Supporting Information

Synthesis of Carbazones *via* an Intramolecular Cyclization of 2-(6-Substituted 3(Z)-hexen-1,5-diynyl)anilines and Their Related Molecules

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NMR spectra of 1a – 1g	2 – 15
NMR spectra of 2a – 2j	16 – 35
NMR spectra of 9a – 9g	36 – 49
NMR spectra of 10a – 10n	50 – 76

Pulse Sequence: s2p1
 Solvent: CDCl₃
 Ambient Temperature
 GEMINI-200 Oxford200
 Relax. delay 1.50 sec
 Pulse 45.0 degrees
 Acq. time 1.000 sec
 V1ftn 12590.0 Hz
 4732 repetitions
 OBSERVE C13, 50.2845038 MHz
 DECOUPLE H1, 199.8785586 MHz
 Power 30 dB
 continuously on
 WALTZ-16 solulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FI size 32768
 Total time 14 hr, 39 min, 24 sec

1a

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 OENI-204 Oxford200
 Pulse 45.0 degrees
 Acq. time 3.002 sec
 Width 3000.3 Hz
 64 repetitions
 observe M1 199.1775315 MHz
 DATA PROCESSING
 FT size 32768
 Total time 3 min, 24 sec

1a

1b

Pulse Sequence: s2pu1
 Solvent: CDCl3
 Ambient temperature
 GENI1-100 Oxford201
 Relax. delay 1.500 sec
 Pulse 45.0 degrees
 Acq. time 1.418 sec
 Width 12500.0 Hz
 1200 repetitions
 OBSERVE C13 50.284048 MHz
 DECOUPLE H1 101.978536 MHz
 Power 30 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 65536
 Total time 17 hr, 41 min, 0 sec

Pulse Sequence: stpul
 Solvent: CDCl₃
 Ambient temperature
 GEMINI-210 "gemin200"
 Relax. delay 1.080 sec
 Pulse 45.0 degrees
 Acq. time 2.731 sec
 Width 2189.6 Hz
 16 repetitions
 ONSERVE H1, 119.9750731 MHz
 DATA PROCESSING
 FT size 16384
 Total time 3 hr, 24 min, 48 sec

1b

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GEMINI-300 Oxford260

Relax. delay 1.500 sec
 Pulse 45.0 degrees
 Acq. time 1.000 sec
 Width 12500.0 Hz
 1632 repetitions
 OBSERVE C13, 50.2844024 MHz
 DECOUPLE H1, 101.1735586 MHz
 Power 30 dB
 Continuously on
 VOLTAGE 100.000
 P.A. PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 14 hr, 39 min, 24 sec

1c

1c

Pulse Sequence: zgpg30
 Solvent: CDCl3
 Ambient temperature
 QNP1-200 500MHz
 Pulse 45.0 degrees
 Acq. time 3.002 sec
 Width 3000.3 Hz
 32 repetitions
 OBSERVE H1, 101.1775315 MHz
 DATA PROCESSING
 FT size 32768
 Total time 1 min, 42 sec

13C OBSERVE

Pulse Sequence: s2pul
Solvent: CDC13
Ambient temperature
GEMINI-200 "gemin1200"

Pulse 39.9 degrees
Acq. time 1.200 sec
Width 12572.2 Hz
1920 repetitions
OBSERVE C13, 50.2837655 MHz
DECOUPLE H1, 199.9769736 MHz
Power 30 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.0 Hz
FT size 32768
Total time 7 hr, 32 min, 27 sec

