Supporting Information (Part 2)

Transition Metal-Catalyzed Hydro-, Sila-, and Stannastannation of Cyclopropenes: Stereo- and Regioselective Approach Toward Multisubstituted Cyclopropyl Synthons

Marina Rubina, Michael Rubin and Vladimir Gevorgyan*

*Department of Chemistry, University of Illinois at Chicago.
845 West Taylor Street, Chicago, Illinois, 60607-7061*

Current Data Parameters

NAME mr0667

EXPNO 1

PROCNO 1

F2 - Acquisition Parameters

Date_ 20020118

Time 17.17

INSTRUM spect

PROBHD 5 mm BBO BB-1

PULPROG zg

TD 16384

SOLVENT CDC13

NS 8

DS 2

SWH 4789.272 Hz

FIDRES 0.292314 Hz

RG 1.7105396 sec

AG 16

DM 104.400 usec

DE 5.00 usec

TE 300.0 K

D1 1.00000000 sec

P1 5.50 usec

SFO1 400.1342000 MHz

NUC1 1H

PL1 -3.00 dB

F2 - Processing parameters

SI 8192

SF 400.1320090 MHz

WDW EM

SSB 0

LB 0.10 Hz

GB 0

PC 1.00

1D NMR plot parameters

CX 20.00 cm

F1P 10.100 ppm

F1 4041.33 Hz

F2P -0.100 ppm

F2 -40.01 Hz

PPMCM 0.51000 ppm/cm

HZCM 204.06735 Hz/cm

Current Data Parameters

NAME mr0667

EXPNO 2

PROCNO 1

F2 - Acquisition Parameters

Date_ 20020118

Time 17.21

INSTRUM spect

PROBHD 5 mm BBO BB-1

PULPROG zgpg

TD 32768

SOLVENT CDC13

NS 128

DS 2

SWH 24154.590 Hz

FIDRES 0.737140 Hz

RG 0.6783476 sec

AG 4096

DM 20.700 usec

DE 29.57 usec

TE 300.0 K

d11 0.03000000 sec

d12 0.00002000 sec

PL13 19.00 dB

D1 2.00000000 sec

CPDPRG2 waltz16

PCPD2 75.00 usec

SFO2 400.1342220 MHz

NUC2 1H

PL2 120.00 dB

PL12 16.00 dB

P1 3.00 usec

SFO1 100.6242960 MHz

NUC1 13C

PL1 6.00 dB

F2 - Processing parameters

SI 32768

SF 100.6132740 MHz

WDW EM

SSB 0

LB 3.00 Hz

GB 0

PC 1.40

1D NMR plot parameters

CX 20.00 cm

F1P 161.000 ppm

F1 16211.00 Hz

F2P -1.000 ppm

F2 -100.61 Hz

PPMCM 9.10000 ppm/cm

HZCM 915.58091 Hz/cm

Current Data Parameters
NAME mr0668
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20020123
Time 17.27
INSTRUM spect
PROBHD 5 mm BBO BB-1
PULPROG zg
TD 32768
SOLVENT CDCl3
NS 8
DS 2
SWH 6009.615 Hz
FIDRES 0.183399 Hz
AQ 2.7263477 sec
RG 32
DM 83.200 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
P1 5.00 usec
SFO1 500.1327507 MHz
NUC1 1H
PL1 3.00 dB

F2 - Processing parameters
SI 16384
SF 500.1300130 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 20.00 cm
F1P 10.100 ppm
F1 5051.31 Hz
F2P -0.100 ppm
F2 -50.01 Hz
PPMCM 0.51000 ppm/cm
HZCM 255.06631 Hz/cm

