KSPhBuCrBF

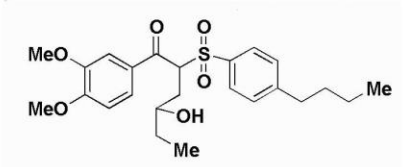
Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Jan 11 2019
Solvent: CDCl3
Ambient temperature
Total 32 repetitions



Compound 7d

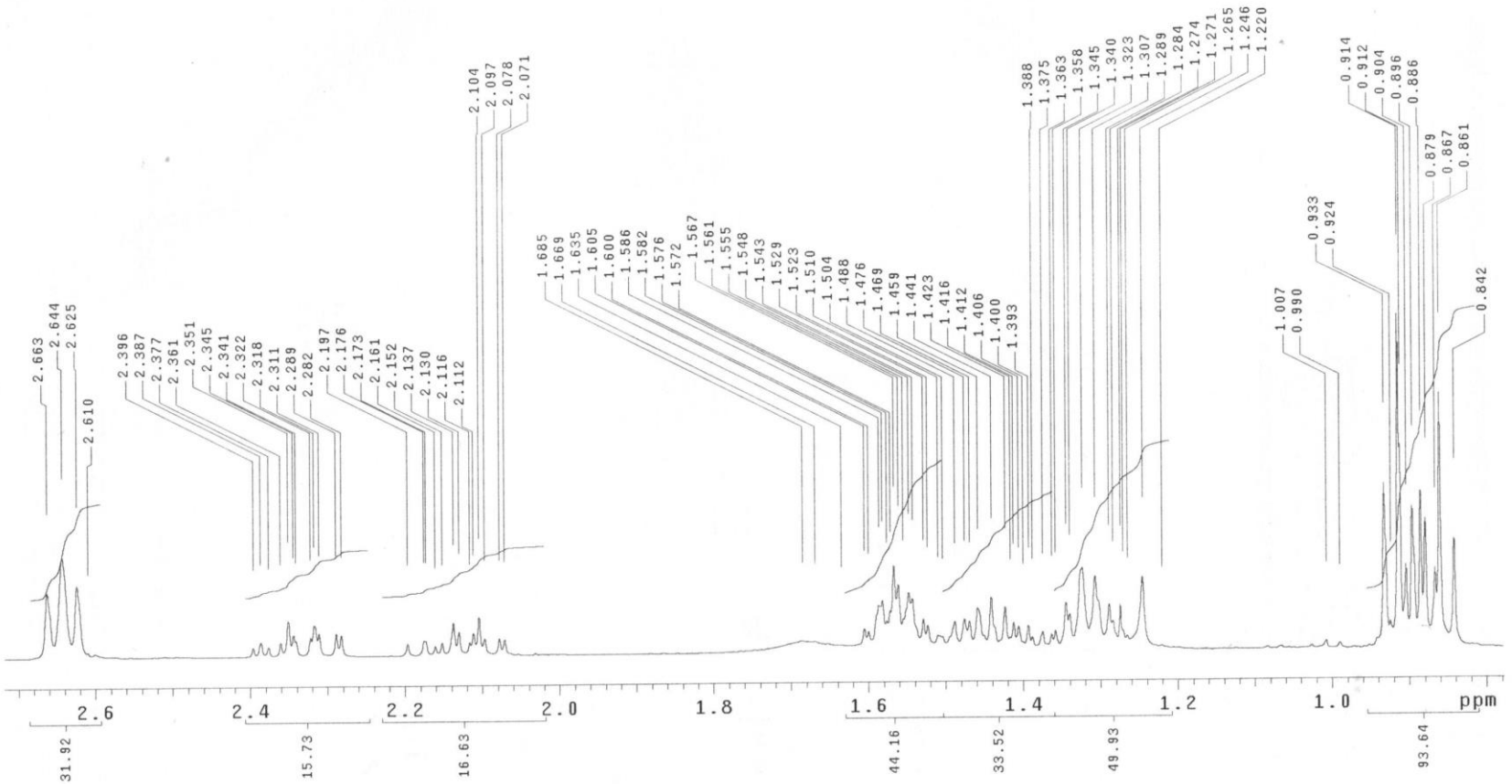
^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 7d (^{1}H-NMR spectral data-2)

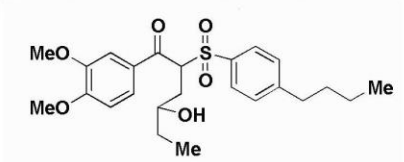


Compound 7d

^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 7d (^{1}H-NMR spectral data-3)



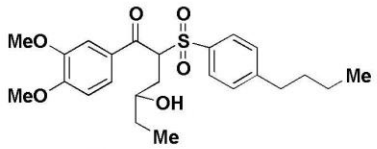
Compound 7d

^{1}H NMR (400 MHz, $CDCl_3$) spectra

Compound 7d (^{13}C-NMR spectral data)

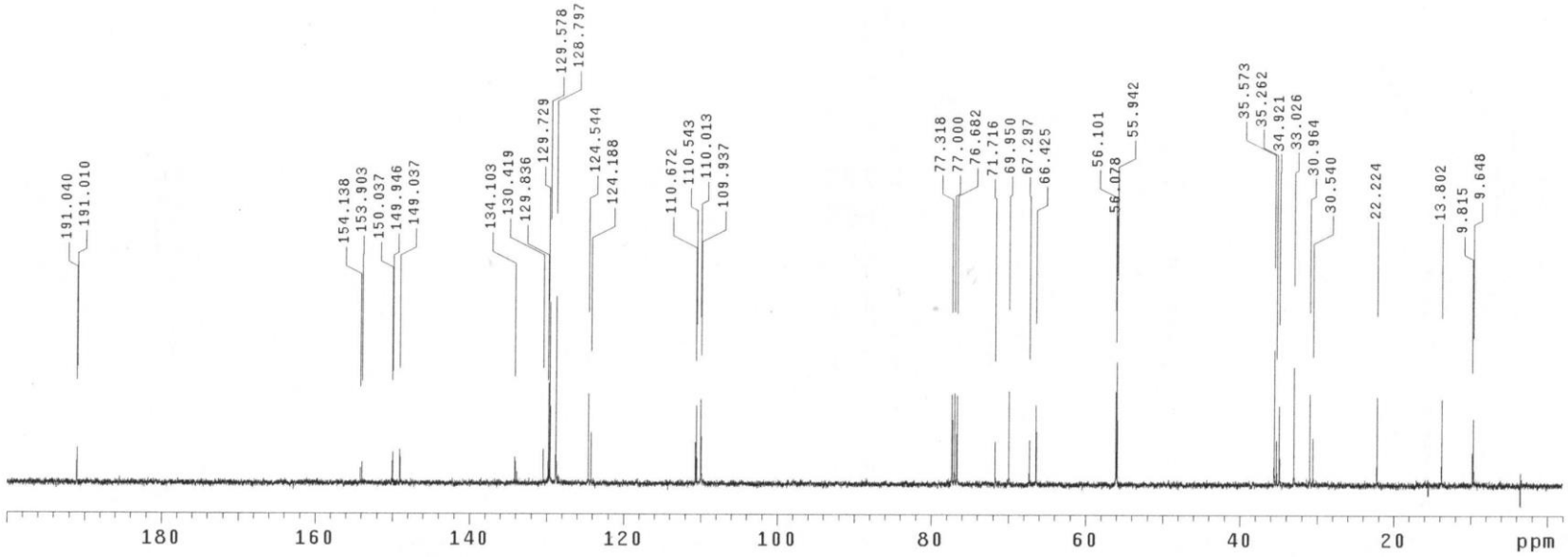
KSPhBuCrBF

Pulse Sequence: s2pul
UNITYplus-400 "unity400"
Date: Jan 11 2019
Solvent: CDCl3
Ambient temperature
Total 1280 repetitions