1d

```

Pulse Sequence: s2pul
Solvent: CMCIS
Ambient temperature
GENIUS-200 "oxford20"
Pulse 45.0 degrees
Acq. time 3.402 sec
Width 5000.3 Hz
64 repetitions
OBSERVE H1 13.875313 MHz
DATA PROCESSING
FT size 32768
Total time 2 hr, 50 min, 36 sec

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1d

Pulse Sequence: stipul
 solvent: CDCl₃
 ambient temperature
 GEMINI-200 "Oxford200"

Relax. delay 1.500 sec
 Pulse 45.0 degree
 Acq. time 1.000 sec
 Width 12500.0 Hz
 1424 repetitions
 OBSERVE C13, 50.2844054 MHz
 DECOUPLE H1, 139.9785586 MHz
 Power 30 dB
 continuously on
 VOLTAGE-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 13 hr, 30 min, 24 sec

10

28.809

1e

Pulse Sequence: zgpg30
 Solvent: CDCl3
 Ambient temperature
 GENI-200 Oxford200
 Pulse 45.0 degrees
 Acq. time 3.012 sec
 Width 3000.0 Hz
 32 repetitions
 OBSERVE H1 199.9775315 MHz
 DATA PROCESSING
 FT size 32768
 Total time 1 min, 42 sec

Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
9EHJN1-200 Oxford200

Pulse 45.2 degrees
 Width 1.00 sec
 Width 125.00 Hz
 272 repetitions
 08SERVE CLS, 50-204084 MHZ
 POWER FLR, 139.378556 MHZ
 Power 50 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line Broadcasting 1.0 Hz
 File size 2728
 Total time 1 hr, 13 min, 24 sec

1f

Pulse sequence: zgpg30
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 125 MHz
 Pulse 9.9 degrees
 Acq. time 1.20 sec
 Width 12572.2 Hz
 400 repetition
 OBSERVE CH3, 50.2837581 MHz
 DECOUPLE H1, 119.9760736 MHz
 Power 39 dB
 continuously on
 WALZ-15 decelerated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

1g

Pulse Sequence: t2pul
 Solvent: CDCl3
 Ambient temperature
 cENI1-103 "gemin200"
 Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Acq. time 2.751 sec
 Width 1319.8 Hz
 43 repetitions
 888.862 MHz
 MAVA PROCESSING
 FT size 1384
 Total time 3 hr, 36 min, 40 sec

19

Pulse Sequence: s2pu1

2a

2a

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 45.0 degrees
 Acq. time 3.200 sec
 Width 5000.6 Hz
 16 repetitions
 OBSERVE H1, 393.9812405 MHz
 DATA PROCESSING
 FT size 65536
 Total time 0 min, 51 sec

2b

Pulse Sequence: s2pu1
 Solvent: CDC13
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Relax. delay 1.500 sec
 Pulse 45.0 degrees
 Acq. time 0.840 sec
 Width 25000.0 Hz
 2784 repetitions
 OBSERVE C13, 100.5753633 MHz
 DECOUPLE H1, 399.9832506 MHz
 Power 45 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 11 hr, 56 min, 58 sec

2b

Pulse Sequence: s2pul
Solvent: CDC13
Ambient temperature
UNITYplus-400 "unityplus400"