Current Data Parameters
NAME mr0668
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20020123
Time 17.38
INSTRUM spect
PROBHD 5 mm BBO BB-1
PULPROG zgpg
TD 32768
SOLVENT CDCl3
NS 128
DS 2
SWH 30303.031 Hz
FIDRES 0.924775 Hz
AQ 0.5407220 sec
RG 11585.2
DM 16.500 usec
DE 6.00 usec
TE 300.0 K
d11 0.03000000 sec
d12 0.00002000 sec
PL13 22.00 dB
D1 2.00000000 sec
CPDPRG2 waltz16
PCPD2 80.00 usec
SFO2 500.1320000 MHz
NUC2 13C
PL2 3.00 dB
PL12 22.00 dB
P1 3.60 usec
SFO1 125.7715724 MHz
NUC1 13C
PL1 3.00 dB

F2 - Processing parameters
SI 32768
SF 125.7577390 MHz
WDW EM
SSB 0
LB 3.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 20.00 cm
F1P 181.000 ppm
F1 22762.15 Hz
F2P -1.000 ppm
F2 -125.76 Hz
PPMCM 9.10000 ppm/cm
HZCM 1144.39539 Hz/cm

Current Data Parameters

NAME m0693
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date_ 20020328
Time 19.19
INSTRUM spect
PROBHD 5 mm BBO BB-1
PULPROG zg
TD 16384
SOLVENT CDCl3
NS 32
DS 2
SWH 4789.272 Hz
FIDRES 0.252314 Hz
AQ 1.7105396 sec
RG 8
DM 104.400 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
P1 5.50 usec
SFO1 400.1342000 MHz
NUC1 1H
PL1 -3.00 dB

F2 - Processing parameters

SI 8192
SF 400.1320090 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters

CX 20.00 cm
F1P 10.100 ppm
F1 4041.33 Hz
F2P -0.100 ppm
F2 -40.01 Hz
PPMCM 0.51000 ppm/cm
HZCM 204.06735 Hz/cm

Current Data Parameters

NAME m0693
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters

Date_ 20020328
Time 19.28
INSTRUM spect
PROBHD 5 mm BBO BB-1
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 128
DS 2
SWH 24154.590 Hz
FIDRES 0.737140 Hz
AQ 0.6783476 sec
RG 6502
DM 20.700 usec
DE 29.57 usec
TE 300.0 K
D11 0.03000000 sec
D12 0.00002000 sec
PL13 19.00 dB
D1 2.00000000 sec
CPDPRG2 waltz16
PCPD2 75.00 usec
SFO2 400.1342220 MHz
NUC2 13C
PL2 120.00 dB
PL12 15.00 dB
P1 3.00 usec
SFO1 100.6242960 MHz
NUC1 13C
PL1 6.00 dB

F2 - Processing parameters

SI 32768
SF 100.6132740 MHz
WDW EM
SSB 0
LB 3.00 Hz
GB 0
PC 1.40

1D NMR plot parameters

CX 20.00 cm
F1P 181.000 ppm
F1 18211.00 Hz
F2P -1.000 ppm
F2 -100.61 Hz
PPMCM 9.10000 ppm/cm
HZCM 915.58081 Hz/cm

Current Data Parameters
 NAME mr0677
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20020219
 Time 13.12
 INSTRUM spect
 PROBHD 5 mm BBO BB-1
 PULPROG zg
 TD 32768
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 6009.615 Hz
 FIDRES 0.163399 Hz
 AQ 2.7263477 sec
 RG 32
 DW 83.200 usec
 DE 6.00 usec
 TE 300.0 K
 D1 1.00000000 sec
 P1 5.00 usec
 SF01 500.1317505 MHz
 NUC1 ¹H
 PL1 3.00 dB

F2 - Processing parameters
 SI 16384
 SF 500.1300130 MHz
 WDW EM
 SSB 0
 LB 0.20 Hz
 GB 0
 PC 1.00

1D NMR plot parameters
 CX 20.00 cm
 F1P 9.482 ppm
 F1 4742.26 Hz
 F2P -2.534 ppm
 F2 -1267.35 Hz
 PPMCM 0.60081 ppm/cm
 HZCM 300.48077 Hz/cm