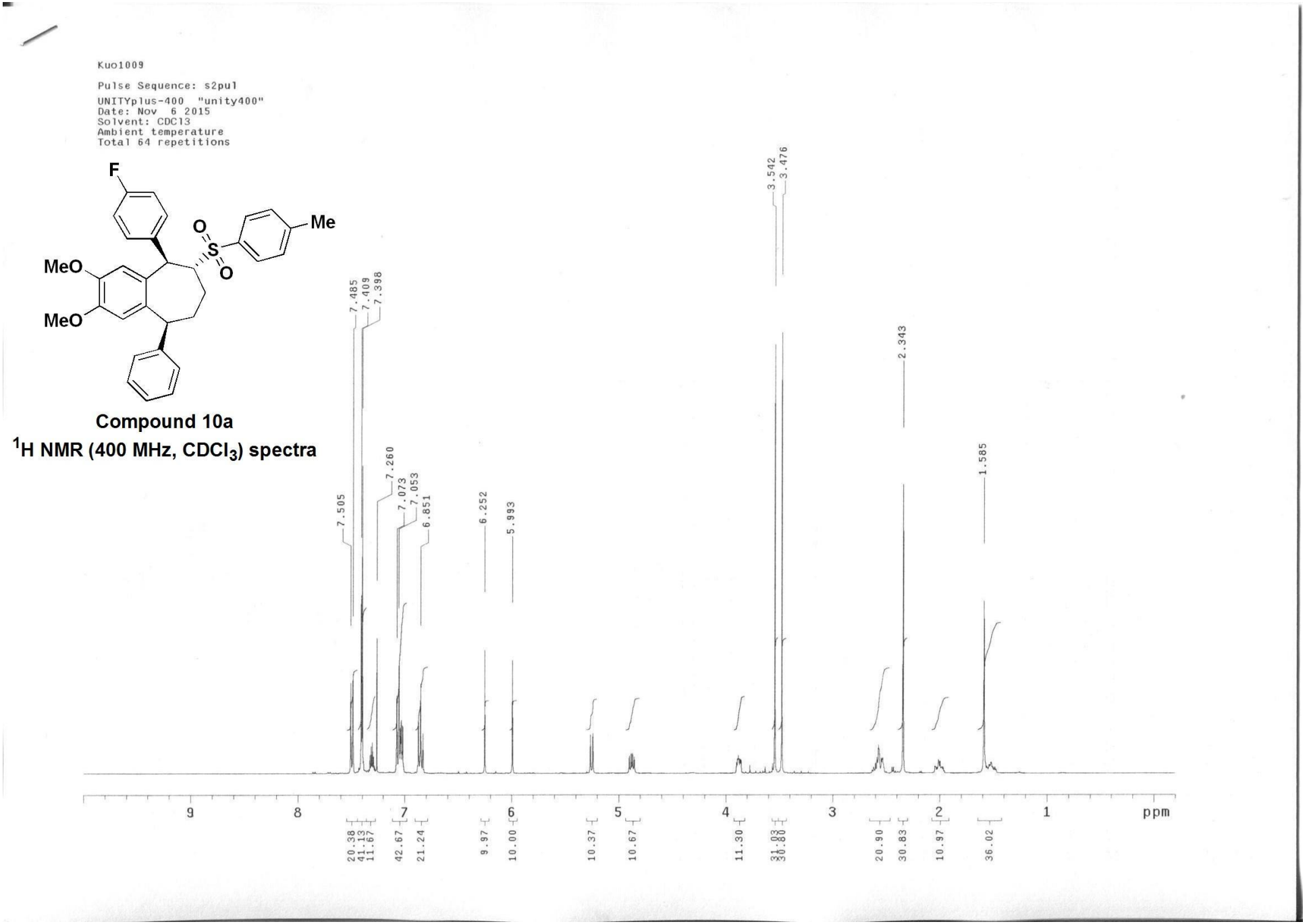


Compound 7d

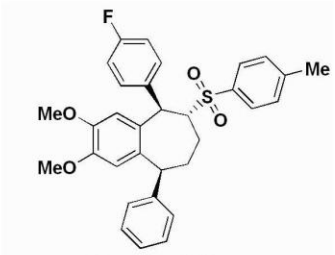
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 10a (^{1}H-NMR spectral data-1)

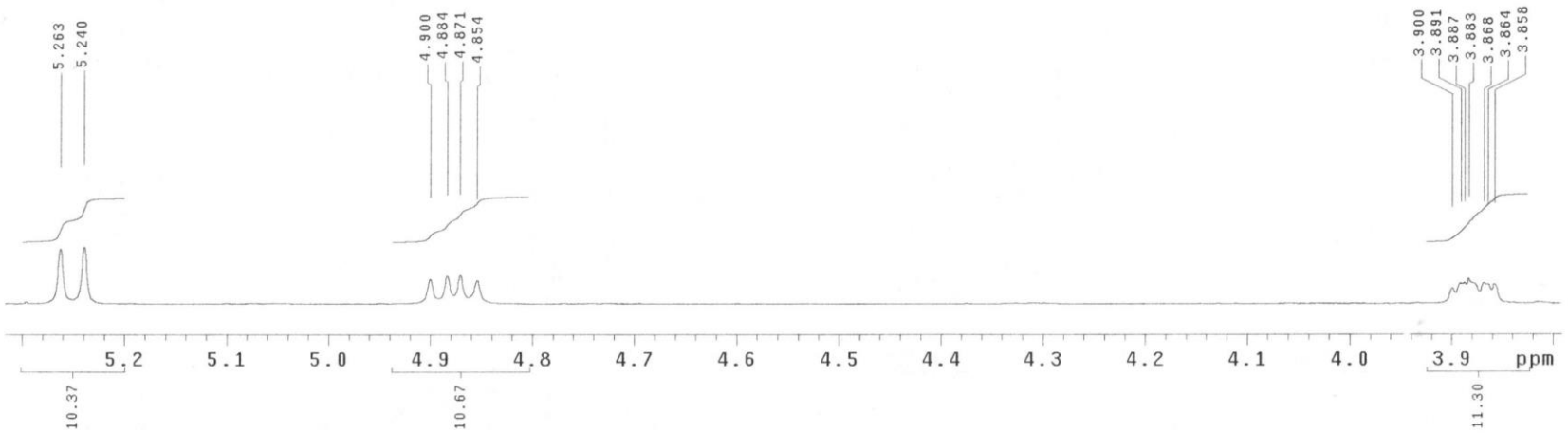


Compound 10a (^{1}H-NMR spectral data-2)