```
Pulse 42.3 degrees
Acq. time 4.000 sec
Width 6000.5 Hz
32 repetitions
OBSERVE H1, 399.9812412 MHz
DATA PROCESSING
FT size 85596
Total time 2 min, 8 sec
```

2c

Pulse Sequence: s2pul
 Solvent: Benzene
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 23.6 degrees
 Acq. time 0.800 sec
 Width 25000.0 Hz
 528 repetitions
 OBSERVE C13, 100.5752666 MHz
 DECOUPLE H1, 399.8832666 MHz
 Power 43 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 65536
 Total time 4 hr, 30 min, 18 sec

Pulse Sequence: s2pul
 Solvent: Benzene
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 25.4 degrees
 Acq. time 3.200 sec
 Width 6000.6 Hz
 88 repetitions
 OBSERVE H1 399.9812603 MHz
 DATA PROCESSING
 FT size 65536
 Total time 2 hr, 51 min, 13 sec

Pulse Sequence: s2pul
 Solvent: Benzene
 Ambient temperature
 UNITYplus-400 "unityplus400"

Pulse 44.1 degrees
 Acq. time 0.640 sec
 Width 25000.0 Hz
 672 repetitions
 OBSERVE C13, 100.5752663 MHz
 DECOUPLE H1, 339.9632866 MHz
 Power 42 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 3 hr, 36 min, 56 sec

2D

2d

Pulse Sequence: s2pul
 Solvent: Benzene
 Ambient temperature
 GENIUI-200 Oxford200
 Pulse 45.0 degrees
 Acq. time 3.002 sec
 Width 3800.3 Hz
 40 repetitions
 OBSERVE H1, 100.977581 MHz
 DATA PROCESSING
 FT size 32768
 Total time 2 hr, 50 min, 36 sec

Pulse Sequence: e2pul
 Solvent: Benzene
 Ambient temperature
 GEMINI-200 "gemin1200"

Pulse 39.8 degrees
 Acq. time 1.200 sec
 Width 12572.2 Hz
 982 repetitions
 OBSERVE C13, 50.2837196 MHz
 DECOUPLE H1, 199.9760915 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

2e

Pulse Sequence: zgpg30
Solvent: Benzene
Ambient temperature
GENI-200 "gemin1200"

Relax. delay 1.000 sec
Pulse 6.2 degrees
Acq. time 2.731 sec
Width 2398.6 Hz
48 repetitions
OBSERVE F1, 159.9750832 MHz
DATA PROCESSING
F1 size 16384
Total time 3 hr, 36 min, 40 sec

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 File: G138C
 UNITYplus-400 "unityplus400"
 Pulse 44.1 degrees
 Acq. time 0.840 sec
 Width 25000.0 Hz
 20000 repetitions
 OBSERVE C13, 100.5752680 MHz
 DECOUPLE H1, 399.3632506 MHz
 Power 42 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 3 hr, 36 min, 56 sec

2f

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 55.7 degrees
 Acq. time 3.280 sec
 Width 6000.6 Hz
 88 repetitions
 OBSERVE H1 399.9812604 MHz
 DATA PROCESSING
 FT size 65536
 Total time 2 hr, 51 min, 13 sec

Pulse Sequence: s2pu1
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin200"

Pulse 39.9 degrees
 Acq. time 1.200 sec
 Width 12572.2 Hz
 3312 repetitions
 OBSERVE C13, 50.2837151 MHz
 DECOUPLE H1, 100.626136 MHz
 Power 30 dB, continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

2g

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 45.0 degrees
 Acq. time 3.200 sec
 Width 6000.6 Hz
 64 repetitions
 OBSERVE H1 393.9812504 MHz
 DATA PROCESSING
 FT size 65536
 Total time 3 min, 25 sec

Pulse Sequence: s2pu1
 Solvent: Benzene
 Ambient temperature
 UNITYplus-400 "UNITYplus400"
 Pulse 23.6 degrees
 Acq. time 0.800 sec
 Width 25000.0 Hz
 368 repetitions
 OBSERVE C13, 100.5752673 MHz
 DECOUPLE H1, 399.9832866 MHz
 Power 43 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 65536
 Total time 4 hr, 30 min, 16 sec

2H

2h

Pulse Sequence: s2pul
 Solvent: Benzene
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 25.4 degrees
 Acq. time 3.200 sec
 Width 6000.6 Hz
 200 repetitions
 OBSERVE H1, 399.9812605 MHz
 DATA PROCESSING
 FT size 85536
 Total time 2 hr, 51 min, 13 sec

Pulse Sequence: s2pu1
 Solvent: Benzene
 Ambient temperature
 GENI-200 "gemin200"

Pulse 31.9 degrees
 Acq. time 1.200 sec
 Width 12572.2 Hz
 2856 repetitions
 OBSERVE C13, 50.2837196 MHz
 DECOUPLE H1, 199.9760315 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

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2f

Pulse Sequence: s2pul
Solvent: Benzene
Ambient temperature
GENI-200 "gemin200"

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 2.731 sec
Width 2399.6 Hz

36 repetitions
OBSERVE: H1, 199.9750869 MHz
DATA PROCESSING
FT size 16384
Final time 3 hr, 36 min, 40 sec

Pulse Sequence: s2pu1
 Solvent: Benzene
 Ambient temperature
 GEMINI-200 "gemin200"

Pulse 39.9 degrees
 Acq. time 1.20 sec
 Width 12572.2 Hz
 1952 repetitions
 OBSERVE C13, 50.2837196 MHz
 DECOUPLE H1, 199.9760915 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32788
 Total time 7 hr, 32 min, 27 sec

2j

2]

Pulse Sequence: s2pul
 Solvent: Benzene
 Ambient temperature
 GEMINI-200 "gemin1200"
 Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Acq. time 2.731 sec
