SUPPORTING INFORMATION

FOR

The Synthesis of Bridged Azabicyclic Structures Via Ring-Closing Olefin Metathesis

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General. Unless otherwise indicated, all starting materials were obtained from commercial suppliers and used without further purification. The following solvents and reagents were purified immediately prior to use as follows: Tetrahydrofuran (THF) was dried by passage through two columns of activated neutral alumina under argon. Toluene was dried by passage through activated neutral alumina and then Q5 reactant under argon. Methanol (MeOH) was passed through two columns of activated 3 Å molecular sieves. Dichloromethane (CH₂Cl₂) and triethylamine (Et₃N) were distilled from CaH₂. HMPA was distilled from CaH₂ and stored under argon in a flame dried round bottom flask. All solvents were deemed to contain less than 50 ppm H₂O by Karl Fisher coulometric moisture analysis. All reactions involving organometallic reagents or air sensitive compounds were conducted under an atmosphere of argon in oven-dried glassware. Flash chromatography was conducted according to the Still protocol¹ using ICN Biomedicals ICN-SILITech 32-63d silica gel with the indicated solvents. Melting points are uncorrected. All NMR spectra were taken on a 300 MHz instrument in deuterated chloroform (CDCl₃) unless otherwise indicated; ¹³C spectra were taken at 75 MHz unless otherwise indicated. Chemical shifts (δ) are expressed as ppm relative to tetramethylsilane (δ = 0.00 ppm) referenced to the residual protic solvent. Splitting patterns are designated as: s, singlet; d, doublet; t, triplet; q, quartet; p, pentet; hep, heptet; m, multiplet; comp, complex multiplet; br, broad; app, apparent. High resolution mass spectra were taken on VG Analytical ZAB2-E instrument. IR spectra were recorded as films or solutions (with solvent indicated) on sodium chloride plates on a Perkin-Elmer 1600 series FTIR.

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1. Still, W. C.; Kahn, M.; Mitra, A. *J. Org. Chem.* **1978**, *43*, 2923-2925.

CENS-188-1
 Solvent: CDCl₃
 Ambient temperature
 Unit: plus-300 "nmr2"
 PULSE SEQUENCE
 Relax. delay 1.000 sec
 Pulse 15.0 degrees
 Acq. time 3.819 sec
 Width 4186.4 Hz
 32 repetitions
 OBSERVE H1, 300.1350877 MHz
 DATA PROCESSING
 Line broadening 0.1 Hz
 FT size 32768
 Total time 2 minutes

CENS-284-1
 Solvent: CD3OD
 Ambient temperature
 UNITYplus-300 "nmr2"
 PULSE SEQUENCE
 Relax. delay 1.000 sec
 Pulse 40.0 degrees
 Acq. time 3.813 sec
 Width 4196.4 Hz
 32 Repetitions
 OBSERVE H1 300.1402161 MHz
 DATA PROCESSING
 Line broadening 0.1 Hz
 FT size 32768
 Total time 2 minutes

CENS-303-1
 Solvent: CDCl₃
 Ambient temperature
 UNITYplus-300 "nmr2"
 PULSE SEQUENCE
 Relax. delay 1.000 sec
 Pulse 15.0 degrees
 Acq. time 3.813 sec
 Width 4196.4 Hz
 8 repetitions
 OBSERVE H1, 300.1390375 MHz
 DATA PROCESSING
 Line broadening 0.1 Hz
 FT size 32768
 Total time 1 minute

14c

CEN3-192-1

Solvent: CDCl₃

Ambient temperature

UNITYplus-300 "nmr2"

PULSE SEQUENCE

Relax. delay 1.000 sec

Pulse 15.0 degrees

Acq. time 3.613 sec

Width 4186.4 Hz

8 repetitions

OBSERVE H1 300.1390380 MHz

DATA PROCESSING

Line broadening 0.1 Hz

FT size 32768

Total time 1 minute

CEN2-280-1

Solvent: CDCl₃
Ambient temperature
UNITYPUS-300 "nmr2"

PULSE SEQUENCE

Relax. delay 1.000 sec

Pulse 16.9 degrees

Acq. time 4.280 sec

Width 3730.0 Hz

32 repetitions

OBSERVE H1 300.1488074 MHz

DATA PROCESSING

Line broadening 0.1 Hz

FT size 32768

Total time 2 minutes

15b

CEM4-136-1
 Solvent: CDCl₃
 Ambient temperature
 UNITYplus-300 "nmr2"
 PULSE SEQUENCE
 Relax. delay 1.000 sec
 Pulse 15.0 degrees
 Acq. time 3.813 sec
 Width 4196.4 Hz
 32 repetitions
 OBSERVE H1, 300.1390377 MHz
 DATA PROCESSING
 Line broadening 0.1 Hz
 FT size 32768
 Total time 2 minutes

