Supporting Information for:

A New Efficient Route to 4a-Methyltetrahydrofluorenes: A Total Synthesis of (±)-Dichroanal B via Intramolecular Heck Reaction

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General Experimental

¹H NMR spectra were obtained with tetramethylsilane as an internal standard. ¹³C NMR spectra were obtained with CDCl₃ as an internal standard. Flash column chromatography was performed by using Silica Gel 60N as a solid support of immobile phase. Kieselgel 60 F-254 plates were used for thin layer chromatography (TLC). Unless purification with silica gel gave compound being pure enough, the compounds were further treated with a recycle HPLC. Compound **15** was purchased from TCI Japan (Tokyo Kasei Kogyo Co. Ltd.)

Experimental Procedures

Model reaction of intramolecular Heck cyclization:

1,1,4a-Trimethyl-2,4a-dihydro-1H-fluorene (**13a**) and 1,1,4a-Trimethyl-4,4a-dihydro-1H-fluorene (**13b**)

To a suspension of 2-[2,6,6-trimethylcyclohex-2-en-(Z)-ylidenemethyl]phenyl trifluoromethanesulfonate **12** (355 mg, 0.99 mmol, Z/E 87/13), potassium carbonate (681 mg, 4.93 mmol) and 1,3-bis(diphenylphosphino)propane (123 mg, 0.30 mmol) in acetonitrile (10 mL) was added palladium acetate (33.2 mg, 0.15 mmol). The mixture was stirred for 15 minutes at room temperature and 18 hours at 60 °C. After the reaction mixture was quenched with water and extracted with chloroform, the organic phase was washed with water and brine, dried over anhydrous sodium sulfate, and concentrated under reduced pressure. The crude product was purified by chromatography on silica gel (hexane), providing a mixture of **13a,b** (165 mg, 92% from the Z isomer of **12**, **13a/13b** 20/80) which was used for a next reaction without further purification. However, for structural clarification, the mixture was separated once again by chromatography on silica gel (hexane) into **13a** and **13b**.

13a: ¹H NMR (CDCl₃): δ 1.35 (s, 3H), 1.36 (s, 3H), 1.44 (s, 3H), 1.47 (dt, *J* = 2.3, 17.0 Hz, 1H), 2.20 (ddd, *J* = 1.3, 5.0, 17.2 Hz, 1H), 5.56 (ddd, *J* = 2.6, 4.9, 9.7 Hz, 1H), 6.04 (ddd, *J* = 0.7, 2.7, 9.7 Hz, 1H), 6.42 (s, 1H), 7.12 (td, *J* = 1.4, 7.3 Hz, 1H), 7.17 (td, *J* = 1.3, 7.3 Hz, 1H), 7.25 (d, *J* = 7.2 Hz, 1H), 7.30 (d, *J* = 7.3 Hz, 1H). ¹³C NMR (CDCl₃): δ 26.8, 27.1, 29.4, 35.2, 43.4, 53.3, 120.8, 121.2, 121.3, 124.4, 125.2, 126.7, 131.6, 142.3, 152.7, 163.5. IR (CHCl₃, cm⁻¹): 3007, 2964, 1603, 1466.

13b: ¹H NMR (CDCl₃): δ 1.30 (s, 3H), 1.31 (s, 3H), 1.38 (s, 3H), 1.83 (dt, *J* = 2.0, 16.5 Hz, 1H), 2.49 (dd, *J* = 5.8, 16.7 Hz, 1H), 5.54 (ddd, *J* = 0.7, 2.9, 10.5 Hz, 1H), 5.67 (ddd, *J* = 2.0, 5.9, 9.7 Hz, 1H), 6.47 (s, 1H), 7.13 (td, *J* = 1.1, 7.5 Hz, 1H), 7.21 (td, *J* = 1.3, 7.4 Hz, 1H), 7.26-7.32 (m, 2H). ¹³C NMR (CDCl₃): δ 23.7, 28.6, 30.0, 36.4, 37.3, 49.7, 120.8, 121.3, 122.6, 124.2, 126.6, 137.5, 143.1, 153.7, 162.3. IR (CHCl₃, cm⁻¹): 3007, 2963, 2912, 2866, 1468, 1367. HRMS (M+H)⁺ calcd for C₁₆H₁₈ 210.1409, Found 210.1406.