 Width 2939.6 Hz
 44 repetitions
 OBSERVE H1, 199.3750825 MHz
 DATA PROCESSING
 FI size 16384
 Total time 3 hr, 36 min, 40 sec

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin1200"
 Pulse 31.9 degrees
 Acq. time 1.280 sec
 Width 12572.2 Hz
 2592 repetitions
 OBSERVE C13, 50.2837655 MHz
 DECOUPLE H1, 100.6260796 MHz
 Power 30 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin1200"
 Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Acq. time 2.731 sec
 Width 2399.6 Hz
 40 repetitions
 OBSERVE H1 199.9750735 MHz
 DATA PROCESSING
 FT size 16384
 Total time 3 hr, 36 min, 40 sec

GIL-086-T2

Pulse Sequence: s2pul

Solvent: CDC13

Ambient temperature

GEVINI-200 "gemin200"

Relax. delay 1.000 sec

Pulse 45.0 degrees

Acq. time 2.731 sec

Width 2989.6 Hz

52 repetitions

OBSERVE H1, 199.4750689 MHz

DATA PROCESSING

FT size 16384

Total time 3 hr, 36 min, 40 sec

9b

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 File: G6T2
 GEMINI-200 "gemin1200"
 Pulse 39.9 degrees
 Acq. time 1.200 sec
 Width 12572.2 Hz
 20000 repetitions
 OBSERVE C13, 50.2837855 MHz
 DECOUPLE H1, 139.3760736 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

Pulse Sequence: szpul
 Solvent: Benzene
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 44.1 degrees
 Acq. time 0.640 sec
 Width 25000.0 Hz
 4688 repetitions
 OBSERVE C13, 100.5752663 MHz
 DECOUPLE H1, 399.9832866 MHz
 Power 42 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 3 hr, 36 min, 56 sec

9c

Pulse Sequence: s2pul
 Solvent: Benzene
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 55.7 degrees
 Acq. time 3.280 sec
 Width 6000.6 Hz
 104 repetitions
 OBSERVE H1 399.9812601 MHz
 DATA PROCESSING
 FI size 65536
 Total time 2 hr, 51 min, 13 sec

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "Oxford200"

Pulse 45.2 degrees
 Acq. time 1.800 sec
 Width 12500.0 Hz
 5872 repetitions
 OBSERVE C13, 50.2844946 MHz
 DECOUPLE H1, 199.9785586 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 6 hr, 19 min, 24 sec

8d

77.622
 76.985
 76.948

STANDARD 1H OBSERVE

Pulse Sequence: s2pu1
Solvent: CDCl3
Ambient temperature
GENI-200 "Oxford200"

Pulse 45.0 degrees
Acq time 3.002 sec
Width 3000.3 Hz
48 repetitions
OBSERVE H1 100.9775315 MHz
DATA PROCESSING
F1 size 32786
Total time 2 hr, 50 min, 36 sec

9d

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 GEMINI-200 Oxford200"

Pulse 45.0 degrees
 Acq. time 1.000 sec
 Width 12500.0 Hz
 1528 repetitions
 OBSERVE G13, 50.2644661 MHz
 DECOUPLE H1, 199.3785586 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FI size 32768
 Total time 6 hr, 19 min, 24 sec

96

9e

Pulse Sequence: s2pul
 Solvent: Benzene
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 55.7 degrees
 Acq. time 3.200 sec
 Width 6000.6 Hz
 72 repetitions
 OBSERVE -H1, 399.9812805 MHz
 DATA PROCESSING
 FT size 65536
 Total time 2 hr, 51 min, 13 sec

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 44.5 degrees
 Acq. time 0.800 sec
 Width 25000.0 Hz
 400 repetitions
 OBSERVE C13, 100.575976 MHz
 DECOUPLE H1, 399.9632506 MHz
 Power 40 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 65536
 Total time 4 hr, 30 min, 16 sec

9f

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 55.7 degrees
 Acq. time 3.280 sec
 Width 6000.6 Hz
 80 repetitions
 OBSERVE H1, 399.9812412 MHz
 DATA PROCESSING
 FT size 65536
 Total time 2 hr, 51 min, 13 sec

9f

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Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
UNITYplus-400 "unityplus400"

Pulse 45.0 degrees
Acq. time 9.200 sec
Width 600.0 Hz
184 repetitions
OBSERVE H1, 399.9812416 MHz
DATA PROCESSING
FT size 6536
Total time 2 hr, 51 min, 13 sec
  
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10a

Pulse Sequence: e2pul
 Solvent: CDCl₃
 Ambient temperature
 GEMINI-200 "gemin200"
 Pulse 39.9 degrees
 Acq. time 1.280 sec
 Width 12571.2 Hz
 2240 repetitions
 OBSERVE C13, 50.2837655 MHz
 DECOUPLE H1, 199.570736 MHz
 Power 36 dB
 continuously on
 VALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

10a

Pulse Sequence: zgpg30
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin1200"
 Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Acq. time 2.731 sec
 Width 239.6 Hz
 34 repetitions
 OBSERVE F1: 139.9750475 MHz
 DATA PROCESSING
 FI size 16384
 Total time 3 hr, 36 min, 40 sec

10b

Pulse Sequence: s2pu1
 Solvent: CDCl₃
 Ambient temperature
 GEMINI-290 "Oxford290"
 Pulse 45.2 degrees
 Acq. time 1.080 sec
 Width 12500.0 Hz
 288 repetitions
 OBSERVE C13, 50.2844093 MHz
