Enantioselective Total Synthesis of (+)-Salvileucalin B

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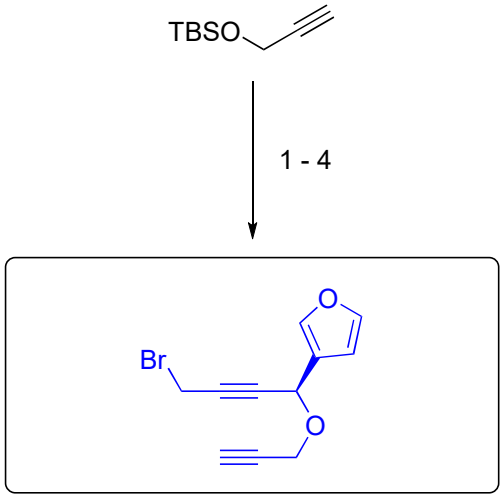
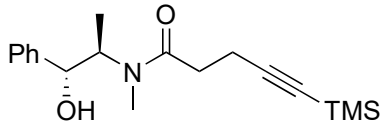
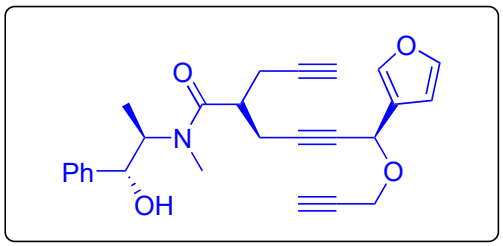


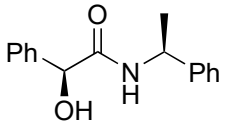
A



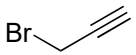


B

1) Me_2Zn, **1**, PhMe, 70 °C *then* 3-furaldehyde, 0 to 22 °C
2) NaH, **2**, DMF
3) 1M HCl, MeOH
4) MsCl, NEt_3, THF *then* LiBr



1

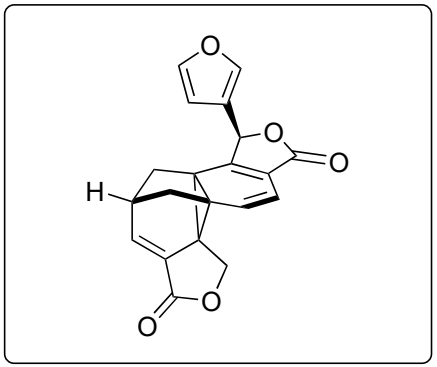


2

5) LiHMDS, LiCl, THF, –78 to 22 °C t*hen A*, –78 °C
6) TBAF, $CH2Cl_2$

1) Name of chiral ligand **1**?
Mandelamide.

5) Name of the auxilary on the starting material? Who developed this chemistry?
Pseudoephedrine. Myers.



(+)-Salvileucalin B

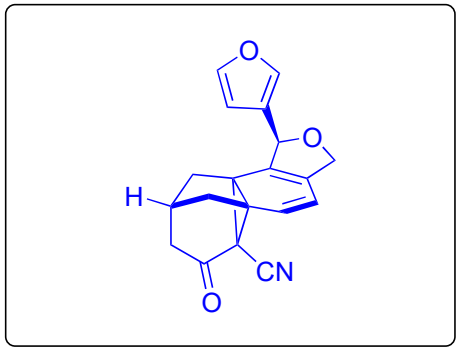
B

7-13

7) RuCp*(cod)Cl (8 mol%), CH_2Cl_2, 45 °C
8) *n*-Bu_4NOH, *t*-BuOH/H_2O, 90 °C
9) $(COCl)_2$, DMF (cat.) *then* CH_2N_2, THF
10) AgTFA, MeOH, NEt_3, THF, –30 to 22 °C
11) $NaCH_2CN$, THF, –78 to 22 °C
12) (imid)$SO2N_3$, pyridine
13) $Cu(hfacac)_2$ (10 mol%), $CH2Cl_2$, 120 °C, microwave

7) *Hint*: 3 rings are formed.

10) Name of the reaction?
Arndt-Eistert Homologation.

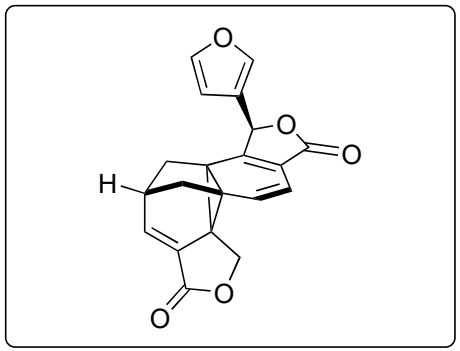


C

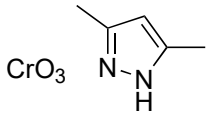
14-18

14) NaHMDS, –78 °C t*hen* Tf_2NPh
15) DIBAL, CH_2Cl_2, –40 °C then *AcOH* aq.
16) DIBAL, CH_2Cl_2, –40 °C then A*cOH a*q.
17) $Pd_2(dba)_3$ (5 mol%), dppf (10 mol%), CO, DIPEA, THF
18) 3, $CH_2\mathbf{Cl}_2$, –35 °C

15) Name of the reaction?
Retro-Claisen rearrangement.



(+)-Salvileucalin B



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