1,1,4a-Trimethyl-2,3,4,4a-tetrahydro-1H-fluorene (**14**)

To a solution of the mixture of **13a,b** (165 mg, 0.78 mmol, **13a/13b** 20/80) in benzene (8 mL) was added RhCl(PPh₃)₃ (29 mg, 0.031 mmol) under nitrogen atmosphere. The nitrogen was replaced with hydrogen and the solution was stirred for 14 hours. The reaction mixture was concentrated and purified by chromatography on silica gel (hexane), providing **14** (140 mg, 84%).

¹H NMR (400 MHz, CDCl₃): δ 0.99 (td, *J* = 3.7, 13.0 Hz, 1H), 1.11 (td, *J* = 4.0, 13.5 Hz, 1H), 1.25 (s, 3H), 1.30 (s, 3H), 1.37 (s, 3H), 1.90-2.04 (m, 2H), 1.96 (m, 1H), 2.15 (m, 1H), 6.37 (s, 1H), 7.12 (td, *J* = 1.3, 7.4 Hz, 1H), 7.17 (td, *J* = 1.3, 7.4 Hz, 1H), 7.22-7.29 (m, 2H). ¹³C NMR (50 MHz, CDCl₃): δ 20.0, 23.6, 25.5, 31.5, 35.7, 38.1, 92.8, 51.1, 120.5, 120.8, 121.0, 124.0, 126.3, 142.2, 155.2, 164.1.

IR (CHCl₃, cm⁻¹): 3030, 3007, 2963, 2934, 2866, 1605, 1468, 1227. HRMS (M+H)⁺ calcd for C₁₆H₂₀ 212.1565, Found 212.1567.

3-Isopropyl-6-methoxycatechol (**16**)

To a solution of 2',3'-dihydroxy-4'-methoxyacetophenone **15** (5.13 g, 26.8 mmol) in tetrahydrofuran (134 mL) at 0 °C was added 3 M methylmagnesium bromide in diethyl ether (45 mL, 134 mmol). The reaction mixture was stirred for 30 minutes at 0 °C and then for 30 minutes at room temperature. The reaction mixture was quenched with water, acidified with 1M HCl, and extracted with chloroform. The

organic phase was rinsed with water, dried over anhydrous sodium sulfate and concentrated under reduced pressure to provide 3-(1-hydroxy-1-methylethyl)-6-methoxybenzene-1,2-diol (5.27 g) as a solid. To a solution of crude 3-(1-hydroxy-1-methylethyl)-6-methoxybenzene-1,2-diol (5.27 g) in dichloromethane (130 mL) at 0 °C was slowly added triethylsilane (6.41 mL, 40.3 mmol) and then BF₃·Et₂O (6.80 mL, 53.7 mmol). The reaction mixture was stirred for 1 hour at 0 °C and 1 hour at room temperature. After quenched with water and extracted with chloroform, the organic phase was dried over anhydrous sodium sulfate and concentrated under reduced pressure. The crude product was purified by chromatography on silica gel (chloroform/methanol 98/2), providing **16** (3.69 g, 75%) as a yellow oil. ¹H NMR (CDCl₃): δ 1.22 (d, *J* = 6.8 Hz, 6H), 3.23 (sept, *J* = 7.0 Hz, 1H), 3.85 (s, 3H), 5.41 (s, 1H), 5.42 (s, 1H), 6.44 (d, *J* = 8.6 Hz, 1H), 6.69 (d, *J* = 8.6 Hz, 1H). ¹³C NMR (CDCl₃): δ 22.9, 27.0, 56.3, 102.5, 116.4, 128.5, 132.0, 141.5, 144.8. IR (CHCl₃, cm⁻¹): 3553, 2964, 1634, 1510, 1286, 1244. HRMS (M+H)⁺ calcd for C₁₀H₁₄O₃ 182.0943, Found 182.0947.