15c

TEMP = 373K

Current Data Parameters
 NAME cen5-39-1
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters

Date 810816
 Time 10.51
 PULPROG zg
 SOLVENT DMSO-d6
 A0 2.6542280 sec
 FIDRES 0.188380 Hz
 DW 81.0 usec
 RG 128
 NUCLEUS 1H
 HL 1 3 dB
 D1 2.0000000 sec
 P1 2.0 usec
 DE 101.3 usec
 SF01 499.878040 MHz
 SMH 6172.84 Hz
 ID 32768
 NS 32
 DS 2

F2 - Processing parameters

SI 32768
 SF 499.8772178 MHz
 WDW EM
 SSB 0
 LB 0.10 Hz
 GB 0
 PC 1.00

1D NMR plot parameters

CX 20.00 cm
 F1P 10.000 ppm
 F1 4998.77 Hz
 F2P -0.500 ppm
 F2 -249.94 Hz
 PPMCM 0.52500 ppm/cm
 HZCM 262.43555 Hz/cm

TEMP = 373K

Current Data Parameters
 NAME cen5-43-1
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date 810816
 Time 10.29
 PULPROG 29
 SOLVENT DMSO-d6
 AQ 2.6542280 sec
 FIDRES 0.188380 Hz
 DM 81.0 usec
 RG 128
 NUCLEUS 1H
 HL 1 3 dB
 D1 2.0000000 sec
 P1 2.0 usec
 DE 101.3 usec
 SFO1 499.8798040 MHz
 SMH 6172.84 Hz
 TD 32768
 NS 32
 DS 2

F2 - Processing parameters
 SI 32768
 SF 499.8772178 MHz
 WDW EM
 SSB 0
 LB 0.10 Hz
 GB 0
 PC 1.00

1D NMR plot parameters
 CX 20.00 cm
 F1P 10.000 ppm
 F1 4998.77 Hz
 F2P -0.500 ppm
 F2 -249.94 Hz
 PPMCM 0.52500 ppm/cm
 HZCM 262.43555 Hz/cm

Current Data Parameters
 NAME cen5-45-1
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters

Date 810816
 Time 11.13
 PULPROG zg
 SOLVENT DMSO-d6
 AQ 2.6542280 sec
 FIDRES 0.188380 Hz
 DM 81.0 usec
 RG 128
 NUCLEUS 1H
 HL 1
 D1 2.0000000 sec
 P1 2.0 usec
 DE 101.3 usec
 SFO1 499.8798040 MHz
 SMH 6172.84 Hz
 TD 32768
 NS 32
 DS 2

F2 - Processing parameters

SI 32768
 SF 499.8772178 MHz
 WDW EM
 SSB 0
 LB 0.10 Hz
 GB 0
 PC 1.00

1D NMR plot parameters

CX 20.00 cm
 F1P 10.000 ppm
 F1 4998.77 Hz
 F2P -0.500 ppm
 F2 -249.94 Hz
 PPMCM 0.52500 ppm/cm
 HZCM 262.43555 Hz/cm

CEN6-87-1

Pulse Sequence: s2pu1

Solvent: CDCl₃

Ambient temperature

Mercury-400BB "nmr6"

Relax. delay 2.000 sec

Pulse 15.9 degrees

Acq. time 2.856 sec

Width 5602.2 Hz

8 repetitions

OBSERVE H1, 400.2562954 MHz

DATA PROCESSING

Line broadening 0.1 Hz

FI size 32768

Total time 0 min, 0 sec

21

CEN4-71A-1

Solvent: CDCl₃
Ambient temperature
UNITYplus-300 "nmr2"

PULSE SEQUENCE

Relax. delay 1.000 sec
Pulse 15.0 degrees

Acq. time 8.813 sec
Width 4186.4 Hz

8 repetitions

OBSEVE H1 300.1380383 MHz
DATA PROCESSING

Line broadening 0.1 Hz
FT size 32768

Total time 1 minute

TEMP = 373K

Current Data Parameters
NAME cen5-239-1
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters

Date 820313
Time 10.00
PULPROG zg
SOLVENT DMSO-d6
AQ 2.6542280 sec
FIDRES 0.188380 Hz
DM 81.0 usec
RG 128
NUCLEUS 1H
HL 3 dB
D1 2.000000 sec
P1 2.0 usec
DE 101.3 usec
SF01 499.8798040 MHz
SMH 6172.84 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters

SI 32768
SF 499.8772178 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters

CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

TEMP = 373K

Current Data Parameters
NAME cen5-241-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date 820313
Time 13.02
PULPROG zg
SOLVENT DMSO-d6
AQ 2.3265481 sec
FIDRES 0.214913 Hz
DQ 71.0 usec
RG 128
NUCLEUS 1H
HL 3 dB
D1 2.0000000 sec
P1 2.0 usec
DE 113.6 usec
SFO1 499.879967 MHz
SMH 7042.25 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters
SI 32768
SF 499.8772177 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.52500 ppm/c
HZCM 262.43555 Hz/cm

CEN4-76A-1

Solvent: CDCl₃
Ambient temperature
UNITYplus-300 "nmr2"

PULSE SEQUENCE

Relax. delay 1.000 sec

Pulse 15.0 degrees

Acq. time 3.813 sec

Width 4186.4 Hz

8 repetitions

OBSERVE H1, 300.1390360 MHz

DATA PROCESSING

Line broadening 0.1 Hz

FT size 32768

Total time 1 minute

TEMP = 373K

29b

Current Data Parameters
NAME cen5-244-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date 820321
Time 14.28
PULPROG zg
SOLVENT DMSO-d6
AQ 2.6542280 sec
FIDRES 0.188380 Hz
DM 61.0 usec
RG 128
NUCLEUS 1H
HL1 3 dB
D1 2.0000000 sec
P1 2.0 usec
DE 101.3 usec
SF01 499.8798040 MHz
SMH 6172.84 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters

SI 32768
SF 499.8772180 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters

CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

TEMP = 373K

Current Data Parameters
NAME cen5-245-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date 820321
Time 15.01
PULPROG zg
SOLVENT DMSO-d6
AQ 2.6542280 sec
FIDRES 0.168380 Hz
DM 81.0 usec
RG 128
NUCLEUS 1H
HL1 3 dB
D1 2.000000 sec
P1 2.0 usec
DE 101.3 usec
SF01 499.8798040 MHz
SKH 6172.84 Hz
TO 32768
NS 32
DS 2

F2 - Processing parameters
SI 32768
SF 499.8772180 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

TEMP = 363K

29d

Current Data Parameters
NAME cen5-150-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date 820718
Time 10.34
PULPROG zg
SOLVENT TOLUENE-d8
AQ 2.7197633 sec
FIDRES 0.183841 Hz
DM 83.0 usec
RG 256
NUCLEUS 1H
HL1 3 dB
D1 2.000000 sec
P1 2.0 usec
DE 103.8 usec
SF01 499.8800609 MHz
SMH 6024.10 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters
SI 32768
SF 499.8774250 MHz
MDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.52500 ppm/cm
HZCM 262.43564 Hz/cm

cen5-134-1

expi szpu1

SAMPLE DEC. 8 VT
 date Sep 26 2001 dfrq 489.349
 solvent CDC13 dn H1
 file exp 30
 ACQUISITION
 sfrq 489.350 dm 0
 tn H1 dnm nnn
 at 4.864 dmf 200
 np 92864 dseq 1.0
 sw 9345.4 dres 1.0
 fb 5000 homo 27.0
 bs 32 temp
 tpwr 54 PROCESSING 0.10
 pw 2.0 lb
 d1 2.000 wfile
 tof 1064.6 proc ft
 nt 64 fn not used f
 ct 64 math
 alock n
 gain 40
 11 flags
 11 n
 in n
 dp y
 hs nn
 DISPLAY
 sp -248.7
 vp 7739.7
 vs 143
 sc 0
 wc 240
 h2m 32.25
 16 3171.74
 rfi 1214.3
 rfp 0
 th 2
 ine 2.000
 al cdc ph

TEMP = 373K

Current Data Parameters
NAME cen5-190-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date 820502
Time 9.46
PULPROG zg
SOLVENT DMSO-d6
AQ 2.4248519 sec
FIDRES 0.206200 Hz
DM 74.0 usec
RG 128
NUCLEUS 1H
HL 3 dB
D1 2.0000000 sec
P1 2.0 usec
DE 92.5 usec
SF01 499.8799280 MHz
SMH 6756.76 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters

SI 32768
SF 499.8772178 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 0.70