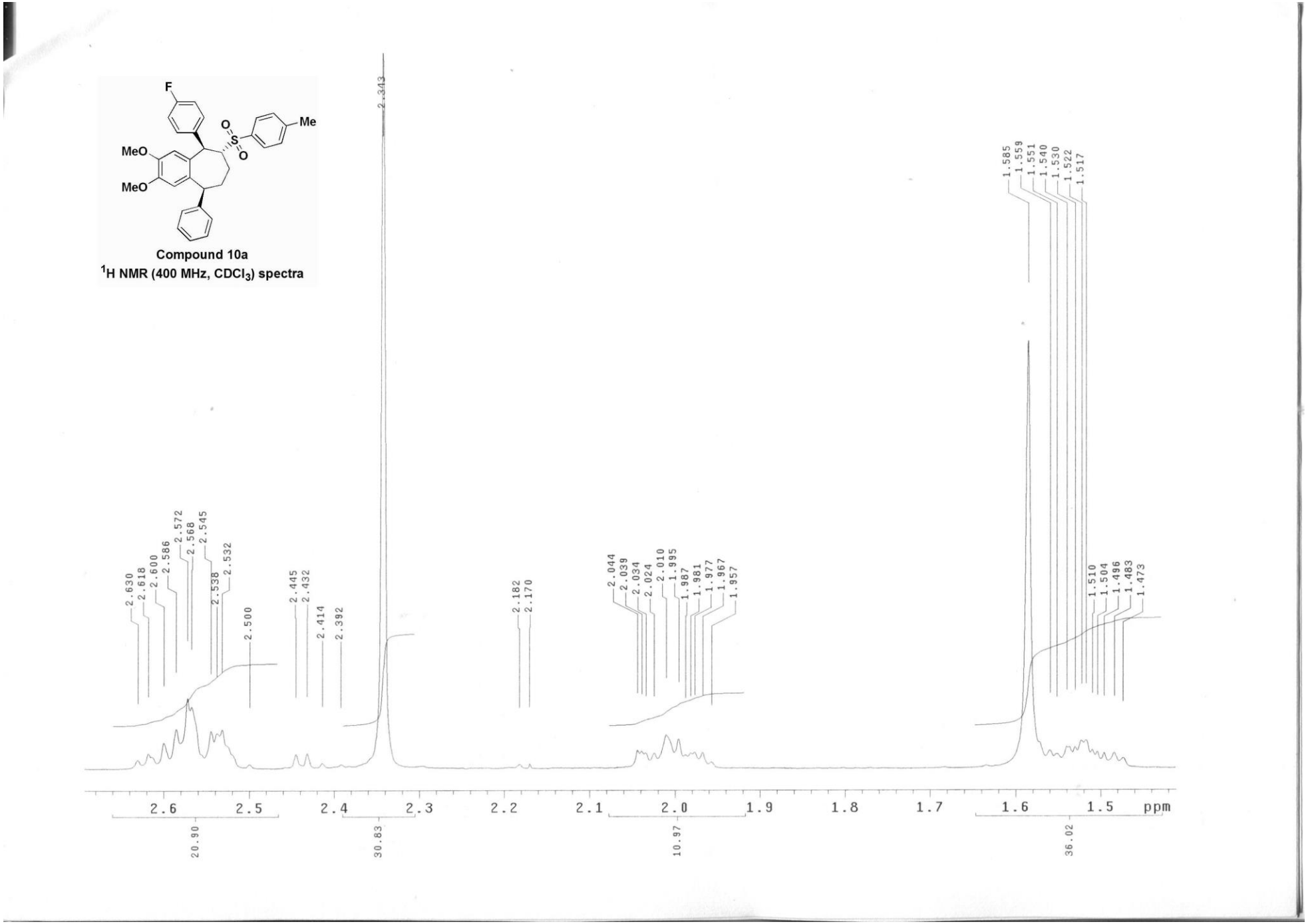


Compound 10a

^{1}H NMR (400 MHz, $CDCl_3$) spectra



Compound 10a (^{1}H-NMR spectral data-3)

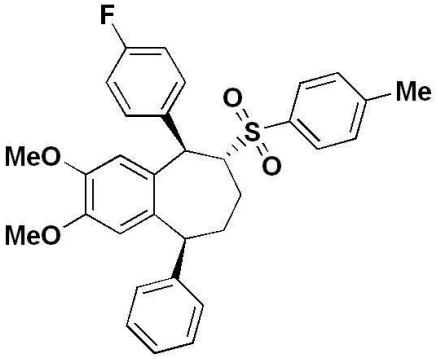


Compound 10a (^{13}C-NMR spectral data)

Kuo1009

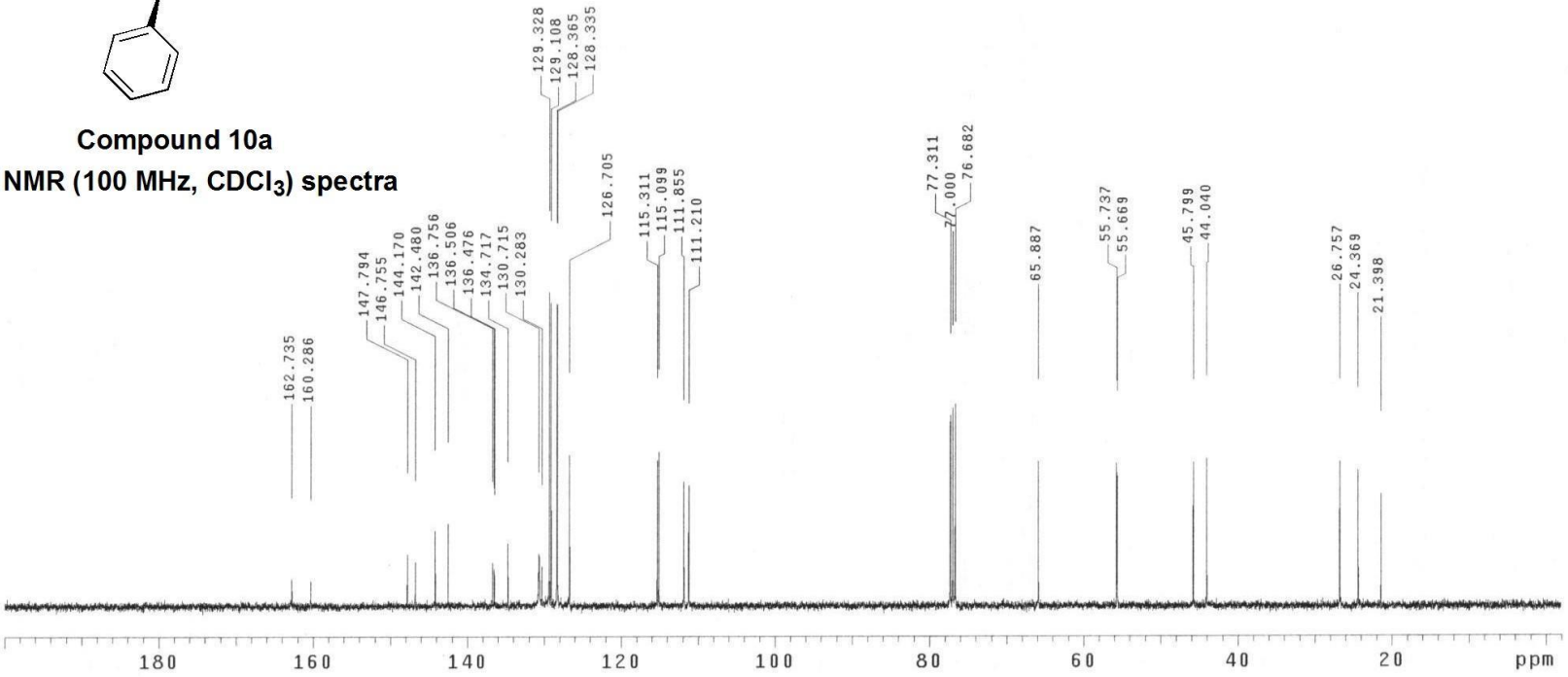
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Nov 6 2015
Solvent: CDCl3
Ambient temperature
Total 5024 repetitions

