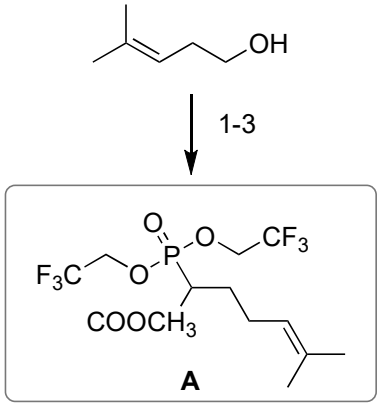
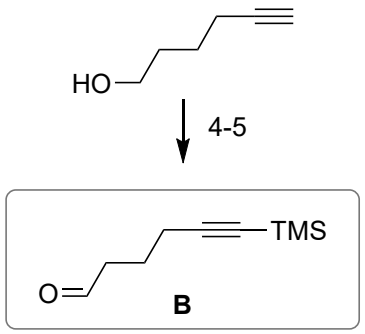
Total Synthesis of Clerodin

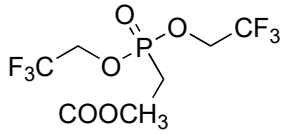
Q. Yin, Y. Dang, S. Feng, Z.-Q. Zhang, Y. Tu, M. Yang, “Total Synthesis of Clerodin” Angew. Chem. Int. Ed. 2025, 64, e202515206.





A + B

1) MsCl, pyr
2) NaI
3) NaH, **1**



1

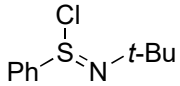
4) LiHMDS, TMSCl
5) $(COCl)_2$, DMSO, Et_3N

5) Name of the reaction?
Swern oxidation

6) NaH then TBAF
7) SeO_2, TBHP, salicylic acid
8) $NaBH_4$
9) Ti(O*i*-Pr)$_4$, (*D*)-DET, TBHP then TBSCl
10) DiBAL•H
11) PivCl
12) Cp_2TiCl_2, 2,4,6-collidine HCl, Zn
13) IBX
14) LiHMDS, **2** then MeLi then Ac_2O

6)Name of the reaction?
Still–Gennari reaction

9)Name of the reaction?
Sharpless epoxidation



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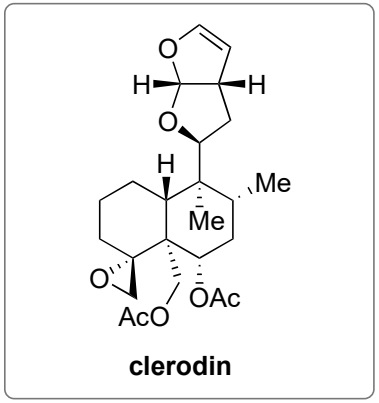
14)Name of the reaction?

Mukaiyama dehydrogenation



clerodin

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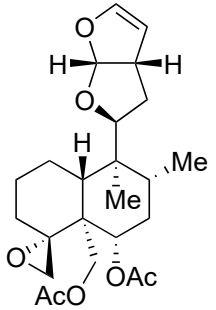
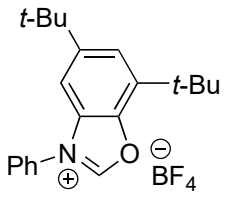


clerodin

15) PCC, $NaHCO_3$
16) SmI_2
17) $NaBH_4$
18) Ac_2O, DMAP, Et_3N
19) TBAF
20) IBX
21) Ph_3PCH_2
22) $PhI(OAc)_2$, I_2 then $AgNO_3$, $NaHCO_3$
23) OsO_4, pyr
24) **3**, **4**, pyr, $NiBr_2$(dtbbpy), $Ir(ppy)_2(dtbby)PF_6$, pthalimide, Quinuclidine, *t*-BuOMe/DMAc, 60 W Blue LEDs
25) PtO_2, H_2 then $HClO_4$
26) Ac_2O
27) SmI_2



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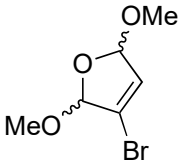

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