Current Data Parameters
 NAME mr0677
 EXPNO 3
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20020219
 Time 13.25
 INSTRUM spect
 PROBHD 5 mm BBO BB-1
 PULPROG zgpg
 TD 32768
 SOLVENT CDCl3
 NS 256
 DS 2
 SWH 30303.031 Hz
 FIDRES 0.924775 Hz
 AQ 0.5407220 sec
 RG 8192
 DW 16.500 usec
 DE 6.00 usec
 TE 300.0 K
 d11 0.03000000 sec
 d12 0.00002000 sec
 PL13 22.00 dB
 D1 2.00000000 sec
 CPDPRG2 waltz16
 PCPD02 80.00 usec
 SF02 500.1320000 MHz
 NUC2 ¹³C
 PL2 3.00 dB
 PL12 22.00 dB
 P1 3.80 usec
 SF01 125.7715724 MHz
 NUC1 ¹³C
 PL1 3.00 dB

F2 - Processing parameters
 SI 32768
 SF 125.7577390 MHz
 WDW EN
 SSB 0
 LB 3.00 Hz
 GB 0
 PC 1.40

1D NMR plot parameters
 CX 20.00 cm
 F1P 181.000 ppm
 F1 22762.15 Hz
 F2P -1.000 ppm
 F2 -125.76 Hz
 PPMCM 9.10000 ppm/cm
 HZCM 1144.39539 Hz/cm

Current Data Parameters

NAME: mur0405
EXPNO: 1
PROCNO: 1

F2 - Acquisition Parameters

Date_: 20020122
Time: 12.16
INSTRUM: spect
PROBHD: 5 mm BBO BB-1
PULPROG: zg
TD: 32768
SOLVENT: CDCl3
NS: 8
DS: 2
SWH: 6009.615 Hz
FIDRES: 0.183399 Hz
AQ: 2.7263477 sec
RG: 8
DW: 83.200 usec
DE: 6.00 usec
TE: 300.0 K
D1: 1.00000000 sec
P1: 5.00 usec
SFO1: 500.132750 MHz
NUC1: 1H
PL1: 3.00 dB

F2 - Processing parameters

SI: 16384
SF: 500.1300130 MHz
WDW: EM
SSB: 0
LB: 0.20 Hz
GB: 0
PC: 1.00

1D NMR plot parameters

CX: 20.00 cm
F1P: 10.100 ppm
F1: 5051.31 Hz
F2P: -0.100 ppm
F2: -50.01 Hz
PPMCM: 0.51000 ppm/cm
HZCM: 255.06631 Hz/cm

Current Data Parameters

NAME: mur0405
EXPNO: 2
PROCNO: 1

F2 - Acquisition Parameters

Date_: 20020122
Time: 12.34
INSTRUM: spect
PROBHD: 5 mm BBO BB-1
PULPROG: zgpg
TD: 32768
SOLVENT: CDCl3
NS: 256
DS: 2
SWH: 30303.031 Hz
FIDRES: 0.924775 Hz
AQ: 0.5407220 sec
RG: 4096
DW: 16.500 usec
DE: 6.00 usec
TE: 300.0 K
d11: 0.03000000 sec
d12: 0.00002000 sec
PL13: 22.00 dB
D1: 2.00000000 sec
CPDPRG2: waltz16
PCPD2: 80.00 usec
SFO2: 500.1320000 MHz
NUC2: 13C
PL2: 3.00 dB
PL12: 22.00 dB
P1: 3.80 usec
SFO1: 125.7715724 MHz
NUC1: 13C
PL1: 3.00 dB

F2 - Processing parameters

SI: 32768
SF: 125.7577390 MHz
WDW: EM
SSB: 0
LB: 3.00 Hz
GB: 0
PC: 1.40

1D NMR plot parameters

CX: 20.00 cm
F1P: 181.000 ppm
F1: 22762.15 Hz
F2P: -1.000 ppm
F2: -125.76 Hz
PPMCM: 9.10000 ppm/cm
HZCM: 1144.39539 Hz/cm