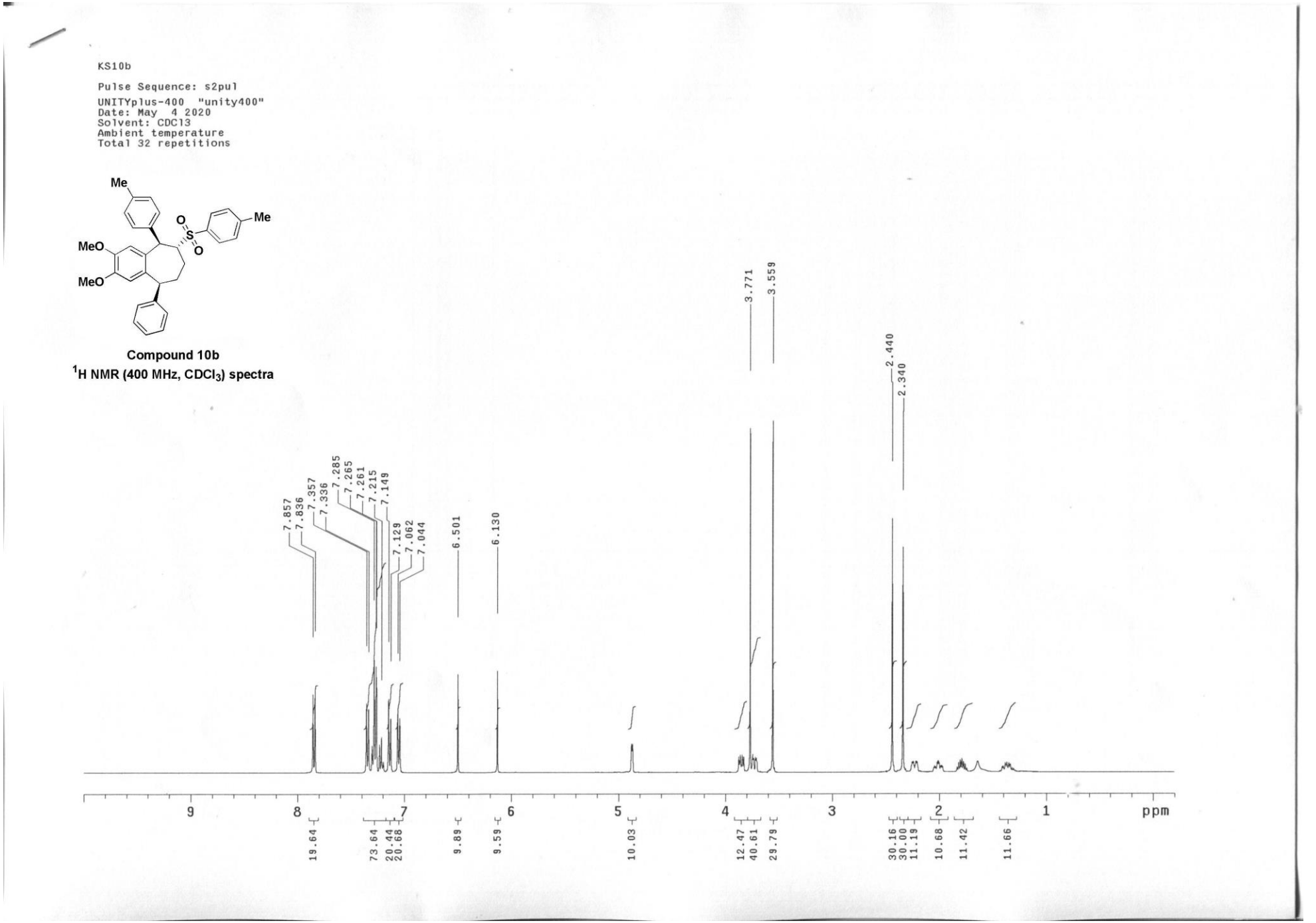


Compound 10a

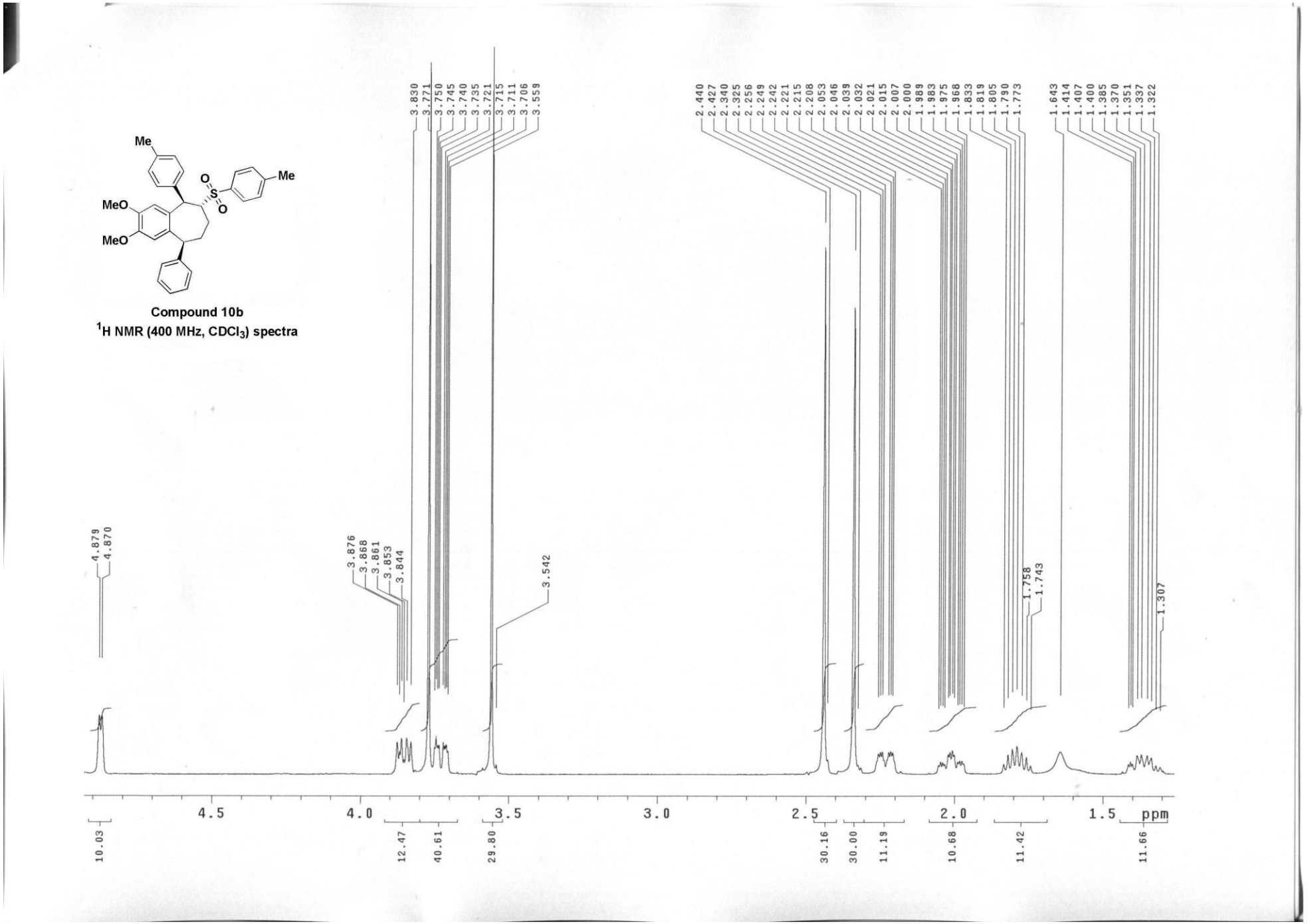
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 10b (^{1}H-NMR spectral data-1)



Compound 10b (^{1}H-NMR spectral data-2)

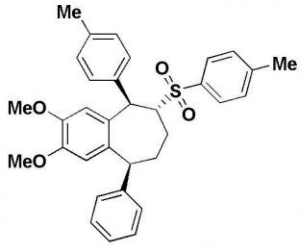


Compound 10b (^{13}C-NMR spectral data)

KS10b

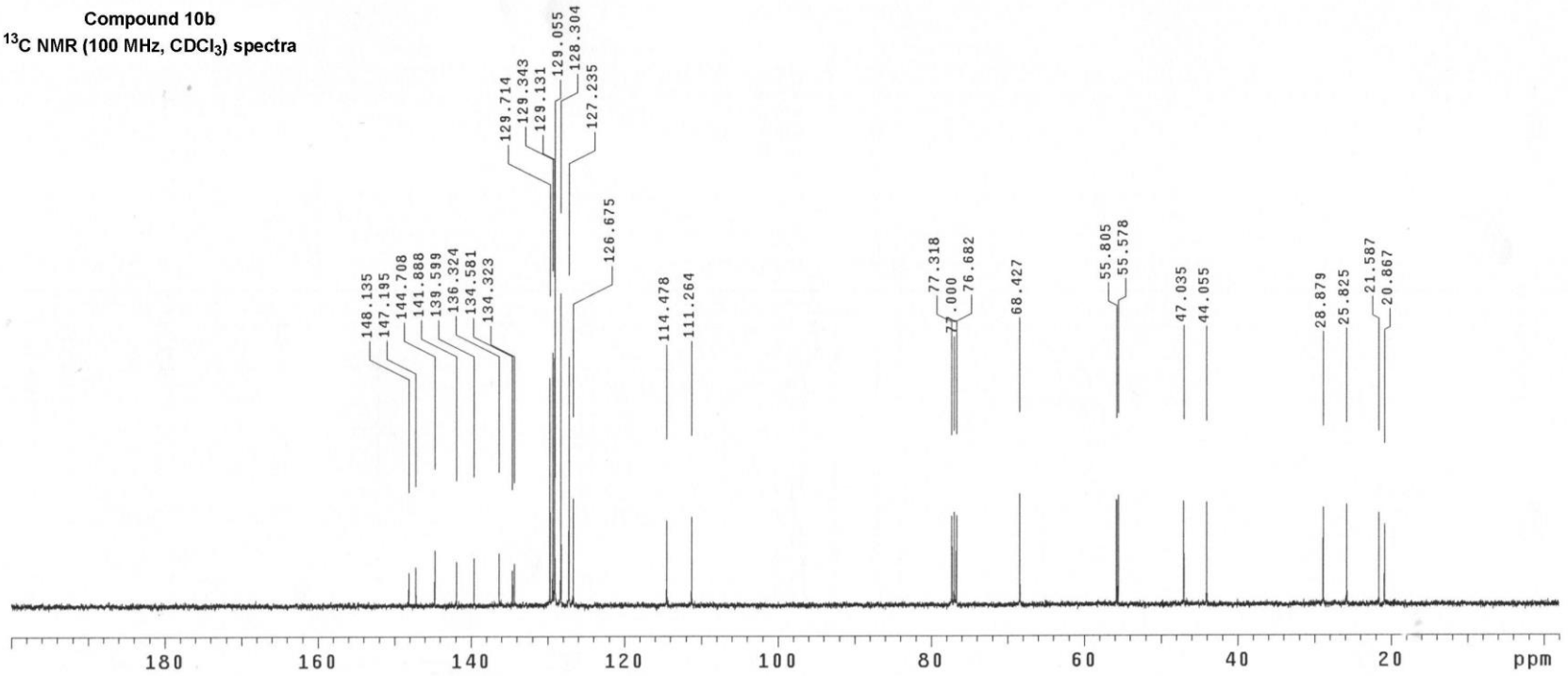
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: May 4 2020
Solvent: CDCl3
Ambient temperature
Total 1600 repetitions

