Total Synthesis of Rameswaralide Utilizing a Pharmacophore-Directed Retrosynthetic Strategy

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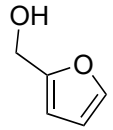


1-8

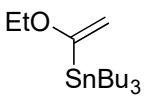
1) μW, H_2O, 200 °C
2) TBSCl
3) I_2, DMAP
4) **1**, CuTC, $AsPh_3$, $Pd_2(dba)_3$
5) MeLi
6) TBAF
7) acryloyl chloride, **2**, DIPEA
8) NBS

A

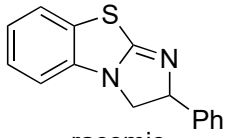
9-14

9) TESOTf, 2,6-lut.
10) AIBN, Bu_3SnH
11) TBAF
12) $ZnEt_2$ *then* $CHBr_3$, O_2
13) LiBr, CAN, NBS
14) DBU

1



2



racemic

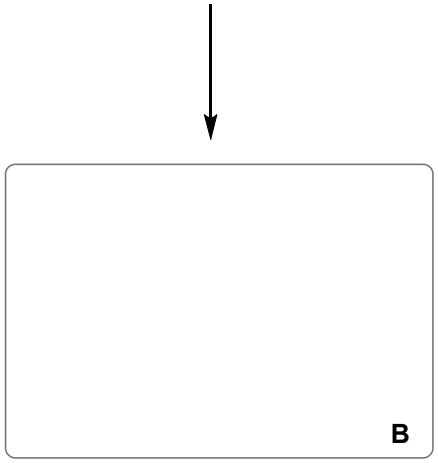
1) Name of the reaction? Mechanism?

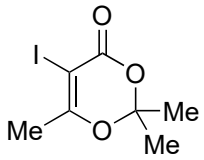
4) Name of the reaction?

7) What is reactive intermediate in this reaction?

8) How would you call this transformation?

12) Name of the reaction? Role of O_2?



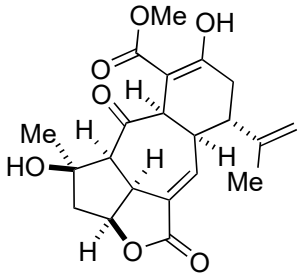


15-16

15) KHMDS, 0 °C
then allyliodide, -78 °C
16) *n*-BuLi, Bu_3SnCl

B + C

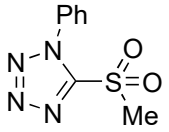
17-23



Rameswaralide

17) CuTC, $AsPh_3$, $Pd_2(dba)_3$
18) Et_3N, TESOTf (2.0 equiv)
19) TBAF, AcOH
20) air, CuCl, $Pd(OAc)_2$
21) pyrrolidine, pyrrolidine•HCl, 23 °C
22) **3**, LiHMDS
23) MeOH, mesitylene, 120 °C

3



20) Name of the reaction?

22) Name of the reaction? Alternatives for this transformation?