2,3-Diisopropoxy-1-isopropyl-4-methoxybenzene (17)

A mixture of **16** (748 mg, 4.10 mmol), isopropyl bromide (1.92 mL, 20.5 mmol) and cesium carbonate (4.01 g, 12.3 mmol) in acetonitrile (10.3 mL) was refluxed for 12 hours. After cooled to room temperature, the reaction mixture was quenched with water and extracted with ethyl acetate. The organic phase was rinsed with water and brine, dried over anhydrous sodium sulfate, and then concentrated under reduced pressure. The crude product was purified by chromatography on silica gel (hexane/ethyl acetate 10/1), providing **17** (1.08 g, 99%) as a colorless oil.

¹H NMR (CDCl₃): δ 1.16 (d, *J* = 7.1 Hz, 6H), 1.24 (d, *J* = 6.4 Hz, 6H), 1.27 (d, *J* = 6.4 Hz, 6H), 3.33 (sept, *J* = 6.8 Hz, 1H), 3.80 (s, 3H), 4.40 (sept, *J* = 6.1 Hz, 1H), 4.69 (sept, *J* = 6.1 Hz, 1H), 6.63 (d, *J* = 8.8 Hz, 1H), 6.89 (d, *J* = 8.5 Hz, 1H). ¹³C NMR (CDCl₃): δ 22.7, 22.7, 24.1, 26.0, 55.9, 74.0, 74.9, 106.9, 119.9, 135.9, 139.9, 149.0, 152.0. IR (CHCl₃, cm⁻¹): 2974, 1489, 1441, 1288. HRMS (M+H)⁺ calcd for C₁₆H₂₆O₃ 266.1882, Found 266.1881.

1-Bromo-3,4-diisopropoxy-5-isopropyl-2-methoxybenzene (18)

To a solution of **17** (1.08 g, 4.05 mmol) in dichloromethane (40 mL) at 0 °C was added N-bromosuccinimide (805 mg, 4.52 mmol). The reaction mixture was stirred for 3 hours at 0 °C and then 1 hour at room temperature. After the mixture was concentrated under reduced pressure, the crude product was purified by chromatography on silica gel (hexane/ethyl acetate 15/1), providing **18** (1.28 g, 91%) as a colorless oil.

¹H NMR (CDCl₃): δ 1.15 (d, *J* = 7.0 Hz, 6H), 1.25 (d, *J* = 6.2 Hz, 6H), 1.27 (d, *J* = 6.1 Hz, 6H), 3.32 (sept, *J* = 7.0 Hz, 1H), 3.86 (s, 3H), 4.48 (sept, *J* = 6.2 Hz, 1H), 4.62 (sept, *J* = 6.2 Hz, 1H), 7.09 (s, 1H). ¹³C NMR (CDCl₃): δ 22.7, 22.8, 23.8, 26.4, 60.8, 74.5, 75.6, 111.1, 123.9, 140.1, 145.1, 148.9, 149.5. IR (CHCl₃, cm⁻¹): 3024, 3015, 2976, 1472, 1431, 1418, 1236. HRMS (M+H)⁺ calcd for C₁₆H₂₅⁷⁹BrO₃ 344.0987, Found 344.0989.