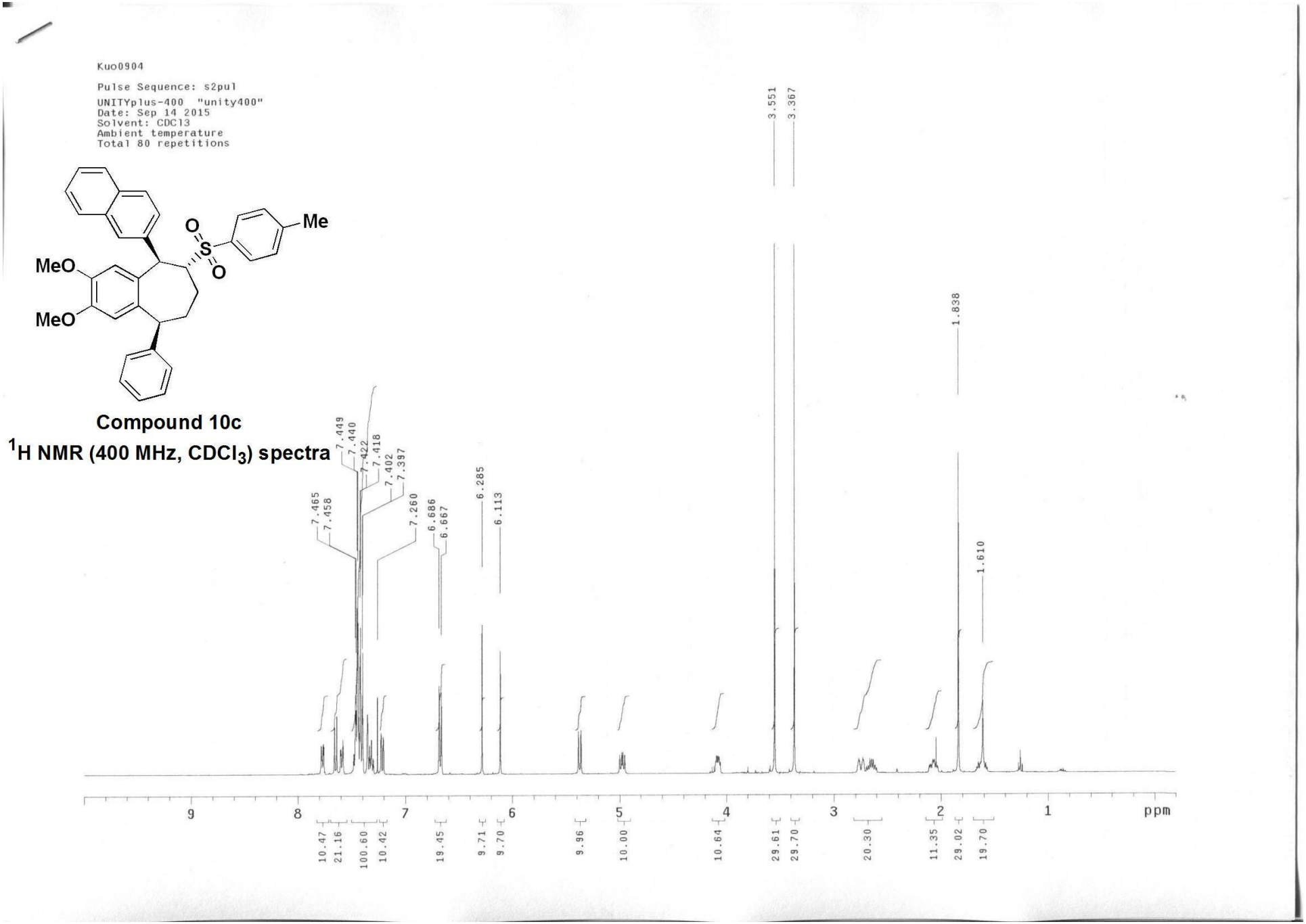


Compound 10b

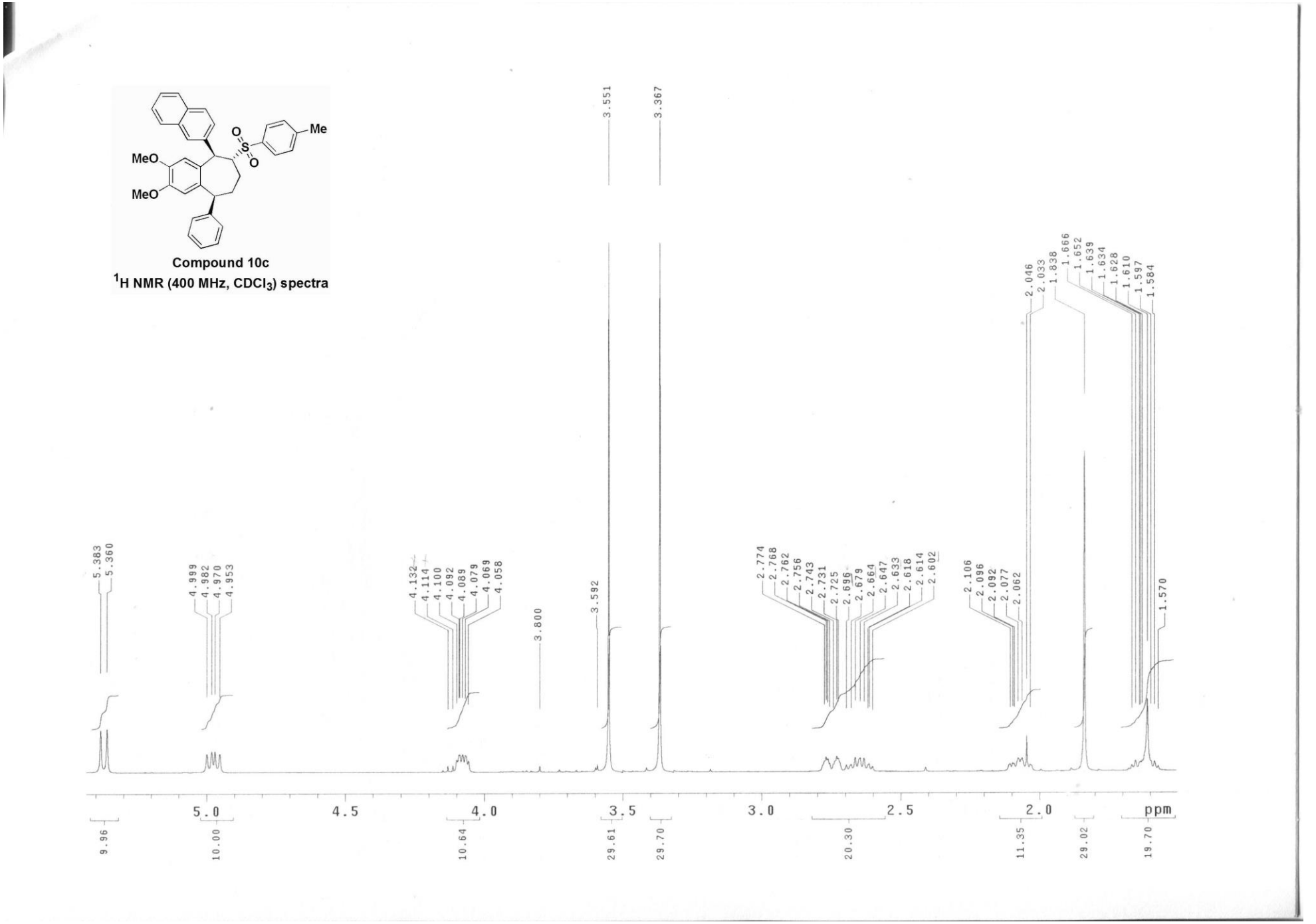
^{13}C NMR (100 MHz, $CDCl_3$) spectra



Compound 10c (^{1}H-NMR spectral data-1)



Compound 10c (^{1}H-NMR spectral data-2)

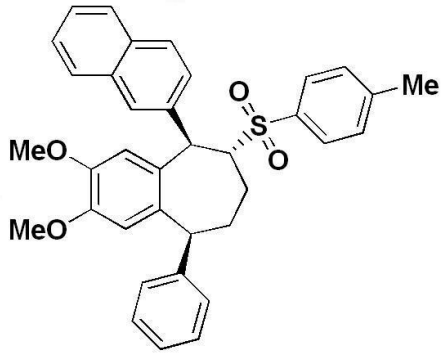


Compound 10c (^{13}C-NMR spectral data)

