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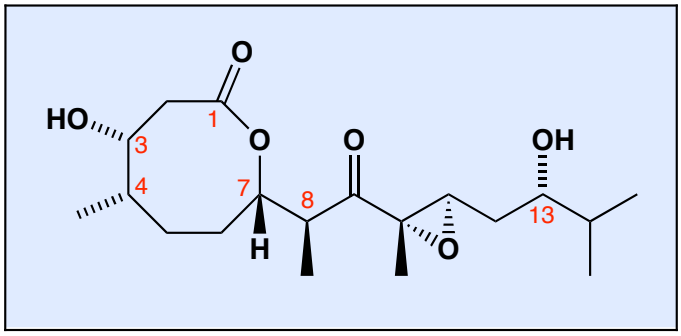
Prof. Rick L. Danheiser

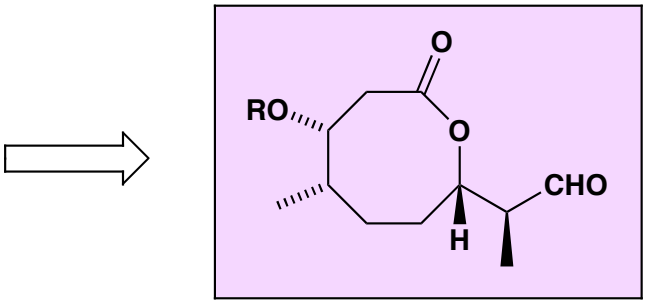
Problems in Stereocontrolled Synthesis

Case Study

Synthesis of Octalactin A

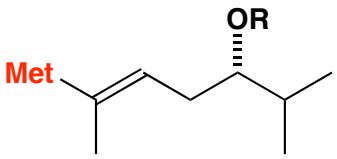
Reviewed in
Shiina, I. *Chem. Rev.* **2007**, *107*, 239





