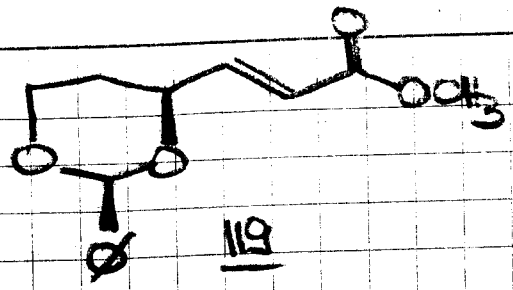
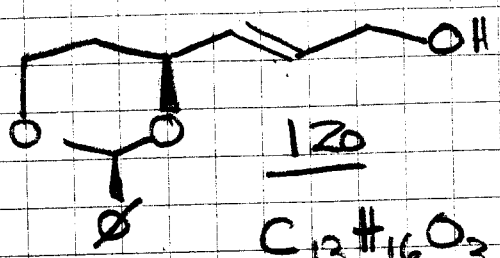


119

248,28

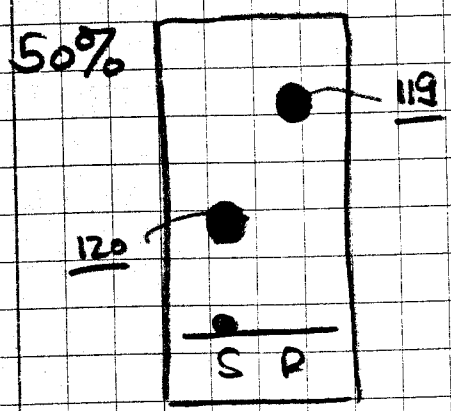
DIBAL-H →



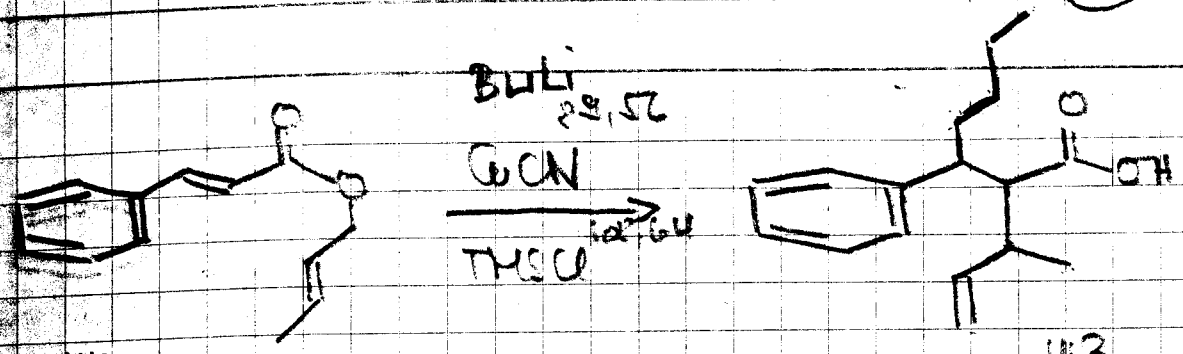
120

$C_{13}H_{16}O_3$ 220,27

A solution of 2,25g (9,06 mmol) 119 in 50 ml dry CH_2Cl_2 was heated at -78° with 20 ml (20 mmol, 2,2 eq) of a 1M solution of DIBAL-H in hexanes, dropwise and stirred for 30 min at -78° (45 min). The reaction mixture was quenched with MeOH (1 ml) and poured into a sep funnel containing sat. Na-K-tartrate (30 ml). After shaking, the organic phase was separated and the aqueous phase twice extracted with EtOAc. The combined organic extracts were washed with brine, dried over Na_2SO_4, ~~and evaporated~~ filtered through Na_2SO_4 and a little SiO_2 and evaporated to yield 1,979 (99%) 120. oil, colorless.