(3,4-Diisopropoxy-5-isopropyl-2-methoxyphenyl)-(2,6,6-trimethylcyclohex-1-enyl)methanol (19)

To a solution of **18** (300 mg, 0.87 mmol) in tetrahydrofuran (5 mL) was added slowly 2.5 M solution of *n*-BuLi in hexane (350 μL, 0.87 mmol) at -78 °C. After stirred for 10 minutes, a solution of β-cyclocitral (110 mg, 0.73 mmol, 90% pure) in tetrahydrofuran (2.5 mL) was added slowly. The reaction mixture was stirred for 30 minutes at -78 °C and allowed to reach 0 °C. After stirred for 1.5 hours, the mixture was quenched with water, and then added saturated aqueous solution of ammonium chloride. After extracted with chloroform, the organic phase was dried over anhydrous sodium sulfate and concentrated under reduced pressure. The crude product was purified by chromatography on silica gel (hexane/ethyl acetate 7/1), providing **19** (262 mg, 96%) as a colorless oil.

¹H NMR (CDCl₃): δ 0.83 (s, 3H), 1.10 (d, *J* = 7.0 Hz, 3H), 1.11 (d, *J* = 7.0 Hz, 3H), 1.15-1.35 (m, 18H), 1.45-1.55 (m, 2H), 1.60-1.75 (m, 2H), 1.64 (s, 3H), 2.05-2.15 (m, 2H), 3.34 (sept, *J* = 6.9 Hz, 1H), 3.23 (d, *J* = 2.0 Hz, 1H), 3.98 (s, 3H), 4.45 (sept, *J* = 6.1 Hz, 1H), 4.58 (sept, *J* = 6.1 Hz, 1H), 5.61 (d, *J* = 2.0 Hz, 1H), 6.82 (s, 1H). ¹³C NMR (CDCl₃): δ 19.6, 22.6, 22.7, 22.8, 22.9, 23.1, 23.6, 24.3, 25.9, 28.3, 28.9, 34.0, 34.9, 40.1, 60.7, 68.9, 74.4, 74.9, 120.3, 130.5, 134.3, 136.2, 137.0, 143.3, 148.4, 150.5. IR (CHCl₃,

cm⁻¹): 2964, 2934, 2253, 1466, 1439, 1383, 1306. HRMS (M+H)⁺ calcd for C₂₆H₄₂O₄ 418.3083, Found 418.3084.

2,3-Diisopropoxy-1-isopropyl-4-methoxy-5-(2,6,6-trimethylcyclohex-2-enylidenemethyl)benzene (21)

To a solution of **19** (1.19 g, 2.84 mmol) in pyridine (28 mL) was slowly added triflic anhydride (720 µL, 4.26 mmol) at 0 °C. The reaction mixture was stirred for 2.5 hours at 0 °C, then quenched with water and extracted with chloroform. The organic phase was dried over anhydrous sodium sulfate and concentrated under reduced pressure, providing **20** (1.89 g) as a brown oil.

To a solution of crude **20** (1.89 g) in dichloromethane (28 mL) was added DABCO (1.59 g, 14.2 mmol). The solution was stirred for 40 hours, and then water was added. The mixture was extracted with chloroform, and the organic phase was dried over anhydrous sodium sulfate and concentrated under reduced pressure. The crude product was purified by chromatography on silica gel (hexane/diethyl ether 95/5), providing **21** (1.03 g, 90%, Z/E 84/16) as a colorless oil.

¹H NMR of the Z isomer (CDCl₃): δ 1.14 (d, *J* = 6.8 Hz, 6H), 1.16 (s, 6H), 1.25 (d, *J* = 6.0 Hz, 6H), 1.26 (d, *J* = 6.0 Hz, 6H), 1.44 (d, *J* = 1.5 Hz, 3H), 1.57 (dd, *J* = 4.8, 6.4 Hz, 2H), 2.20 (m, 2H), 3.34 (sept, *J* = 6.8 Hz, 1H), 3.79 (s, 3H), 4.47 (sept, *J* = 6.1 Hz, 1H), 4.63 (sept, *J* = 6.0 Hz, 1H), 5.52 (m, 1H), 6.38 (s, 1H), 6.73 (s, 1H). ¹³C NMR of the Z isomer (CDCl₃): δ 22.6, 22.8, 22.8, 23.8, 24.1, 26.0, 27.5, 36.0, 37.3, 60.3, 74.1, 74.8, 117.6, 122.9, 128.6, 129.1, 132.3, 137.5, 143.3, 147.2, 147.8, 149.7. IR (CHCl₃, cm⁻¹): 2972, 2930, 1470, 1439, 1317. HRMS (M+H)⁺ calcd for C₂₆H₄₀O₃ 400.2977, Found 400.2980.