Buszek-Clardy Aldehyde

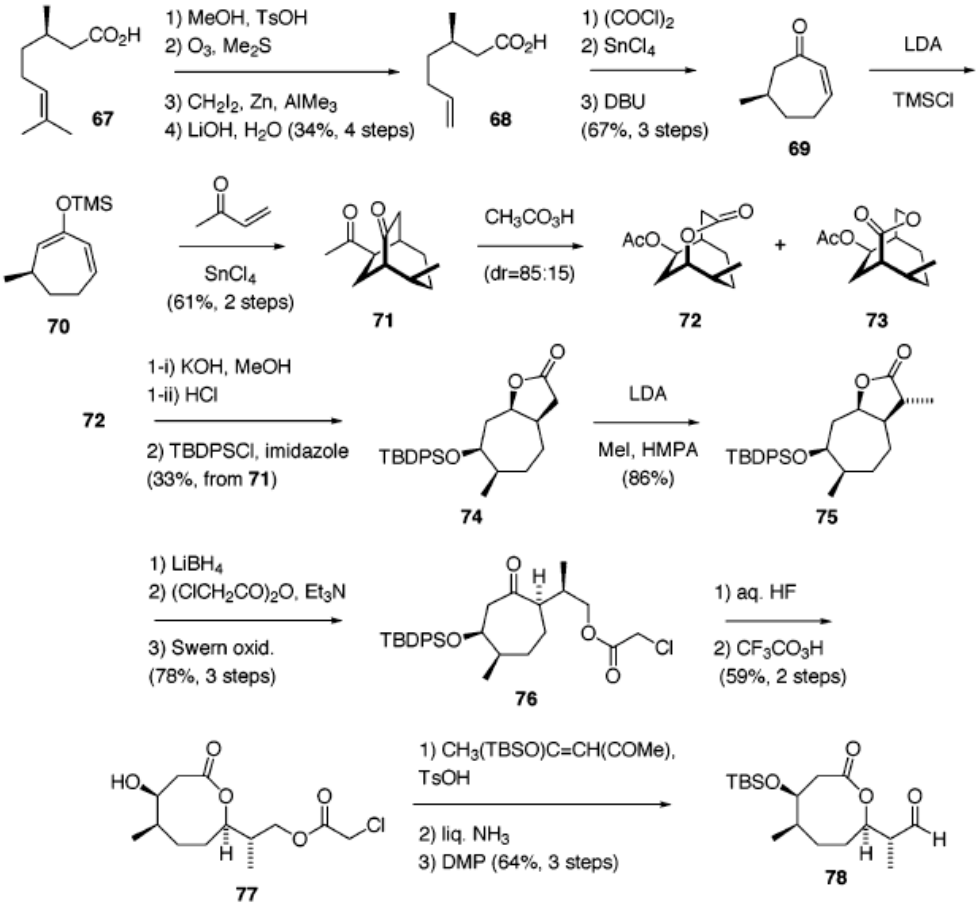
+



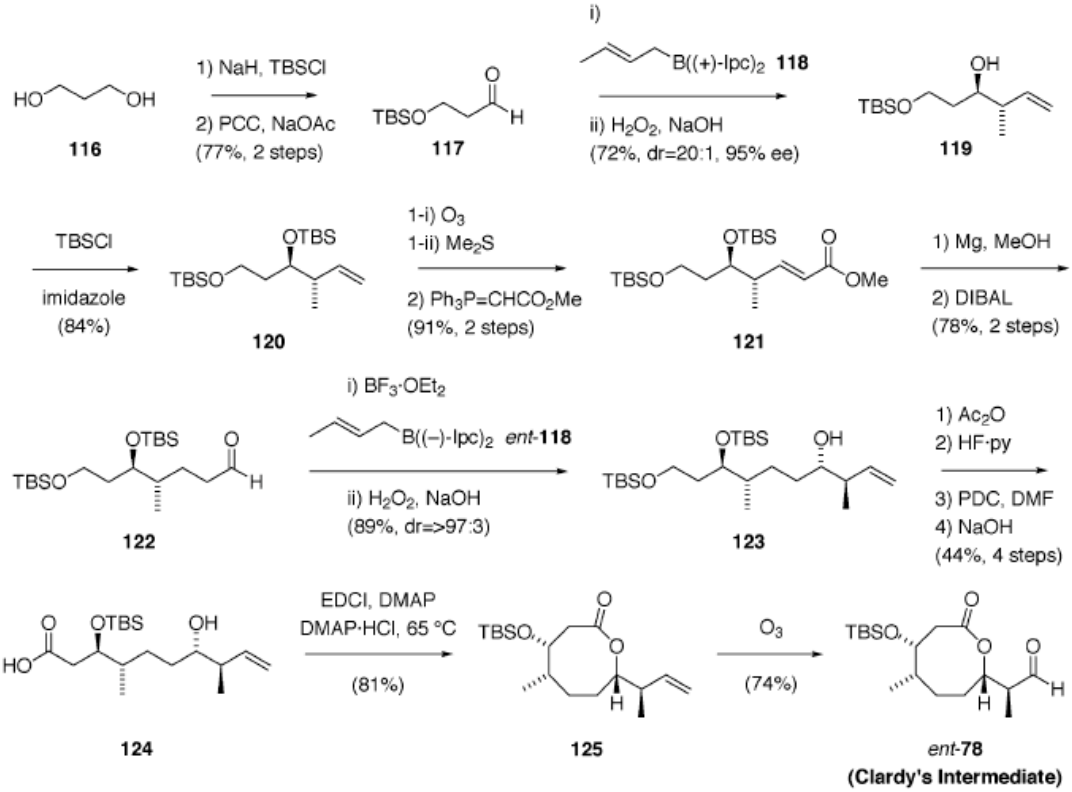
References

(1) J. Clardy et al. *J. Am. Chem. Soc.* **1994**, *116*, 8378
(2) M. B. Andrus et al. *Tetrahedron Lett.* **1996**, *37*, 5049
(3) J. Cossy et al. *Synlett* **2005**, 2851
(4) J.-M. Campagne et al. *Synlett* **2000**, 221
(5) S. Hatakeyama et al. *Synlett* **1998**, 735
(6) J. Garcia et al. *Tetrahedron Lett.* **1998**, *39*, 6761
and see also:
(7) A. B. Holmes et al. *J. Am. Chem. Soc.* **2004**, *126*, 2194