 DECOUPLE H1, 198.8765586 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 6 hr, 18 min, 24 sec

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin1200"
 Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Acq. time 2.731 sec
 Width 2833.6 Hz
 36 repetitions
 OBSERVE: H1, 139.9750731 MHz
 DATA PROCESSING
 FI size 16364
 Total time 2 min, 42 sec

10b

10c

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 GEMINI-200 "gemin200"
 Pulse 39.8 degrees
 Acq. time 1.200 sec
 Width 12572.2 Hz
 7048 repetitions
 OBSERVE C13, 50.2837633 MHz
 DECOUPLE H1, 135.3760736 MHz
 Power 50 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

Pulse Sequence: s2pu1
 Solvent: CDCl₃
 Ambient temperature
 GENIUI-200 "Oxford200"
 Pulse 45.0 degrees
 Acq. time 3.032 sec
 Width 3000.3 Hz
 32 repetitions
 OBSERVE H1 100.6275313 MHz
 DATA PROCESSING
 FI size 32768
 Total time 1 min, 42 sec

10c

10d

Pulse Sequence: s2pu1
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin200"
 Pulse 31.9 degrees
 Acq. time 1.200 sec
 Width 12572.2 Hz
 704 Repetitions
 OBSERVE C13, 50.2637686 MHz
 DECOUPLE H1, 199.9760736 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 12 hr, 3 min, 56 sec

10d

Pulse Sequence: s2pu1
 Solvent: CDCl3
 Ambient temperature
 GENI-200 "gemin1200"
 Relax. delay 1.000 sec
 Pulse 15.5 degrees
 Acq. time 2.731 sec
 Width 2399.6 Hz
 114 repetitions
 OBSERVE: H1, 199.9750735 MHz
 DATA PROCESSING
 FT size 16384
 Total time 3 hr, 31 min, 21 sec

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 GEMINI-200 "gemin1200"
 Pulse 39.9 degrees
 Acq. time 1.250 sec
 W111-125742 Hz
 2048 repetitions
 OBSERVE C13, 50.2537570 MHz
 DECOUPLE H1, 133.3760756 MHz
 Power 30 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

10a

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 GEMINI-200 "gemin1200"
 Relax. delay 1.000 sec
 Pulse 6.2 degrees
 Acq. time 2.731 sec
 Width 2399.6 Hz
 48 repetitions
 OBSERVE H1, 199.9750735 MHz
 DATA PROCESSING
 FT size 16384
 Total time 3 hr, 36 min, 40. sec

10e

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GENIINI-200 Oxford200"

Pulse 45.2 degrees
 Acq. time 1.000 sec
 Width 12500.0 Hz
 752 repetitions
 OBSERVE C13, 50.2844115 MHz
 DECOUPLE H1, 199.9785586 MHz
 Power 50 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 6 hr, 19 min, 24 sec

10f

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin1200"
 Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Acq. time 2.731 sec
 Width 2999.6 Hz
 24 repetitions
 OBSERVE H1 199.9750735 MHz
 DATA PROCESSING
 FT size 16384
 Total time 3 hr, 36 min, 40 sec

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10g

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 GEMINI-200 "gemin200"
 Pulse 33.9 degrees
 Acq. time 1.280 sec
 Width 12572.2 Hz
 720 repetitions
 OBSERVE C13, 50.2837683 MHz
 DECOUPLE H1, 125.760736 MHz
 Power 30 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FI size 32768
 Total time 7 hr, 32 min, 27 sec

10g

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin1200"
 Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Acq. time 2.731 sec
 Width 2999.6 Hz
 40 repetitions
 OBSERVE H1, 199.3750790 MHz
 DATA PROCESSING
 FT size 10384
 Total time 3 hr, 36 min, 40 sec

10h

Pulse Sequence: s2pu1
 Solvent: CDCl3
 Ambient temperature
 GENI-200 "oxford200"
 Pulse 45.2 degrees
 Acq. time 1.000 sec
 Width 12500.0 Hz
 1872 repetitions
 OBSERVE C13, 50.2844054 MHz
 DECOUPLE H1, 199.9785566 MHz
 Power 38 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 6 hr, 19 min, 24 sec

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GENI-200 "Oxford200"
 Pulse 45.0 degrees
 Acq. time 3.002 sec
 Width 3000.3 Hz
 48 repetitions
 OBSERVE H1, 100.6275471 MHz
 DATA PROCESSING
 FT size 32788
 Total time 2 hr, 59 min, 24 sec

10h

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GENI-200 "gemin200"
 Pulse 33.9 degrees
 Acq. time 1.200 sec
 Width 12572.2 Hz
 2576 repetitions
 OBSERVE C13, 50.2837640 MHz
 DECOUPLE H1, 199.9760736 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

101

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "Oxford200"
 Pulse 45.0 degrees
 Acq. time 3.002 sec
 Width 3000.3 Hz
 32 repetitions
 OBSERVE H1, 199.8775313 MHz
 DATA PROCESSING
 FT size 32768
 Total time 1 min, 42 sec

101

10j

Pulse Sequence: s2pu1
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin1200"
 Pulse 39.9 degrees
 Acq. time 1.200 sec
 Width 12572.2 Hz
 528 repetitions
 OBSERVE C13, 50.2837455 MHz
 DECOUPLE H1, 100.6260796 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