2,3-Diisopropoxy-4-isopropyl-6-(2,6,6-trimethylcyclohex-2-enylidenemethyl)phenol (22)

To a suspension of sodium hydride (60% in oil) (481 mg, 12.0 mmol) in N,N-dimethylformamide (15 mL) was slowly added *n*-DodSH (2.87 mL, 12.0 mmol) at room temperature. After stirred for 10 minutes, a solution of **21** (482 mg, 1.20 mmol) in DMF (10 mL) was added, stirred for 6 hours at 130 °C. After cooled to 0 °C, the mixture was quenched with water, and then added saturated aqueous solution of ammonium chloride. The crude mixture was extracted with ethyl acetate, the organic phase was dried over anhydrous sodium sulfate, and then concentrated under reduced pressure. The crude product was purified by chromatography on silica gel (hexane/ethyl acetate 100/1), providing **22** (446 mg, 96%) as a colorless oil.

¹H NMR of the Z isomer (CDCl₃): δ 1.14 (d, *J* = 7.0 Hz, 3H), 1.17 (s, 3H), 1.20-1.35 (m, 6H), 1.45 (dd, *J* = 2.0, 3.3 Hz, 3H), 1.57 (dd, *J* = 4.6, 6.4 Hz, 2H), 2.21 (m, 2H), 3.28 (sept, *J* = 6.9 Hz, 1H), 4.55 (sept, *J* = 6.1 Hz, 1H), 4.63 (sept, *J* = 6.1 Hz, 1H), 5.54 (m, 1H), 6.34 (s, 1H), 6.69 (s, 1H). ¹³C NMR of the Z isomer (CDCl₃): δ 22.5, 22.6, 22.6, 22.7, 24.0, 25.8, 27.5, 36.1, 37.5, 73.8, 74.3, 116.6, 121.9, 122.7, 128.8, 132.4, 133.9, 136.4, 145.4, 145.9, 148.2. IR (CHCl₃, cm⁻¹): 2964, 1468, 1383, 1107. HRMS (M+H)⁺ calcd for C₂₅H₃₈O₃ 386.2821, Found 386.2820.

2,3-Diisopropoxy-4-isopropyl-6-(2,6,6-trimethylcyclohex-2-enylidenemethyl)phenyl trifluoromethanesulfonate (11)

To a solution of **22** (924 mg, 2.39 mmol) in pyridine (12 mL) was slowly added triflic anhydride (602 µL, 3.59 mmol) at 0 °C. The reaction mixture was stirred for 3 hours at 0 °C and overnight at room temperature. After quenched with water and extracted with chloroform, the organic phase was rinsed with water, dried over anhydrous sodium sulfate, and then concentrated under reduced pressure. The crude product was purified by chromatography on silica gel (hexane/diethyl ether 95/5), providing **11** (1.00 g, 81%, Z/E 80/20) as a colorless oil.

¹H NMR of the Z isomer (CDCl₃): δ 1.14 (s, 6H), 1.16 (d, *J* = 7.0 Hz, 6H), 1.26 (d, *J* = 6.0 Hz, 6H), 1.27 (d, *J* = 6.2 Hz, 6H), 1.38 (d, *J* = 1.3 Hz, 3H), 1.59 (t, *J* = 6.4 Hz, 2H), 2.21 (m, 2H), 3.36 (sept, *J* = 7.0 Hz, 1H), 4.50-4.70 (m, 2H), 5.58 (m, 1H), 6.26 (s, 1H), 6.80 (s, 1H). ¹³C NMR of the Z isomer (CDCl₃): δ 22.1, 22.5, 23.5, 24.0, 26.3, 27.2, 28.2, 36.1, 36.8, 74.6, 75.3, 114.8, 123.0, 130.1, 131.4, 142.3, 142.5, 147.4, 150.1. IR (CHCl₃, cm⁻¹): 2970, 1420, 1321, 1140. HRMS (M+H)⁺ calcd for C₂₆H₃₇F₃O₅S 518.2313, Found 518.2311.