1D NMR plot parameters

CX 20.00 cm
F1P 11.000 ppm
F1 5498.65 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.57500 ppm/cm
HZCM 287.42941 Hz/cm

TEMP = 373K

Current Data Parameters
 NAME cen5-211-1
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters

Date 820416
 Time 9.19
 PULPROG zg
 SOLVENT DMSO-d6
 AQ 2.5542280 sec
 FIDRES 0.189380 Hz
 DM 81.0 usec
 RG 128
 NUCLEUS 1H
 HL1 3 dB
 D1 2.0000000 sec
 P1 2.0 usec
 DE 101.3 usec
 SFO1 499.8798040 MHz
 SMH 6172.84 Hz
 TD 32768
 NS 32
 DS 2

F2 - Processing parameters

SI 32768
 SF 499.8772178 MHz
 MDW EM
 SSB 0
 LB 0.10 Hz
 GB 0
 PC 1.00

1D NMR plot parameters

CX 20.00 cm
 F1P 11.000 ppm
 F1 5498.65 Hz
 F2P -0.500 ppm
 F2 -249.94 Hz
 PPMCM 0.57500 ppm/cm
 HZCM 287.42941 Hz/cm

TEMP = 373K

Current Data Parameters
NAME cen6-68-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date 820822

Time 8.51

PULPROG zg

SOLVENT DMSO-d6

AG 2.4576199 sec

FIDRES 0.203451 Hz

DW 75.0 usec

RG 128

NUCLEUS 1H

HL 1 3 dB

D1 2.000000 sec

P1 2.0 usec

DE 93.8 usec

SFO1 499.879373 MHz

SWH 6666.67 Hz

TD 32768

NS 32

DS 2

F2 - Processing parameters

SF 32768

SC 499.8772190 MHz

WDW EM

SSB 0

LB 0.10 Hz

GB 0

PC 1.00

1D NMR plot parameters

CX 20.00 cm

F1P 11.000 ppm

F1 5498.65 Hz

F2P -0.500 ppm

F2 -249.94 Hz

PPMCM 0.57500 ppm/cm

HZCM 287.42941 Hz/cm

TEMP = 373K

17a

Current Data Parameters
NAME cen5-107-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date 820412
Time 9.05
PULPROG zg
SOLVENT DMSO-d6
AQ 2.654280 sec
FIDRES 0.168380 Hz
DM 81.0 usec
RG 128
NUCLEUS 1H
HL1 3 dB
D1 2.000000 sec
P1 2.0 usec
DE 101.3 usec
SF01 499.8798040 MHz
SMH 6172.84 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters

SI 32768
SF 499.8772180 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters

CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

TEMP = 373K

Current Data Parameters
NAME cen5-125-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date 820412
Time 9.28
PULPROG zg
SOLVENT DMSO-d6
AQ 2.6542280 sec
FIDRES 0.188380 Hz
DM 81.0 usec
RG 128
NUCLEUS 1H
HL 1 3 dB
D1 2.0000000 sec
P1 2.0 usec
DE 101.3 usec
SFO1 499.8798040 MHz
SMH 6172.84 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters
SI 32768
SF 499.8772180 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

The chemical structure of the ligand 1,1'-bis(4-phenyl)-2,2'-bis(methyleneoxy)ethane-1,2-dithiolane is shown. It consists of a central 1,2-ethanedithiolane ring substituted with two 4-phenylmethoxy groups. The atoms are numbered as follows: the sulfur atoms are 1 and 11; the ethylene carbons are 2 and 7; the methylene carbons of the ether linkages are 12 and 13; the phenyl rings are numbered 14-19 and 15-20 respectively.

PPMCM	0.32300 ppm/cm
HZCM	262.43555 Hz/cm

S29

PPMCM	0.3250 ppm/cm
HZCM	262.4355 Hz/cm

TEMP = 373K

30a

Current Data Parameters
NAME cen5-14a-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date 820416
Time 8.35
PULPROG zg
SOLVENT DMSO-d6
AQ 2.6542280 sec
FIDRES 0.188380 Hz
DM 81.0 usec
RG 128
NUCLEUS 1H
HL1 3 dB
D1 2.000000 sec
P1 2.0 usec
DE 101.3 usec
SF01 499.8798040 MHz
SMH 6172.84 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters

SI 32768
SF 499.8772178 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters

CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCH 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

