Enantioselective Total Synthesis of (+)-Tricycloclavulone

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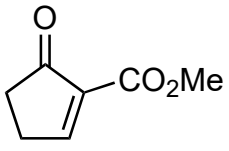


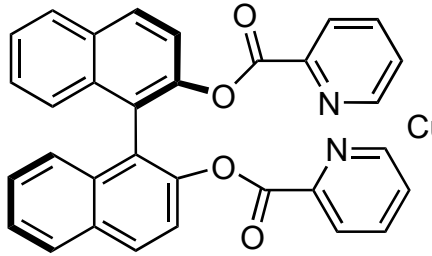
1-6

A

7-13

1) **1**, 20 mol% **2**
2) vinylMgCl
3) TESOTf, 2,6-lutidine
4) $LiAlH_4$, THF
5) DMP
6) *n*-BuLi, tetravinyltin

1



$CuCl_2$, $AgSbF_6$

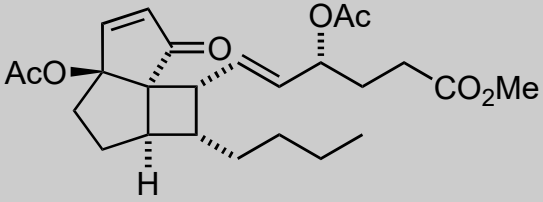
2

7) 2nd generation Grubbs catalyst
8) DMP
9) DIBAL-H
10) MeMgBr, $ClCO_2Me$
11) Bu_2CuLi
12) TBAF, THF
13) SmI_2, THF

1) classify the reaction

10) What's the function of MeMgBr?

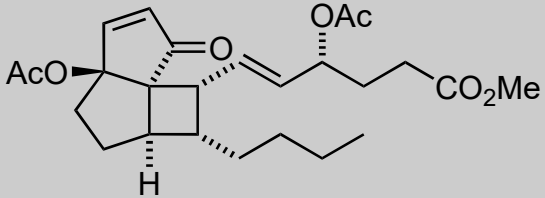
11) *hint: intramolecular ester transfer*
12) *hint: a cyclization occurs*



(+)-tricycloclavulone

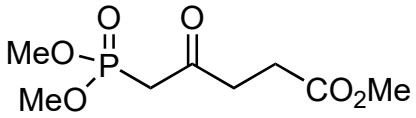
B

14-21



(+)-tricycloclavulone

14) TESOTf, 2,6-lutidine
15) $LiAlH_4$
16) DMSO, $(COCl)_2$, NEt_3
17) **3**, NaH
18) **4**, *i*-PrOH
19) Ac_2O, Py
20) TBAF
21) Ac_2O, Py



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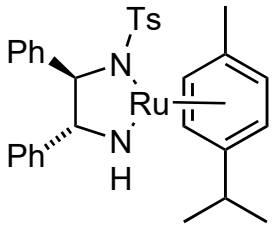

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17) Name reaction?

18) Who developed the chiral catalyst?