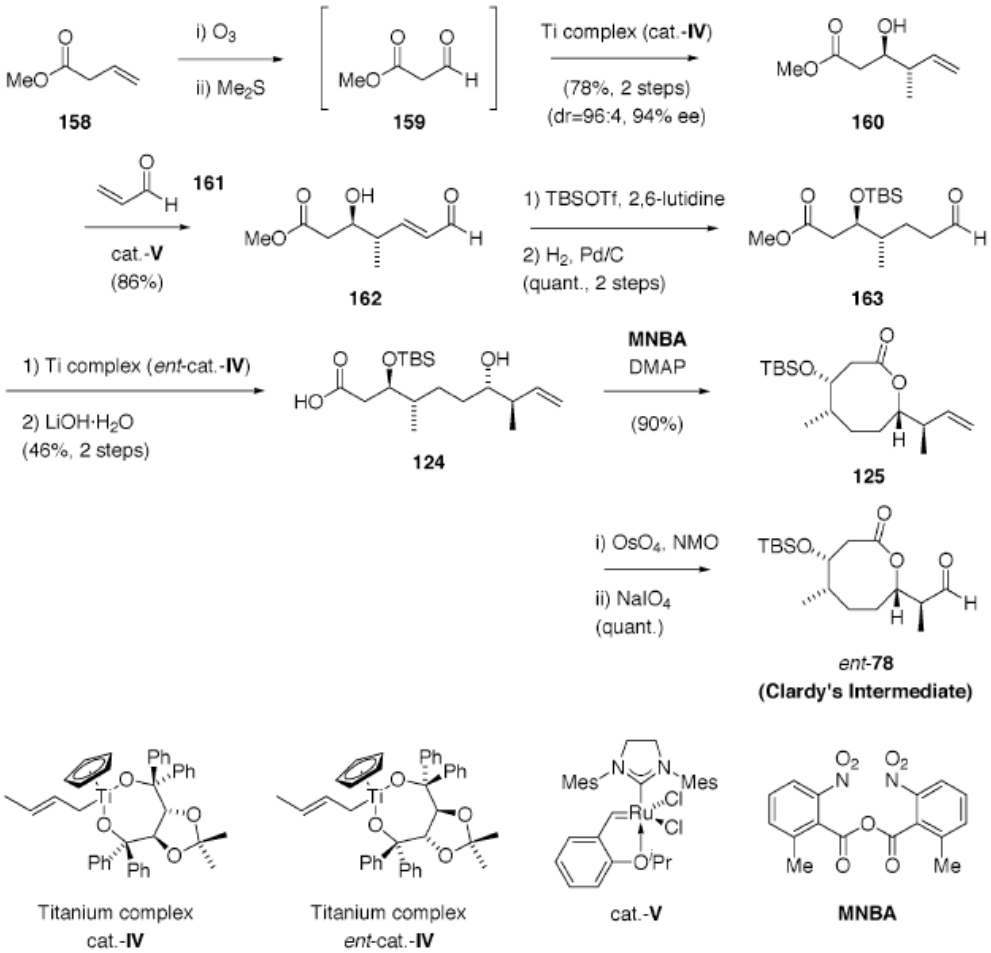
Scheme 7. Total Synthesis of Octalactins A and B by Clardy (1994)[61]



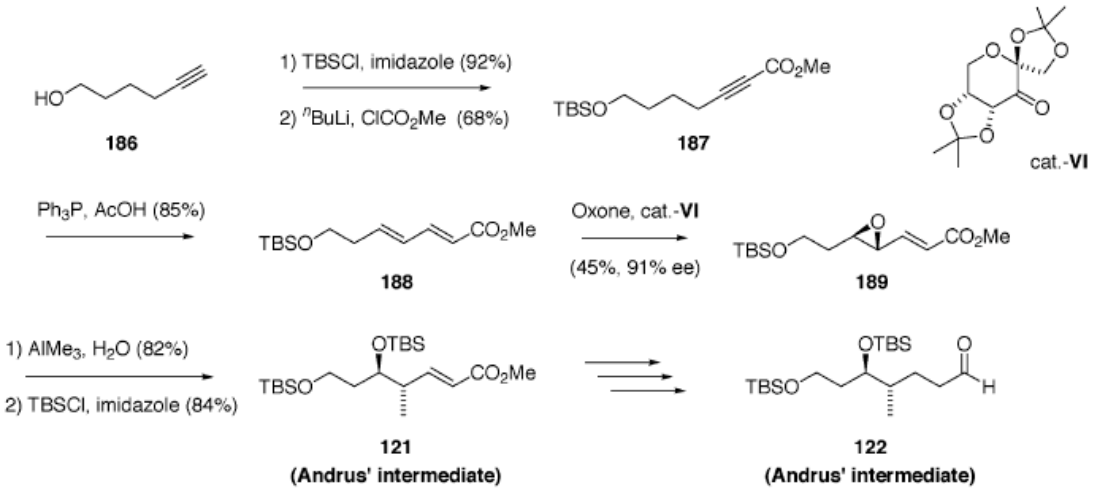
Scheme 10. Formal Synthesis of Octalactins A and B by Andrus (1996)[70]



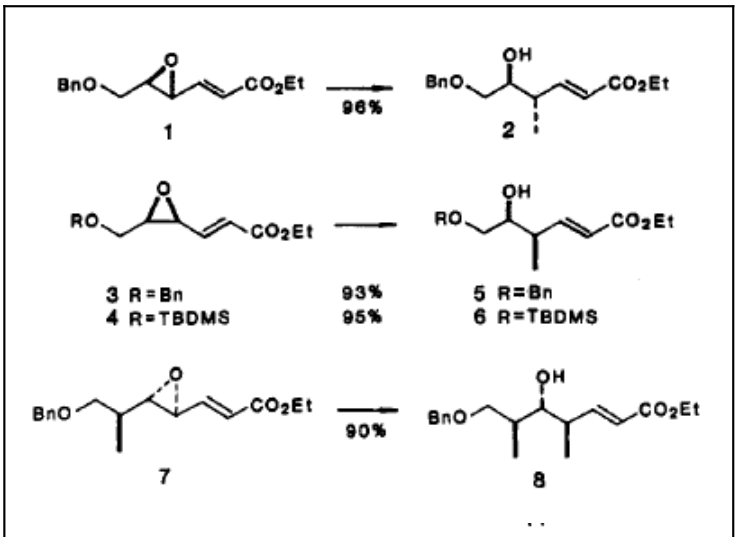
Scheme 14. Formal Synthesis of Octalactins A and B by Cossy (2005)[84]



