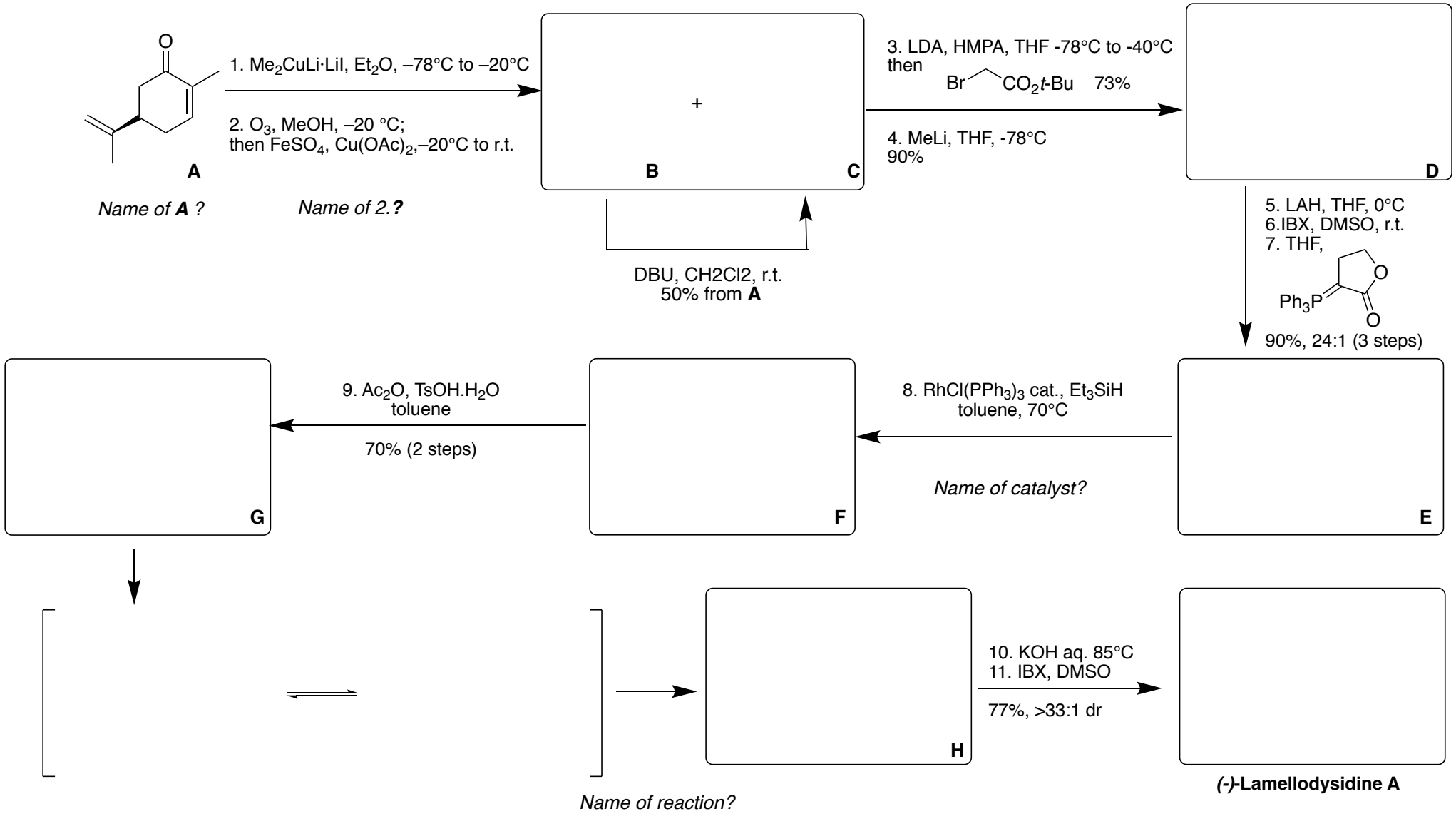
University of Zurich[UZH]

Total Synthesis of (–)-Lamellodysidine A

Org. Lett. **2022**, *24* (3), 921–923.

Gademann Group
Mauger Kantin
22/03/2022

8 steps 32% overall yield
First total synthesis with AI retrosynthesis (9 steps, 17.7% overall yield)



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Asymmetric Total Synthesis of Rhodonoids

ASAP: *Org. Lett.* **2022** 10.1021/acs.orglett.2c00482

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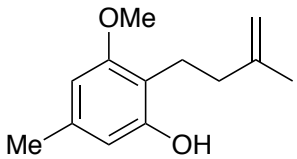


J

1. $Pd(TFA)_2$ cat., (R,R)-BnBOXAX
p-benzoquinone (4 equiv.), CO

MeOH
74%, 93% ee

Domino reaction

Name of 1st reaction?

K

2. $LiBH_4$, THF, > 99%
3. TsCl, pyr., CH_2Cl_2, 96%
4. NaCN, DMF, 99%

L

5. *n*-BuLi, *t*-BuSH, HMPA, 96%
6. TBSCl, imidazole, DMF, 93%

M

7. DDQ, PhH, 95%
8. DIBAL-H, CH_2Cl_2, 83%
9. Me_2CHPPh_3I, *n*-BuLi, 72%

Name of 9.?

N

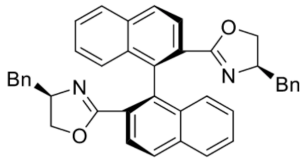
10. m-CPBA, CH_2Cl_2, 72%

11. $Al(OiPr)_3$, $PhCH_3$
12. DMP, CH_2Cl_2
69% (2 steps)

O

13. 254nm, acetone, 61%
14. TBAF, THF, 90%

(-)-Rhodonoids A



(*R*,*R*)-Bn-BOXAX