Current Data Parameters
NAME mur0403
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20020117
Time 17.34
INSTRUM spect
PROBHD 5 mm BBO BB-1
PULPROG zg
TD 32768
SOLVENT CDCl3
NS 8
DS 2
SWH 6009.615 Hz
FIDRES 0.183399 Hz
AQ 2.7263477 sec
RG 16
DW 83.200 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
P1 5.00 usec
SF01 500.1327507 MHz
NUC1 1H
PL1 3.00 dB

F2 - Processing parameters
SI 16384
SF 500.1300130 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 20.00 cm
F1P 10.100 ppm
F1 5051.31 Hz
F2P -0.100 ppm
F2 -50.01 Hz
PPMCM 0.51000 ppm/cm
HZCM 255.06631 Hz/cm

Current Data Parameters
NAME mur0403
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20020117
Time 17.47
INSTRUM spect
PROBHD 5 mm BBO BB-1
PULPROG zgpg
TD 32768
SOLVENT CDCl3
NS 256
DS 2
SWH 30303.031 Hz
FIDRES 0.924775 Hz
AQ 0.5407220 sec
RG 8192
DW 15.500 usec
DE 6.00 usec
TE 300.0 K
d11 0.03000000 sec
d12 0.00002000 sec
PL13 22.00 dB
D1 2.00000000 sec
CPDPRG2 waltz16
PCPD2 80.00 usec
SF02 500.1320000 MHz
NUC2 13C
PL2 3.00 dB
PL12 22.00 dB
P1 3.80 usec
SF01 125.7715724 MHz
NUC1 13C
PL1 3.00 dB

F2 - Processing parameters
SI 32768
SF 125.7577390 MHz
WDW EM
SSB 0
LB 3.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 20.00 cm
F1P 181.000 ppm
F1 22762.15 Hz
F2P -1.000 ppm
F2 -125.76 Hz
PPMCM 9.10000 ppm/cm
HZCM 1144.39539 Hz/cm

Current Data Parameters
NAME mur0517
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20020522
Time 18.21
INSTRUM spect
PROBHD 5 mm BBO BB-1
PULPROG zg
TD 32768
SOLVENT CDC13
NS 8
DS 2
SWH 6009.615 Hz
FIDRES 0.163399 Hz
AQ 2.7263477 sec
RG 32
DM 83.200 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
P1 5.00 usec
SFO1 500.1322506 MHz
NUC1 1H
PL1 3.00 dB

F2 - Processing parameters
SI 16384
SF 500.1300130 MHz
WDW EM
SSB 0
LB 0.20 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 20.00 cm
F1P 9.100 ppm
F1 4551.18 Hz
F2P -1.100 ppm
F2 -550.14 Hz
PPMCM 0.51000 ppm/cm
HZCM 255.06631 Hz/cm

Current Data Parameters
NAME mur0517
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20020522
Time 18.28
INSTRUM spect
PROBHD 5 mm BBO BB-1
PULPROG zgpg
TD 32768
SOLVENT CDC13
NS 128
DS 2
SWH 30303.031 Hz
FIDRES 0.924775 Hz
AQ 0.5407220 sec
RG 8192
DM 16.500 usec
DE 6.00 usec
TE 300.0 K
d11 0.03000000 sec
d12 0.00002000 sec
PL13 22.00 dB
D1 2.00000000 sec
CPDPRG2 waltz16
PCPD2 80.00 usec
SFO2 500.1320000 MHz
NUC2 1H
PL2 3.00 dB
PL12 22.00 dB
P1 3.60 usec
SFO1 125.7690572 MHz
NUC1 13C
PL1 3.00 dB

F2 - Processing parameters
SI 32768
SF 125.757390 MHz
WDW EM
SSB 0
LB 3.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 20.00 cm
F1P 190.167 ppm
F1 23913.67 Hz
F2P -18.483 ppm
F2 -2324.32 Hz
PPMCM 10.43196 ppm/cm
HZCM 1311.89941 Hz/cm