13a

back product B - more polar

exp1 st01h

SAMPLE		INSTR. & VER	
date	Jul 27 2004	dfreq	399.876
solvent	CDCl3	ch	H1
file	exp1	qpr	30
ACQUISITION		dcf	0
dfreq	399.876	ch	mm
tn	H1	dm	c
at	3.744	dmf	200
np	44328	dmf	1.0
sw	6000.6	dmf	1.0
fb	3000	homo	PROCESSING
lsc	60	etalia	n
lsc	6.5	proc	ft
di	1.2356	fn	not used
tof	600.0	math	z
nt	64		
ct	64	verr	procplot
alock	n	veop	
gain	not used	whs	
FLAGS			
il	n	wt	
in	n		
op	y		
hs	nn		
DISPLAY			
sp	-40.1		
wp	3198.9		
vs	121		
sc	0		
wc	380		
hmm	8.43		
ls	833.67		
rfl	400.0		
rfp	0		
th	11		
ins	1.000		
al	ph

CC1=CC=C2C(=C1)C=CC2CCC3

17

L2232

exp1 s2pul

```

data Jan 31 2005 dn H1
solvent CDCl3 dcl 0.0 H1
file exp dn
Acquisition exp dn
sfreq 199.989 MHz 200
in H1 dcl 1.023
at 4.000 F2
up 32000 F1 not used
sw 4000.0
zb 7500 WERT
pw 11.5 WSPD
pr 11.5 WSPD
dl 0 WRT
tod 200.0
nt 16 sp -20.0
ct 16 wp 1998.5
alock n vs 672
gain not used ac 0
Phase wc 380
il n Hgms 4.21
in n Is 13623.00
y Y 8007.3
th 0
line 28
nm 3.000
nm ph

```

18

19

122295

exp1 s2p01

```

NAME      122295
DATE      Feb 1 2005
SOLVENT   CDCl3
FILE      122295
ACQTIME   199.929
FREQ      300
NUC1       13C
P1         4.000
SFO        101.325
PROC       PROCESSED
INP        32000
SW         4000.0
F2         7500
WDW        4
SSB        0
GB         0
PC         11.5
PW         11.5
PR         11.5
SC         0
DC         0
TOF        200.0
NT         64
CT         64
ALOOK      not used
GAIN       not used
F2000      4.21
F1         41890.05
F0         798.0
Z          0
PH         2.000

```

21

12298
exp1 stdlh

date	Feb 7 2005	dirq	DEC. 4 VT
solvent	CDCl3	dm	H1
file	exp	dpr	30
Acquisition	exp	dof	0
dirq	399.876	dm	mm
tn	H1	dm	o
at	3.778	dm	200
sp	44938	dmw	
sp	6090.5	dmw	1.0
sp	3000	hnmw	n
bs	16	PROCESSED	
tpwr	60	wtfile	
pw	6.5	proc	ft
dl	1.256	fn	not used
tof	600.0	meth	z
nt	64		
ct	64	wtw	
alock	n	wtw	proplot
gain	not used	wtw	
FLAG	not used	wtw	
il	n		
in	n		
op	y		
bs	nm		
DISP	-40.1		
wp	3198.9		
vs	252		
sc	0		
wc	380		
hnmw	8.42		
ls	2138.29		
xl	305.3		
xfp	0		
th	6		
lus	1.000		
sl	ph

11

Chemical structure 11 is a complex molecule featuring a central benzene ring. At the 1-position, there is a sulfonate group (-SO₂O-CF₃). At the 2-position, there is a methoxy group (-OCH₂CH(CH₃)₂). At the 3-position, there is an isopropoxy group (-OCH₂CH(CH₃)₂). At the 4-position, there is a vinyl group (-CH=CH₂). At the 5-position, there is a 1,1-dimethylcyclohexyl group.