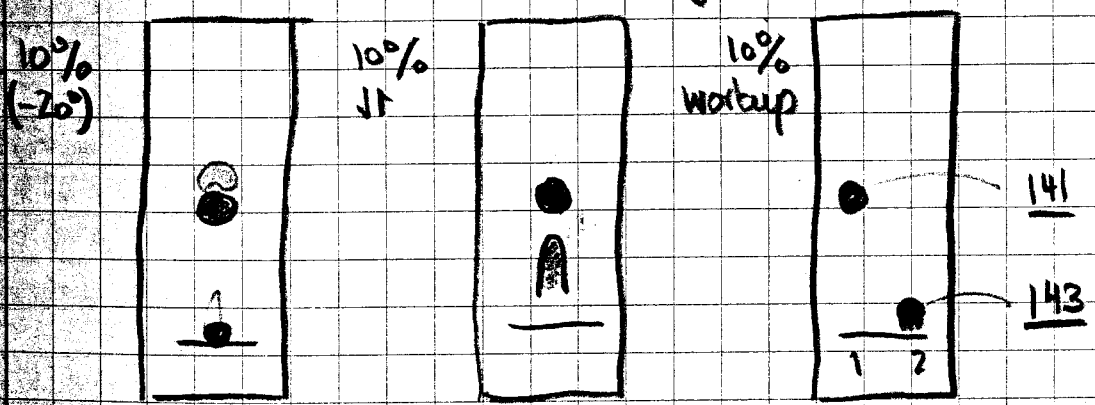
(143)



141
202,35

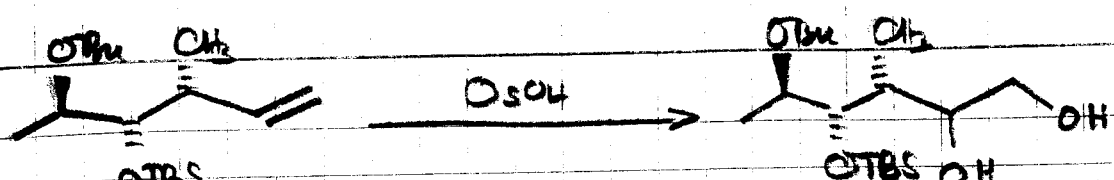
143
$C_{17}H_{24}O_2$ 260,38

A suspension of 358 mg (4 mmol) CuCN in 30 ml dry THF was treated with 2 eq. BuLi at -78° and the mixture warmed to -40° under N_2. At -78°, a solution of 404 mg (2 mmol) 141 and 652 mg (6 mmol) TMSCl in 10 ml THF was added dropwise within 1h. After stirring at -40° for 1h, the temp of the solution was gradually raised to RT (yellow → red → colorless/black) and finally refluxed for 1h.



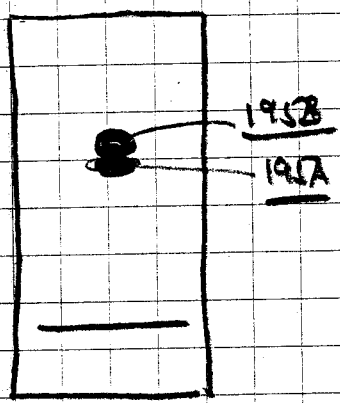
The colorless (dark residue) solution was now filtered, evaporated and chromatographed with 15% EA/Hx to yield 310 mg 143 (60%), 160 mg (40%) 141 (^{13}C-NMR).