Kuo0904

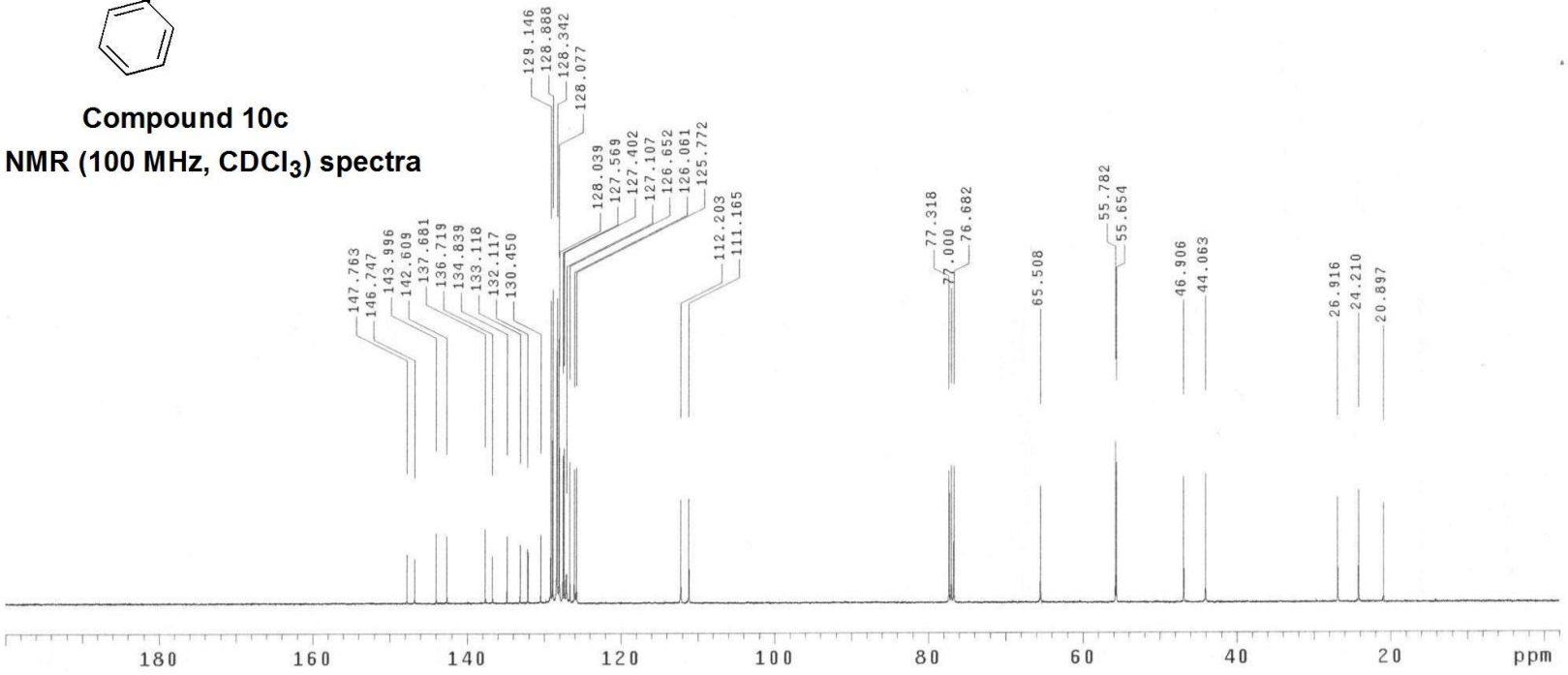
Pulse Sequence: s2pul

UNITYplus-400 "unity400"
Date: Sep 14 2015
Solvent: CDCl3
Ambient temperature
Total 12800 repetitions

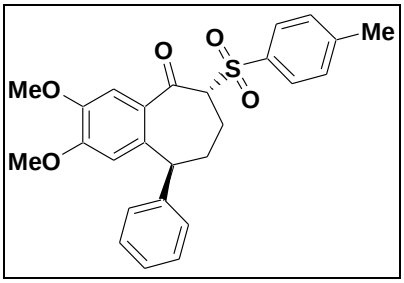


Compound 10c

^{13}C NMR (100 MHz, $CDCl_3$) spectra

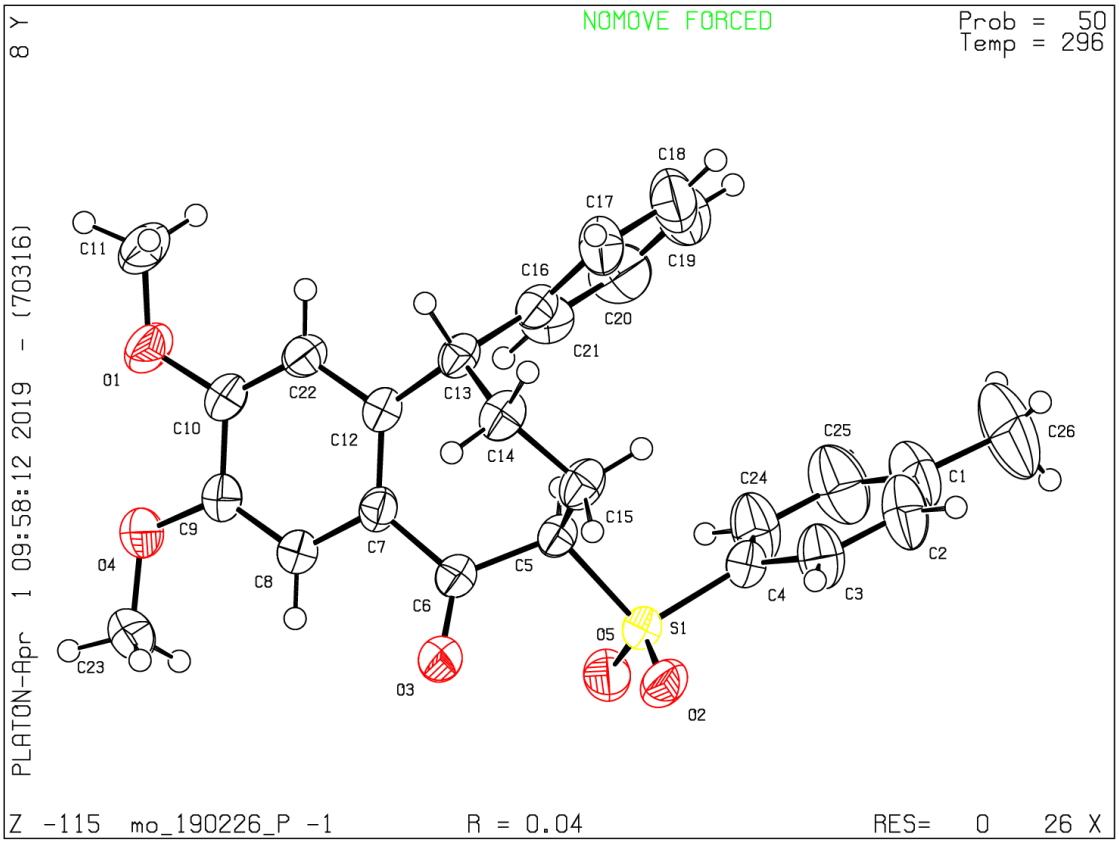


X-ray crystal data of compound 5a (CCDC 1915762)



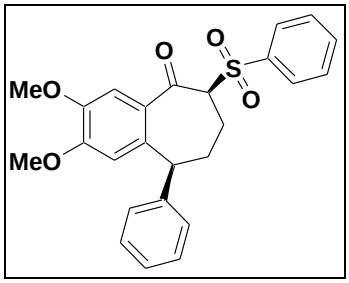
Sample preparation : A solution of compound **5a** (30 mg) in CH_2Cl_2 (10 mL) was placed in a tube (10 mL). EtOAc (2 mL) was added slowly to the vial with a dropper. The vial was closed with little cotton and kept at room temperature for 2 days. Then, colorless prisms were observed.

Crystal measurement : X-ray crystal structures were determined with a Bruker Enraf-Nonius single-crystal diffractometer (CAD4, Kappa CCD). Thermal ellipsoids are drawn at 50% probability level.