Current Data Parameters

NAME: mur0400
EXPNO: 1
PROCNO: 1

F2 - Acquisition Parameters

Date_: 20020114
Time: 11:20
INSTRUM: spect
PROBHD: 5 mm BBO BB-1
PULPROG: zg
TO: 32768
SOLVENT: CDC13
NS: 8
DS: 2
SWH: 6009.615 Hz
FIDRES: 0.183399 Hz
AQ: 2.7263477 sec
RG: 16
DW: 83.200 usec
DE: 6.00 usec
TE: 300.0 K
D1: 1.00000000 sec
P1: 5.00 usec
SF01: 500.1327507 MHz
NUC1: ¹H
PL1: 3.00 dB

F2 - Processing parameters

SI: 16384
SF: 500.1300130 MHz
WDW: EM
SSB: 0
LB: 0.20 Hz
GB: 0
PC: 1.00

1D NMR plot parameters

CX: 20.00 cm
F1P: 10.100 ppm
F1: 5051.31 Hz
F2P: -0.100 ppm
F2: -50.01 Hz
PPMCM: 0.51000 ppm/cm
HZCM: 255.06631 Hz/cm

Current Data Parameters

NAME: mur0400
EXPNO: 2
PROCNO: 1

F2 - Acquisition Parameters

Date_: 20020114
Time: 11:38
INSTRUM: spect
PROBHD: 5 mm BBO BB-1
PULPROG: zgpg
TO: 32768
SOLVENT: CDC13
NS: 256
DS: 2
SWH: 30303.031 Hz
FIDRES: 0.924775 Hz
AQ: 0.5407220 sec
RG: 8192
DW: 16.500 usec
DE: 6.00 usec
TE: 300.0 K
d11: 0.03000000 sec
d12: 0.00002000 sec
PL13: 22.00 dB
D1: 2.00000000 sec
CPDPRG2: waltz16
PCPD2: 80.00 usec
SF02: 500.1320000 MHz
NUC2: ¹³C
PL2: 3.00 dB
PL12: 22.00 dB
P1: 3.80 usec
SF01: 125.7715724 MHz
NUC1: ¹³C
PL1: 3.00 dB

F2 - Processing parameters

SI: 32768
SF: 125.7577350 MHz
WDW: EM
SSB: 0
LB: 3.00 Hz
GB: 0
PC: 1.40

1D NMR plot parameters

CX: 20.00 cm
F1P: 181.000 ppm
F1: 22762.15 Hz
F2P: -1.000 ppm
F2: -125.76 Hz
PPMCM: 9.10000 ppm/cm
HZCM: 1144.39539 Hz/cm

Current Data Parameters

NAME: mur0406
EXPNO: 1
PROCNO: 1

F2 - Acquisition Parameters

Date_: 20020129
Time: 10.56
INSTRUM: spect
PROBHD: 5 mm BBO BB-1
PULPROG: zg
TD: 32768
SOLVENT: CDCl3
NS: 8
DS: 2
SWH: 6009.615 Hz
FIDRES: 0.163399 Hz
AQ: 2.7263477 sec
RG: 32
DW: 83.200 usec
DE: 6.00 usec
TE: 300.0 K
D1: 1.00000000 sec
P1: 5.00 usec
SF01: 500.1327507 MHz
NUC1: ¹H
PL1: 3.00 dB

F2 - Processing parameters

SI: 16384
SF: 500.1300130 MHz
WDW: EM
SSB: 0
LB: 0.20 Hz
GB: 0
PC: 1.00

1D NMR plot parameters

CX: 20.00 cm
F1P: 10.100 ppm
F1: 5051.31 Hz
F2P: -0.100 ppm
F2: -50.01 Hz
PPMCM: 0.51000 ppm/cm
HZCM: 255.06631 Hz/cm