143 : 4 diastereomers, ratio: 2,5 : 1 : 0,5 : 0.3 (NMR)



194 334,57 — 195 366,57

A solution of 334 mg (1 mmol) 194 in 1,5 ml acetone/ 1:1 H_2O was treated at 0° with 150 mg (1,5 mmol) NMO and a cat. amount OsO_4 and stirred overnight at 0° → *. Workup with NaCl(sat.) and CH_2Cl_2 followed by chromatography with 40% EA/Hx led to isolation of 220 mg (60%) 195B (major isomer) and 57 mg (15%) 195A (minor isomer)



195B: α_D = -14,0° (c = 5, $CHCl_3$)

195A: α_D = -7,3° (c = 2,3, $CHCl_3$)

Bp: 150° (0,05 Torr) (Kugelrohr)

Same as above, but including 120 mg (0.25 mmol) Dihydroquinidine p-chlorobenzoate: only 60% yield. ratio: 1:2, 1:1.7

0,9 g 194: 72% yield, ratio ~ 1:3.1 (A:B) } no chiral catalyst added.

2,0 g 194: 69% yield, ration ~ 1:4 }

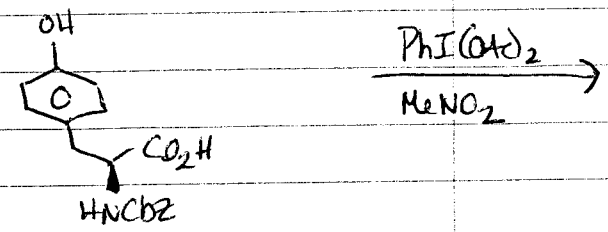
Hydroquinine-p-Cl-benzoate: Mix 227 mmol 194 in 500 ml acetone/ H_2O 1:1 at 0° with 40 mg NMO + 47 mg (100 mmol) hydroquinine p-Cl-benzoate + cat. amount OsO_4. good yield. ratio (crude reaction mixture NMR)

A:B = 1:5

* The crude rotavaped reaction mixture should be immediately diluted and chromatographed; otherwise decomp. → black residue (ev. NMO start decomp.?) → lower yield!

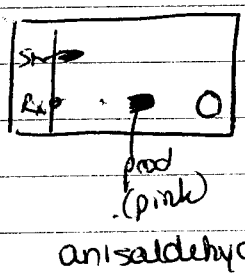
6/1/02

30



315.3 313.28

To a (suspension) solution of ~100 g of $PhI(OAc)_2$ in 850 mL of $MeNO_2$ was added dropwise a solution of 98 g (311 mmol) of Cbz-L-Tyr in 250 mL of $MeNO_2$. After the addition was complete, the rxn was stirred @ rt for 2.5 h.



(1:1 hex EtOAc)

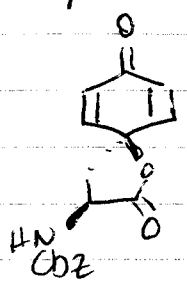
anisaldehyde

It was quenched w/ sat'd $NaHCO_3$ & the layers were separated. The org layer was washed w/ sat'd $NaHCO_3$, dried ($MgSO_4$), conc & purified on SiO_2 (2:1 → 1:1 hex:EtOAc) giving:

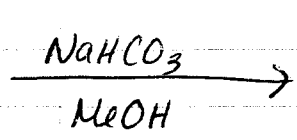
30.1 g (96 mmol)

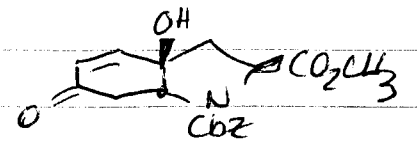
31%

6/3/02



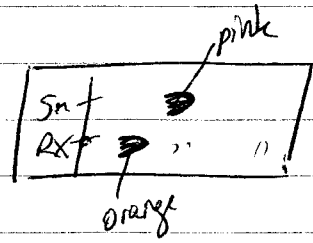
313.28





345.35

To a solution of 30 g (96 mmol) of the spirocycle in 400 mL of MeOH was added ~~8.4~~ 12.1 g (~~106~~ 144 mmol) of $NaHCO_3$. The mixture was stirred @ rt for 6 h. Still spirocycle left so another 4.2 g of $NaHCO_3$ was added, & the mixture stirred @ rt for another 15 h.