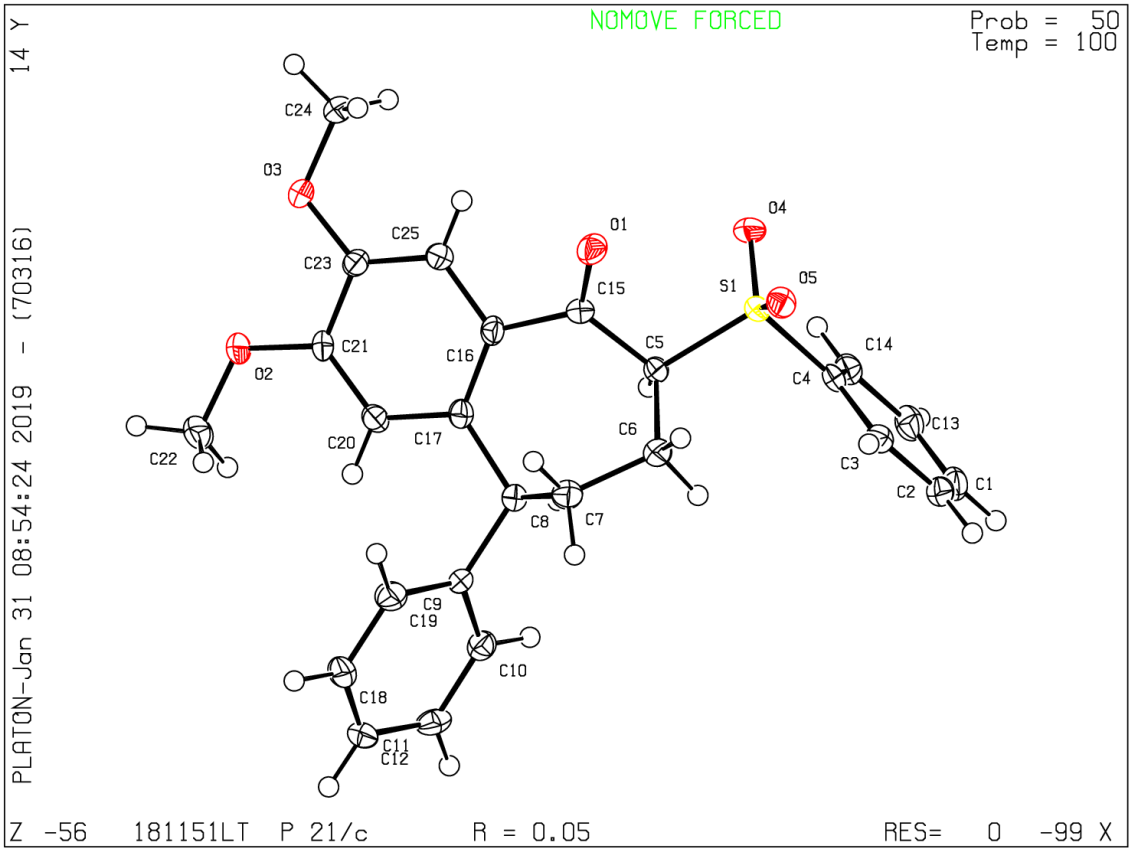
Empirical formula	C26 H26 O5 S	
Formula weight	450.53	
Temperature	296(2) K	
Wavelength	0.71073 Å	
Crystal system	Triclinic	
Space group	P-1	
Unit cell dimensions	a = 8.6479(4) Å	α = 114.461(2)°.
	b = 11.7181(6) Å	β = 90.355(3)°.
	c = 12.4402(7) Å	γ = 96.581(3)°.
Volume	1137.93(10) $Å^3$	
Z	2	
Density (calculated)	1.315 Mg/m^3	
Absorption coefficient	0.177 mm^{-1}	
F(000)	476	
Crystal size	0.24 x 0.20 x 0.19 mm^3	
Theta range for data collection	1.802 to 26.452°.	
Index ranges	-10<=h<=10, -13<=k<=14, -15<=l<=15	
Reflections collected	28716	
Independent reflections	4674 [R(int) = 0.0331]	
Completeness to theta = 25.242°	100.0 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.7454 and 0.7128	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	4674 / 0 / 292	
Goodness-of-fit on F^2	1.039	
Final R indices [I>2sigma(I)]	R1 = 0.0434, wR2 = 0.1020	
R indices (all data)	R1 = 0.0662, wR2 = 0.1136	
Extinction coefficient	n/a	
Largest diff. peak and hole	0.223 and -0.289 $e.Å^{-3}$	

X-ray crystal data of compound 5b (CCDC 1915763)



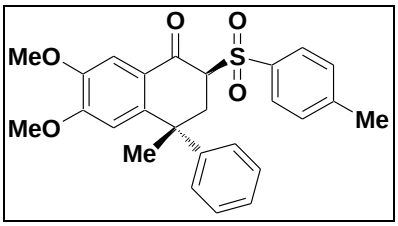
Sample preparation : A solution of compound **5b** (30 mg) in CH_2Cl_2 (10 mL) was placed in a tube (10 mL). EtOAc (2 mL) was added slowly to the vial with a dropper. The vial was closed with little cotton and kept at room temperature for 2 days. Then, colorless prisms were observed.

Crystal measurement : X-ray crystal structures were determined with a Bruker Enraf-Nonius single-crystal diffractometer (CAD4, Kappa CCD). Thermal ellipsoids are drawn at 50% probability level.



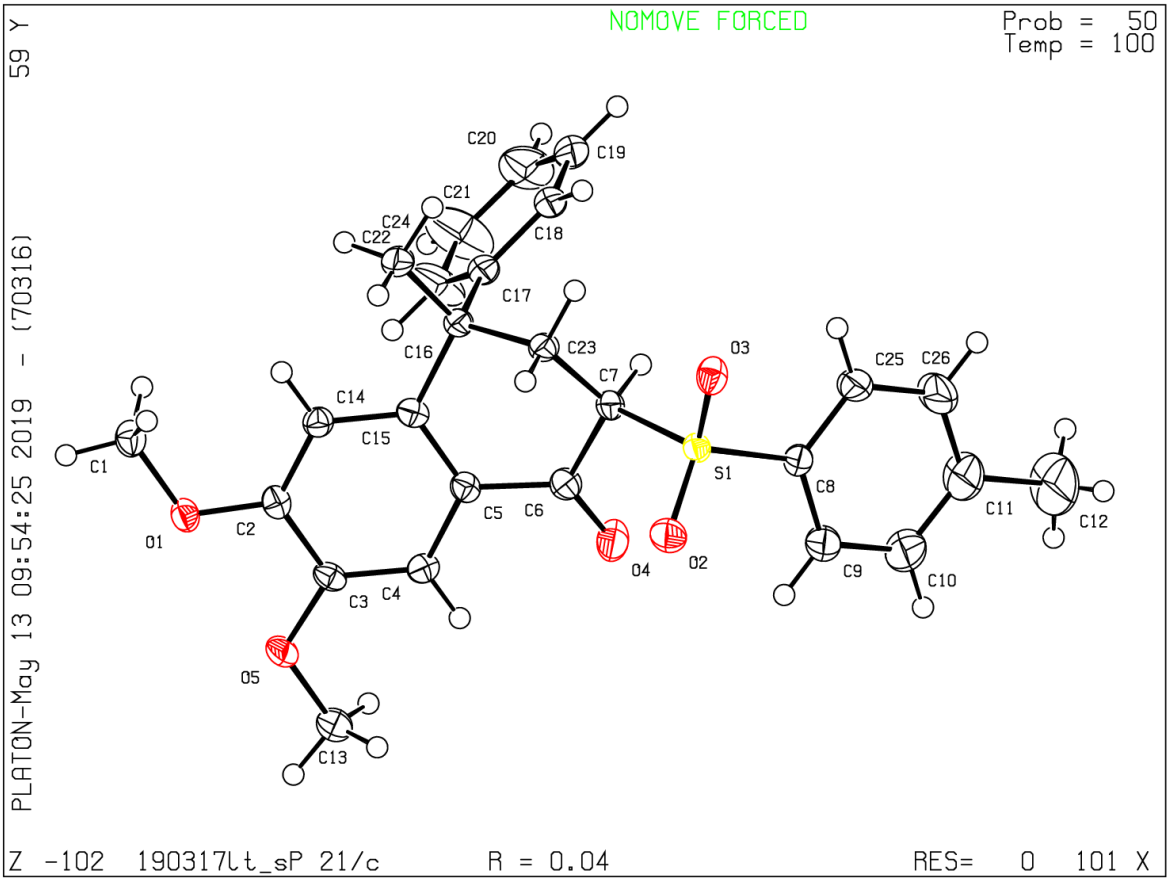
Empirical formula	C25 H24 O5 S	
Formula weight	436.50	
Temperature	100(2) K	
Wavelength	0.71073 Å	
Crystal system	Monoclinic	
Space group	P 21/c	
Unit cell dimensions	a = 12.2830(19) Å	α = 90°.
	b = 19.038(4) Å	β = 107.381(9)°.
	c = 9.2274(14) Å	γ = 90°.
Volume	2059.2(6) $Å^3$	
Z	4	
Density (calculated)	1.408 Mg/m^3	
Absorption coefficient	0.194 mm^{-1}	
F(000)	920	
Crystal size	0.10 x 0.08 x 0.08 mm^3	
Theta range for data collection	1.737 to 26.458°.	
Index ranges	-15<=h<=15, -22<=k<=23, -11<=l<=11	
Reflections collected	14957	
Independent reflections	4226 [R(int) = 0.0578]	
Completeness to theta = 25.242°	100.0 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.7454 and 0.6271	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	4226 / 0 / 282	
Goodness-of-fit on F^2	1.034	
Final R indices [I>2sigma(I)]	R1 = 0.0471, wR2 = 0.1017	
R indices (all data)	R1 = 0.0745, wR2 = 0.1146	
Extinction coefficient	n/a	
Largest diff. peak and hole	0.441 and -0.461 $e.Å^{-3}$	

