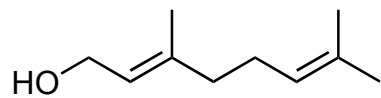


Asymmetric Total Synthesis of Illisimonin A

C. Etling, G. Tedesco, A. Di Marco and M. Kalesse

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1-9

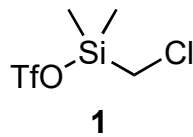


10-15



- 1) $\text{Ti}(\text{O}i\text{Pr})_4$, $t\text{BuOOH}$, L-(+)-diisopropyl tartrate
- 2) CCl_3CN , PPh_3
- 3) $n\text{BuLi}$
- 4) $\text{Zn}(\text{CN})_2$, $\text{Ni}(\text{acac})_2$, neocuproine, Mn
- 5) TESOTf, 2,6-lutidine
- 6) DIBAL
- 7) 2-bromopropene, $t\text{BuLi}$
- 8) TBAF
- 9) IBX

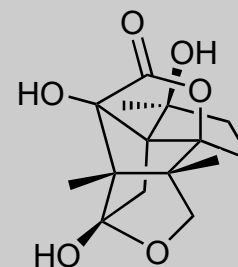
- 10) $\text{B}(\text{C}_6\text{F}_5)_3$ then TESOTf, 2,6-lutidine
- 11) KHMDS then $\text{P}(\text{OEt})_3$, O_2
- 12) **1**, 2,6-lutidine
- 13) LDA
- 14) MeMgCl
- 15) HClO_4



1) Name of starting material?

4) Structure of neocuproine?

10) *Hint: 2 rings formed.* Please show mechanism and suggest name.

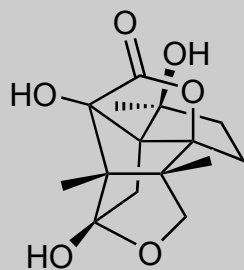


illisimonin A

16-22

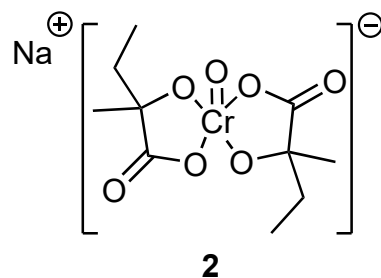


23-28



illisimonin A

- 16) DIBAL
- 17) Ph_2SiCl_2 , DMAP, Et_3N
- 18) **2**, 15-crown-5
- 19) *m*CPBA, NaHCO_3
- 20) Cp_2TiCl_2 , Zn
- 21) TBSCl, imidazole
- 22) *m*CPBA, NaHCO_3



- 23) SnCl_4
- 24) HF
- 25) IBX
- 26) NaClO_2 , NaH_2PO_4 , 2-methyl-2-butene
- 27) AcCl
- 28) $\text{Fe}(\text{PDP})$, H_2O_2

18) Structure of 15-crown-5?

23) Name of the reaction? Please suggest a mechanism.

26) Name of the reaction?

28) Name of the reaction?