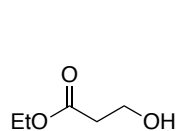


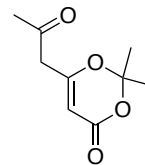
# E47: Total Synthesis of Fidaxomicin



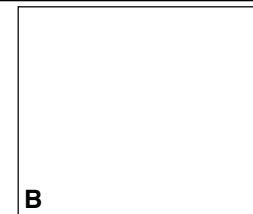
- 1) LDA, THF, *then* acrolein
- 2) Me<sub>2</sub>SnCl<sub>2</sub> (10 mol%), TBSCl, Et<sub>3</sub>N
- 3) Ac<sub>2</sub>O, Et<sub>3</sub>N, DMAP, CH<sub>2</sub>Cl<sub>2</sub>
- 4) DBU, CH<sub>2</sub>Cl<sub>2</sub>
- 5) DIBAL-H, CH<sub>2</sub>Cl<sub>2</sub>
- 6) MnO<sub>2</sub>, CH<sub>2</sub>Cl<sub>2</sub>
- 7) NaClO<sub>2</sub>, KH<sub>2</sub>PO<sub>4</sub>, 2-methyl-2butene, tBuOH/H<sub>2</sub>O



Name of 7?

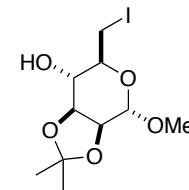
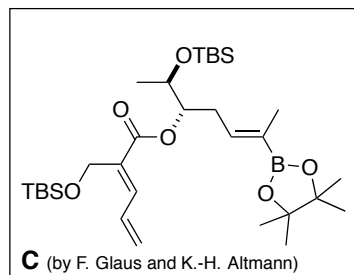


- 8) LDA, THF, propionylimidazole *then* Et<sub>3</sub>N
- 9) SO<sub>2</sub>Cl<sub>2</sub>, CH<sub>2</sub>Cl<sub>2</sub>
- 10) K<sub>2</sub>CO<sub>3</sub>, allyl bromide, DMF



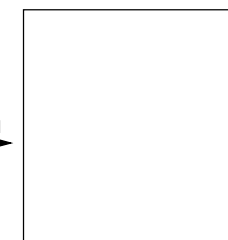
- 11)
- 12)
- 13)
- 14) with **A**

Name of 11?

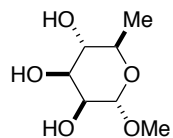


Bernet-Vasella (23)

- 23) Zn, NH<sub>4</sub>Cl, MeOH
- 24) CSA, (MeO)<sub>2</sub>CMe<sub>2</sub>, MeOH

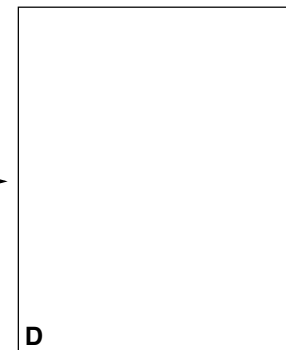


- 25) O<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>, NaOH in MeOH
- 26) MeMgBr, Et<sub>2</sub>O
- 27) TFA, MeOH, microwave
- 28) CDI, DCE, *then* Et<sub>3</sub>N, *i*-PrCOCl, CH<sub>2</sub>Cl<sub>2</sub>
- 29) HBr, AcOH, CH<sub>2</sub>Cl<sub>2</sub>



- 15) HC(OMe)<sub>3</sub>, (CH<sub>3</sub>CO)<sub>2</sub> CSA, MeOH
- 16) NaH, MeI, THF
- 17) TFA, H<sub>2</sub>O, CH<sub>2</sub>Cl<sub>2</sub>
- 18) TBAI, ZnI, TMS-SPh, DCE

- 19) **B**, NaH, Et<sub>2</sub>O
- 20) allyl bromide, K<sub>2</sub>CO<sub>3</sub>, DMF
- 21) NBS, acetone, H<sub>2</sub>O
- 22) ClC(NPh)CF<sub>3</sub>, K<sub>2</sub>CO<sub>3</sub>, acetone