123044
 exp1 stdih
 SAMPLE
 date Apr 21 2005 dirq 359.876
 solvent CDCl3 dm H1
 file exp 30
 ACQUISITION
 dirq 359.876 dm
 tn H1 dm c
 at 3.744 dmf 200
 up 44928 dmf
 sw 600.6 dmf 1.0
 fd 3000 homo
 hs 16 PROCESSING
 n
 46
 6.5
 1.256 f2
 600.0 meth
 nt 32
 ct 32 weir
 allock n weir
 gain not used wbe
 F1A0S
 wit
 il n
 in n
 in y
 hs mn
 DISPLAY
 sp -40.1
 sp 3180.0
 vt 169
 ac 0
 wc 380
 hsum 8.42
 is 1965.70
 xl 387.1
 xfp 0
 th 20
 ins 100.000
 ai cdc ph

CC(C)C1=C(C(=O)O)C(=C(C2=CC(C(C)(C)C)C2)C3=CC=CC=C3)C(=C(O)C1

13a

Reck product B - more polar

exp6 std11c

SAMPLE DMC. & VT
 date Jul 27 2004 dfrq 399.876
 solvent CDCl3 dn H1
 file exp dpr 42
 ACQUISITION dcf 0
 sfrq 100.559 dm YYY
 tn Cl3 dm w
 at 1.500 dmf 10000
 mp 75008 dseq
 sw 25000.0 dres 1.0
 fb 14000 homo n
 bs 64 lb PROCESSING
 tpr 54 lb 1.00
 pw 4.5 while
 di 0.500 proc ft
 do 1400.0 f1 not used
 vc 1600 math f
 ct 512
 gain not used wexp procplot
 il n wnt
 in n
 dp y
 hs mn
 DISPLAY
 sp -502.9
 wp 19103.9
 vs 1017
 ac 0
 nc 38
 hnm 50.27
 ja 500.00
 rfi 9350.7
 xfp 7758.3
 th 13
 lns 100.000
 si no ph

13b

Hack Product A - less polar

```

exp6 std13g
SAMPLE
date Jul 27 2004 dfrq 399.876
solvent CDCl3 dn H1
file exp dpr 42
ACQUISITION dof 0
sfrq 100.559 dm YYY
tn Cl3 dm w
up 1.500 dmf 10000
sw 75008 dseq
sz 25000.0 dres 1.0
fs 14000 homo
ns 14
pb 1b PROCESSING n
pc 1b 1.00
pw 4.5 wfile
pt 0.500 proc ft
tof 1400.0 fn not used f
nt 1600 math
ct 512
alock n warr
gain not used wexp procplot
flags n n wnt
ll n n
in n n
cp y
ha un
DISPLAY
dp 502.9
wz 19103.9
vc 1068
wc 380
hsum 50.27
ls 500.00
rfl 9348.8
rfb 7758.3
th 6
ins 100.000
si ph

```

16

L2272

exp6 s2pul

NAME: HNC. & VT
 date Jan 21 2005 dm H1
 solvent CDCl3 dof 0.0
 file y
 exp dm w
 ACQUISITION exp dm w
 50.285 dm 7600
 0.5
 2.000 dm 1023
 64000 PROCESSING
 15000.0 lb 1.00
 7500 fin not used
 4
 10.0 warr
 10.0 wexp
 0 wq
 600.0 wnt
 1024
 192 sp
 -251.4
 9050.1
 9357
 gain not used vs
 flags
 il n wc sc 0
 380
 23.82
 120.00
 120.00
 6343.0
 3879.6
 21
 1.000
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