```
Pulse Sequence: $2pul
Solvent: CDC13
Ambient Temperature
GENIINI-200 "gemini200"
Relax. delay 1.000 sec
Pulse 6.2 degrees
Acq. time 2.751 sec
Width 2899.6 Hz
88 repetitions
OBSERVE H1 399.9750087 MHz
DATA PROCESSING
FT size 10384
Total time 3 hr, 36 min, 40 sec
```

Pulse Sequence: s2pu1
 Solvent: CDCl3
 Ambient temperature
 GENIINI-200 "Oxford200"
 Pulse 45.2 degrees
 Acq. time 1.000 sec
 Width 12500.0 Hz
 1000 repetitions
 OBSERVE C13, 50.2844046 MHz
 DECOUPLE H1, 100.628506 MHz
 Power 30 dB,
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 6 hr, 19 min, 24 sec

10k

10k

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 Oxford200"
 Pulse 45.0 degrees
 Acq. time 3.002 sec
 Width 3000.3 Hz
 40 repetitions
 OBSERVE H1, 199.9775311 MHz
 DATA PROCESSING
 FT size 32768
 Total time 2 hr, 50 min, 36 sec

Pulse Sequence: s2pu1
 Solvent: CDCl3
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 44.5 degrees
 Acq. time 0.800 sec
 Width 25000.0 Hz
 5504 repetitions
 OBSERVE C13, 100.5753706 MHz
 DECOUPLE H1, 399.5832506 MHz
 Power 40 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 65536
 Total time 4 hr, 30 min, 16 sec

101

77.250
 76.932
 76.613

Pulse Sequence: s2pul
 Solvent: CDCl3
 Ambient temperature
 UNITYplus-400 "unityplus400"
 Pulse 44.7 degrees
 Acq. time 3.200 sec
 Width 6000.6 Hz
 S2 repetitions
 OBSERVE H1, 399.9812416 MHz
 DATA PROCESSING
 Line broadening 0.1 Hz
 FT size 65536
 Total time 1 min, 42 sec

101

10m

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 GENIINI-200 "geminizoo"
 Pulse 34.9 degrees
 Acq. time 1.200 sec
 Width 12572.2 Hz
 176 repetitions
 OBSERVE G13, 50.2537686 MHz
 DECOUPLE H1, 139.3769736 MHz
 Power 30 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 32768
 Total time 7 hr, 32 min, 27 sec

10n

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Ambient temperature
 File: GIL214C
 GENI-200 "oxford200"
 Pulse 45.2 degrees
 Acq. time 1.000 sec
 Width 12500.0 Hz
 432 repetitions
 OBSERVE C13, 50.284089 MHz
 DECOUPLE H1, 100.625586 MHz
 Power 30 dB
 Continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FI size 32768
 Total time 6 hr, 10 min, 24 sec

Pulse Sequence: s2pu1
 Solvent: CDCl3
 Ambient temperature
 GEMINI-200 "gemin1200"
 Relax. delay 1.000 sec
 Pulse 45.0 degrees
 Acq. time 2.731 sec
 Width 2399.6 Hz
 24 repetitions
 OBSERVE H1, 199.9750731 MHz
 DATA PROCESSING
 FT size 16384
 Total time 3 hr, 36 min, 40 sec

10n