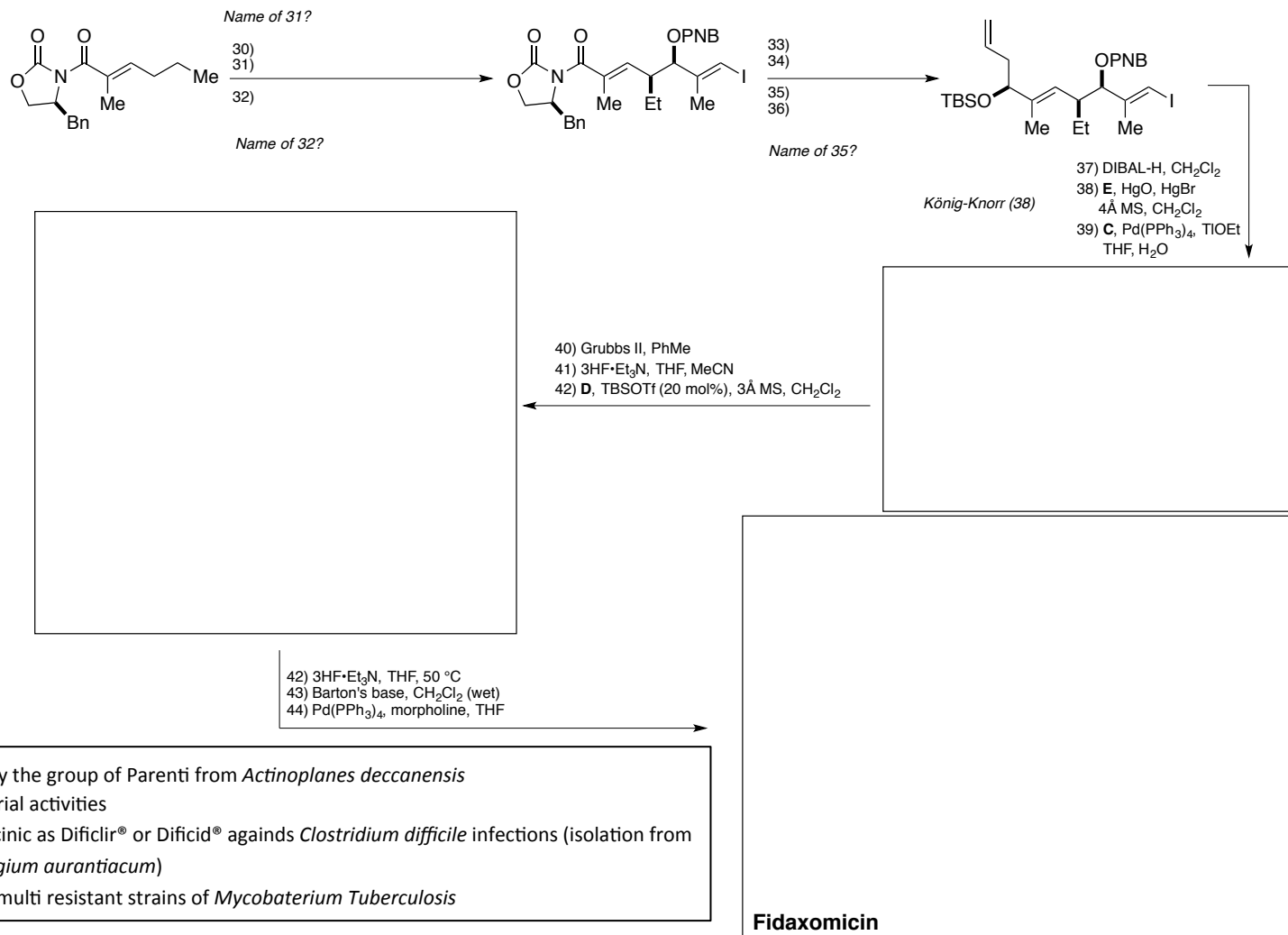


H. Miyatake-Ondozabal, E. Kaufmann, K. Gademann, *Angew. Chem. Int. Ed.* **2015**, *54*, 1933–1936; E. Kaufmann, H. Hattori, H. Miyatake-Ondozabal, K. Gademann, *Org. Lett.* **2015**, *17*, 3514–3517; F. Glaus, K.-H. Altmann, *Angew. Chem. Int. Ed.* **2015**, *54*, 1937–1940; W. Erb, J.-M. Grassot, D. Linder, L. Neuville, J. Zhu, *Angew. Chem. Int. Ed.* **2015**, *54*, 1929–1932.



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