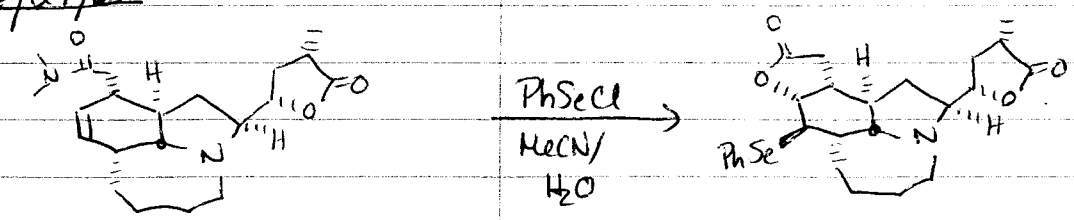
Anisaldehyde

It was conc in vacuo & taken up in EtOAc & H_2O. The aqueous layer was extracted 1× EtOAc, & the combined org layers washed w/ sat'd $NaHCO_3$ & brine, dried ($MgSO_4$), & conc giving: 24 g (69 mmol)

72%

6/27/02

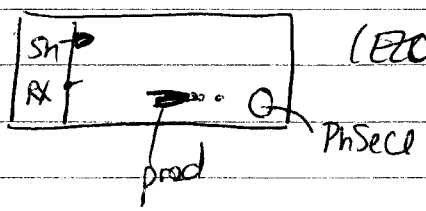
62



360.50

488.52

To a 0°C solution of 327 mg (0.910 mmol) of the amide in 12 mL of a 5:1 Mixture of MeCN/H_2O was added 262 mg (1.37 mmol) of PhSeCl. The rxn was stirred @ 0°C for 21 h.



(EtOAc)

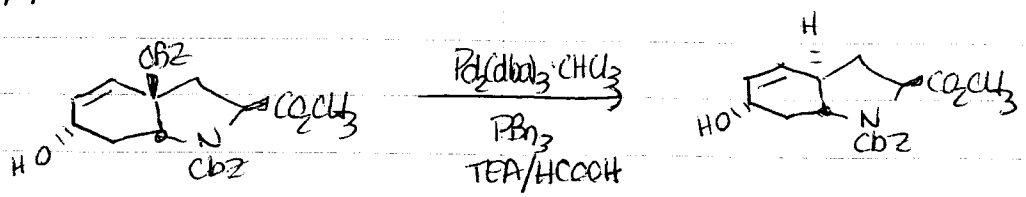
Vaughn's

It was quenched w/ satd $NaHCO_3$ & extracted 2x EtOAc, 1x CH_2Cl_2, dried ($MgSO_4$), conc & purified on SiO_2 (9:1 → 2:1 → 1:1 hex: EtOAc → EtOAc)

giving: 261 mg (0.534 mmol)

60%

8/8/02



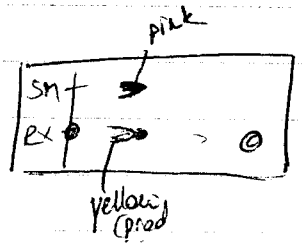
451.47 331.37

S.M.: 23g (51 mmol)
THF: 230 mL

$Pd_2dba_3 \cdot CHCl_3$: 1.0 g (1.0 mmol)
PBn_3: 1.2 g (4.1 mmol)
NEt_3: 20mL (153 mmol)
HCOOH: 5.4 mL (153 mmol)

The rxn was refluxed for 17 h.

It was conc in vacuo & taken up in EtOAc. The org layer was washed 2x sat'd $NaHCO_3$, dried ($MgSO_4$), conc, & purified on SiO_2 (4:1 → 2:1 → 1:1 hex:EtOAc)



(1:1 hex: EtOAc)

Anisaldehyde (coughins for Column)

giving:
14.6g (44 mmol)
86%