Current Data Parameters

NAME: mur0406
EXPNO: 2
PROCNO: 1

F2 - Acquisition Parameters

Date_: 20020129
Time: 11.08
INSTRUM: spect
PROBHD: 5 mm BBO BB-1
PULPROG: zgpg
TD: 32768
SOLVENT: CDCl3
NS: 256
DS: 2
SWH: 30303.031 Hz
FIDRES: 0.924775 Hz
AQ: 0.5407220 sec
RG: 8192
DW: 16.500 usec
DE: 6.00 usec
TE: 300.0 K
d11: 0.03000000 sec
d12: 0.00002000 sec
PL13: 22.00 dB
D1: 2.00000000 sec
CPOPRG2: waltz16
PCPD2: 80.00 usec
SF02: 500.1320000 MHz
NUC2: ¹³C
PL2: 3.00 dB
PL12: 22.00 dB
P1: 3.80 usec
SF01: 125.7715724 MHz
NUC1: ¹³C
PL1: 3.00 dB

F2 - Processing parameters

SI: 32768
SF: 125.7577390 MHz
WDW: EM
SSB: 0
LB: 3.00 Hz
GB: 0
PC: 1.40

1D NMR plot parameters

CX: 20.00 cm
F1P: 181.000 ppm
F1: 22762.15 Hz
F2P: -1.000 ppm
F2: -125.76 Hz
PPMCM: 9.10000 ppm/cm
HZCM: 1144.39539 Hz/cm

Current Data Parameters
NAME: mur0408#1
EXPNO: 1
PROCNO: 1

F2 - Acquisition Parameters
Date_: 20020130
Time: 11.26
INSTRUM: spect
PROBHD: 5 mm BBO BB-1
PULPROG: zg
TD: 32768
SOLVENT: CDCl3
NS: 8
DS: 2
SWH: 6009.615 Hz
FIDRES: 0.183399 Hz
AQ: 2.7263477 sec
RG: 16
DW: 83.200 usec
DE: 6.00 usec
TE: 300.0 K
D1: 1.00000000 sec
P1: 5.00 usec
SF01: 500.1317505 MHz
NUC1: 1H
PL1: 3.00 dB

F2 - Processing parameters
SI: 16384
SF: 500.1300130 MHz
WDW: EM
SSB: 0
LB: 0.20 Hz
GB: 0
PC: 1.00

1D NMR plot parameters
CX: 20.00 cm
F1P: 9.482 ppm
F1: 4742.26 Hz
F2P: -2.534 ppm
F2: -1267.35 Hz
PPMCM: 0.60081 ppm/cm
HZCM: 300.48077 Hz/cm

Current Data Parameters
NAME: mur0408#1
EXPNO: 2
PROCNO: 1

F2 - Acquisition Parameters
Date_: 20020130
Time: 11.32
INSTRUM: spect
PROBHD: 5 mm BBO BB-1
PULPROG: zgpg
TD: 32768
SOLVENT: CDCl3
NS: 256
DS: 2
SWH: 30303.031 Hz
FIDRES: 0.924775 Hz
AQ: 0.5407220 sec
RG: 8192
DW: 15.500 usec
DE: 6.00 usec
TE: 300.0 K
d11: 0.03000000 sec
d12: 0.00002000 sec
PL13: 22.00 dB
D1: 2.00000000 sec
PCPDG2: waltz16
PCPD2: 80.00 usec
SF02: 500.1320000 MHz
NUC2: 13C
PL2: 3.00 dB
PL12: 22.00 dB
P1: 3.80 usec
SF01: 125.7715724 MHz
NUC1: 13C
PL1: 3.00 dB

F2 - Processing parameters
SI: 32768
SF: 125.7577390 MHz
WDW: EM
SSB: 0
LB: 3.00 Hz
GB: 0
PC: 1.40

1D NMR plot parameters
CX: 20.00 cm
F1P: 181.000 ppm
F1: 22762.15 Hz
F2P: -1.000 ppm
F2: -125.76 Hz
PPMCM: 9.10000 ppm/cm
HZCM: 1144.39539 Hz/cm