TEMP = 373K

30b

Current Data Parameters
NAME cens-249-2
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date 820402
Time 13.56
PULPROG zg
SOLVENT DMSO-d6
AQ 2.6542280 sec
FIDRES 0.188380 Hz
DM 81.0 usec
RG 128
NUCLEUS 1H
HL 1 3 dB
D1 2.0000000 sec
P1 2.0 usec
DE 101.3 usec
SFO1 499.8798040 MHz
SMH 6172.84 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters
SI 32768
SF 499.8772180 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCH 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

TEMP = 373K

30c

Current Data Parameters
NAME cen5-252-2
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date 820408
Time 8.02
PULPROG zg
SOLVENT DMSO-d6
AQ 2.6542280 sec
FIDRES 0.188380 Hz
DM 81.0 usec
RG 128
NUCLEUS 1H
HL 1 3 dB
D1 2.000000 sec
P1 2.0 usec
DE 101.3 usec
SF01 499.8798040 MHz
SMH 6172.84 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters
SI 32768
SF 499.8772178 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

TEMP = 373K

Current Data Parameters
NAME cen5-153-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date 820516
Time 11.17
PULPROG zg
SOLVENT DMSO-d6
AQ 2.4576199 sec
FIDRES 0.203451 Hz
DQ 75.0 usec
RG 128
NUCLEUS 1H
HL1 3 dB
D1 2.000000 sec
P1 2.0 usec
DE 93.8 usec
SF01 499.879876 MHz
SMH 6666.67 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters
SI 32768
SF 499.8772178 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 0.50

1D NMR plot parameters
CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCH 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

TEMP = 323K

32

Current Data Parameters
NAME cen5-155-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date 820415
Time 8.42
PULPROG zg
SOLVENT DMSO-d6
AQ 2.6542280 sec
FIDRES 0.188380 Hz
DQ 81.0 usec
RG 128
NUCLEUS 1H

HL1 3 dB
D1 2.000000 sec
P1 2.0 usec
DE 101.3 usec
SFO1 499.8798040 MHz
SWH 6172.84 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters

SI 32768
SF 499.8772190 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters

CX 20.00 cm
F1P 10.000 ppm
F1 4998.77 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.52500 ppm/cm
HZCM 262.43555 Hz/cm

TEMP = 373K

43

Current Data Parameters
NAME cens-259-1
EXPNO 6
PROCNO 1

F2 - Acquisition Parameters
Date 820515
Time 17.04

PULPROG zg

SOLVENT DMSO-d6

AD 2.4576199 sec

FIDRES 0.203451 Hz

DM 75.0 usec

RG 128

NUCLEUS 1H

HL1 3 dB

D1 2.0000000 sec

P1 2.0 usec

DE 93.8 usec

SFO1 499.8799876 MHz

SMH 6666.67 Hz

TD 32768

NS 32

DS 2

F2 - Processing parameters
SI 32768
SF 499.8772180 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters

CX 20.00 cm

F1P 11.000 ppm

F1 5498.65 Hz

F2P -0.500 ppm

F2 -249.94 Hz

PPMCM 0.57500 ppm/cm

HZCM 287.42941 Hz/cm

TEMP = 373K

Current Data Parameters
NAME cen6-74-1
EXPNO 3
PROCNO 1

F2 - Acquisition Parameters

Date 820828
Time 10.53
PULPROG zg
SOLVENT DMSO-d6
AQ 2.3265481 sec
FIDRES 0.214913 Hz
DM 71.0 usec
RG 128
NUCLEUS 1H
HL 1
D1 2.0000000 sec
P1 2.0 usec
DE 101.4 usec
SFO1 499.8800021 MHz
SMH 7042.25 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters

SI 32768
SF 499.8772178 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters

CX 20.00 cm
F1P 11.000 ppm
F1 5498.65 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.57500 ppm/cm
HZCM 287.42941 Hz/cm

TEMP = 373K

47

Current Data Parameters
NAME cen6-101-1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date 821121
Time 16.06
PULPROG 29
SOLVENT DMSO-d6
AQ 2.3593161 sec
FIDRES 0.211928 Hz
DM 72.0 usec
RG 128
NUCLEUS 1H
HL1 3 dB
D1 2.000000 sec
P1 2.0 usec
DE 90.0 usec
SF01 499.8801329 MHz
SMH 6944.44 Hz
TD 32768
NS 32
DS 2

F2 - Processing parameters

SI 32768
SF 499.8772178 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters

CX 20.00 cm
F1P 11.000 ppm
F1 5498.65 Hz
F2P -0.500 ppm
F2 -249.94 Hz
PPMCM 0.57500 ppm/cm
HZCM 287.42941 Hz/cm