X-ray crystal data of compound 6a (CCDC 1915765)



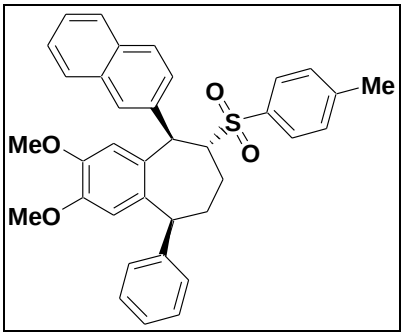
Sample preparation : A solution of compound **6a** (30 mg) in CH_2Cl_2 (10 mL) was placed in a tube (10 mL). EtOAc (2 mL) was added slowly to the vial with a dropper. The vial was closed with little cotton and kept at room temperature for 2 days. Then, colorless prisms were observed.

Crystal measurement : X-ray crystal structures were determined with a Bruker Enraf-Nonius single-crystal diffractometer (CAD4, Kappa CCD). Thermal ellipsoids are drawn at 50% probability level.



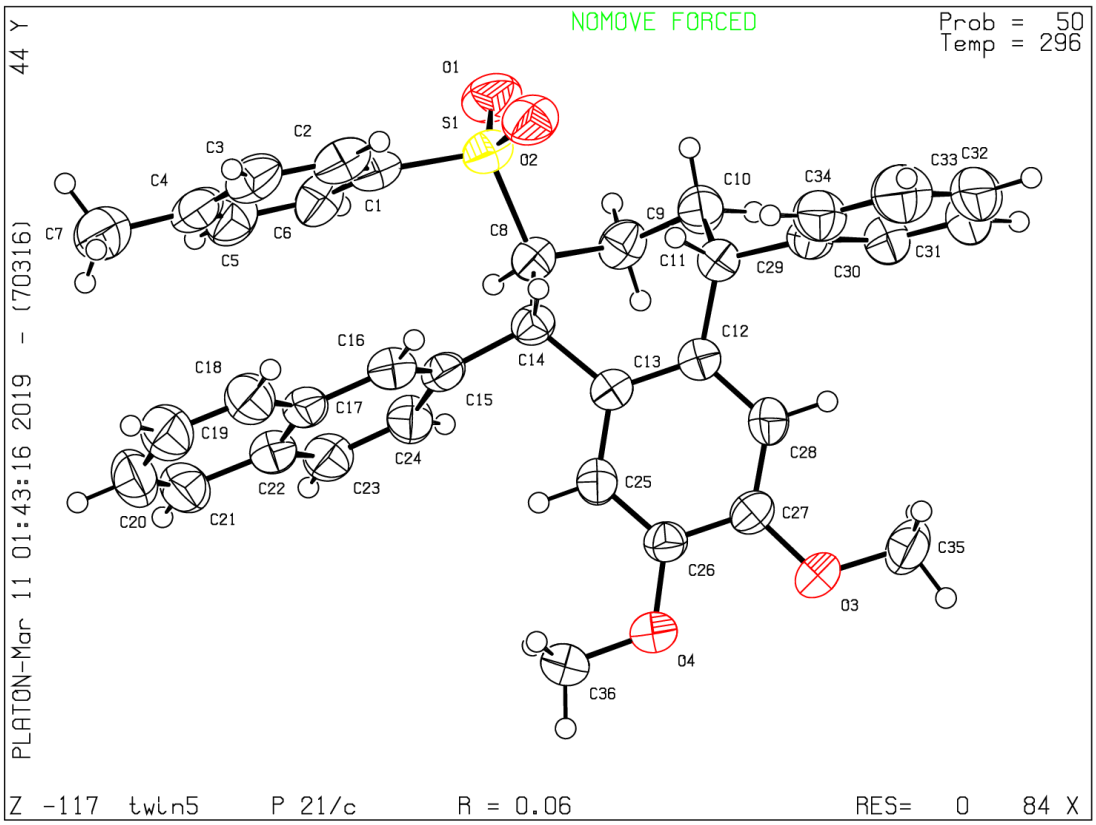
Empirical formula	C26 H26 O5 S	
Formula weight	450.53	
Temperature	100(2) K	
Wavelength	0.71073 Å	
Crystal system	Monoclinic	
Space group	$P2_1/c$	
Unit cell dimensions	a = 17.4857(9) Å	α = 90°.
	b = 9.6877(5) Å	β = 118.713(3)°.
	c = 17.1467(9) Å	γ = 90°.
Volume	2547.4(2) $Å^3$	
Z	4	
Density (calculated)	1.175 Mg/m^3	
Absorption coefficient	0.159 mm^{-1}	
F(000)	952	
Crystal size	0.10 x 0.08 x 0.03 mm^3	
Theta range for data collection	2.376 to 26.419°.	
Index ranges	-21<=h<=21, -12<=k<=12, -21<=l<=21	
Reflections collected	22006	
Independent reflections	5222 [R(int) = 0.0316]	
Completeness to theta = 25.242°	100.0 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.7454 and 0.7144	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	5222 / 0 / 293	
Goodness-of-fit on F^2	1.032	
Final R indices [I>2sigma(I)]	R1 = 0.0395, wR2 = 0.0935	
R indices (all data)	R1 = 0.0524, wR2 = 0.1009	
Extinction coefficient	n/a	
Largest diff. peak and hole	0.372 and -0.379 $e.Å^{-3}$	

X-ray crystal data of compound 10c (CCDC 1915767)



Sample preparation : A solution of compound **10c** (30 mg) in CH_2Cl_2 (10 mL) was placed in a tube (10 mL). EtOAc (2 mL) was added slowly to the vial with a dropper. The vial was closed with little cotton and kept at room temperature for 2 days. Then, colorless prisms were observed.

Crystal measurement : X-ray crystal structures were determined with a Bruker Enraf-Nonius single-crystal diffractometer (CAD4, Kappa CCD). Thermal ellipsoids are drawn at 50% probability level.



Empirical formula	C36 H34 O4 S	
Formula weight	562.69	
Temperature	296(2) K	
Wavelength	0.71073 Å	
Crystal system	Monoclinic	
Space group	P 21/c	
Unit cell dimensions	a = 15.699(4) Å	α = 90°.
	b = 7.434(2) Å	β = 98.529(16)°.
	c = 24.908(8) Å	γ = 90°.
Volume	2874.6(14) $Å^3$	
Z	4	
Density (calculated)	1.300 Mg/m^3	
Absorption coefficient	0.153 mm^{-1}	
F(000)	1192	
Crystal size	0.18 x 0.15 x 0.06 mm^3	
Theta range for data collection	1.312 to 25.146°.	
Index ranges	-18<=h<=18, 0<=k<=8, 0<=l<=29	
Reflections collected	5423	
Independent reflections	5423 [R(int) = 0.0753]	
Completeness to theta = 25.000°	100.0 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.9484 and 0.5049	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	5423 / 0 / 374	
Goodness-of-fit on F^2	1.047	
Final R indices [I>2sigma(I)]	R1 = 0.0641, wR2 = 0.1662	
R indices (all data)	R1 = 0.1166, wR2 = 0.1989	
Extinction coefficient	n/a	
Largest diff. peak and hole	0.339 and -0.291 $e.Å^{-3}$	