Scheme 17. Partial Synthesis of Octalactins A and B by Campagne (2000)[92]

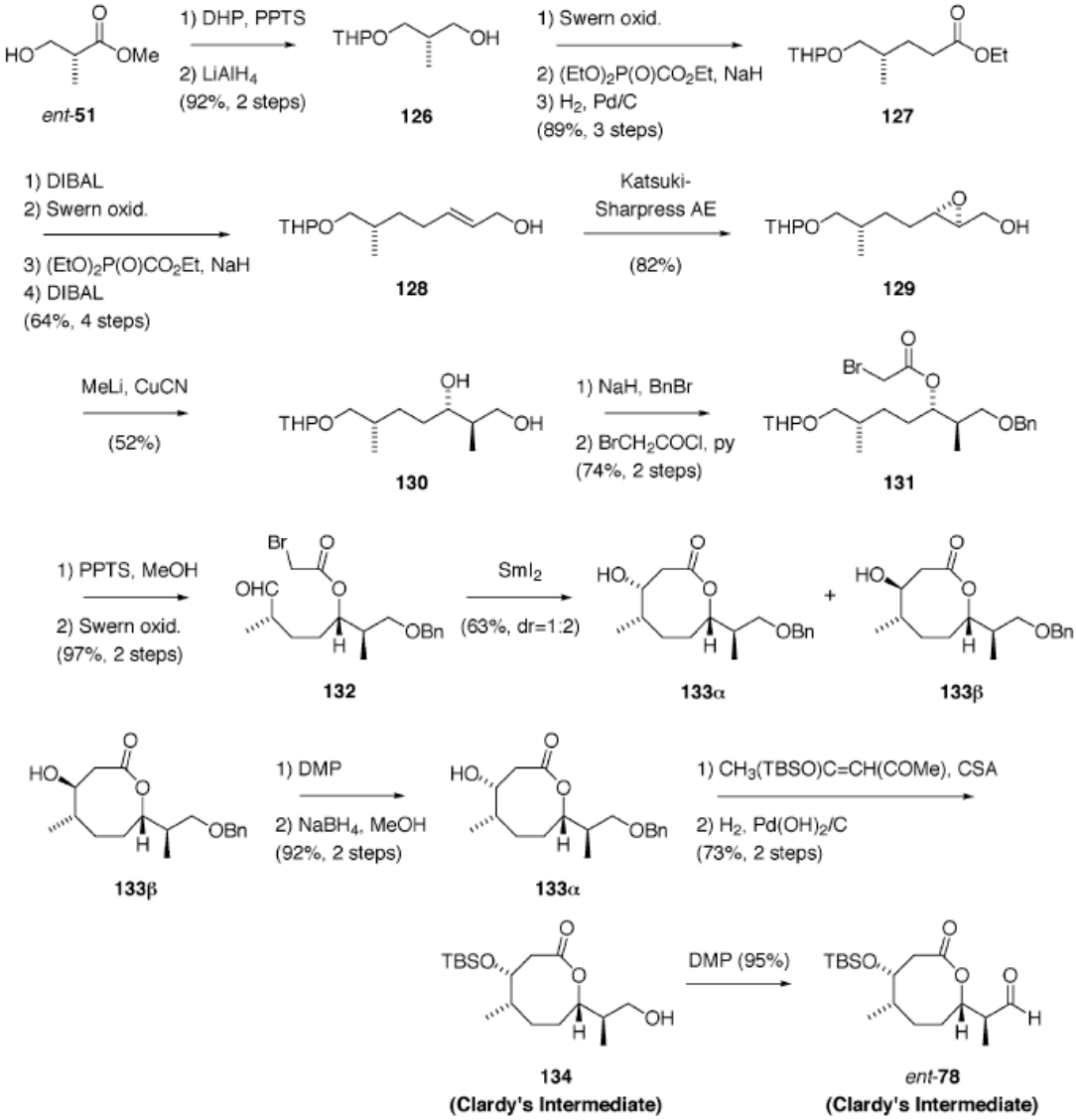


M. Miyashita et al.
J. Org. Chem. **1991**, *56*, 6483

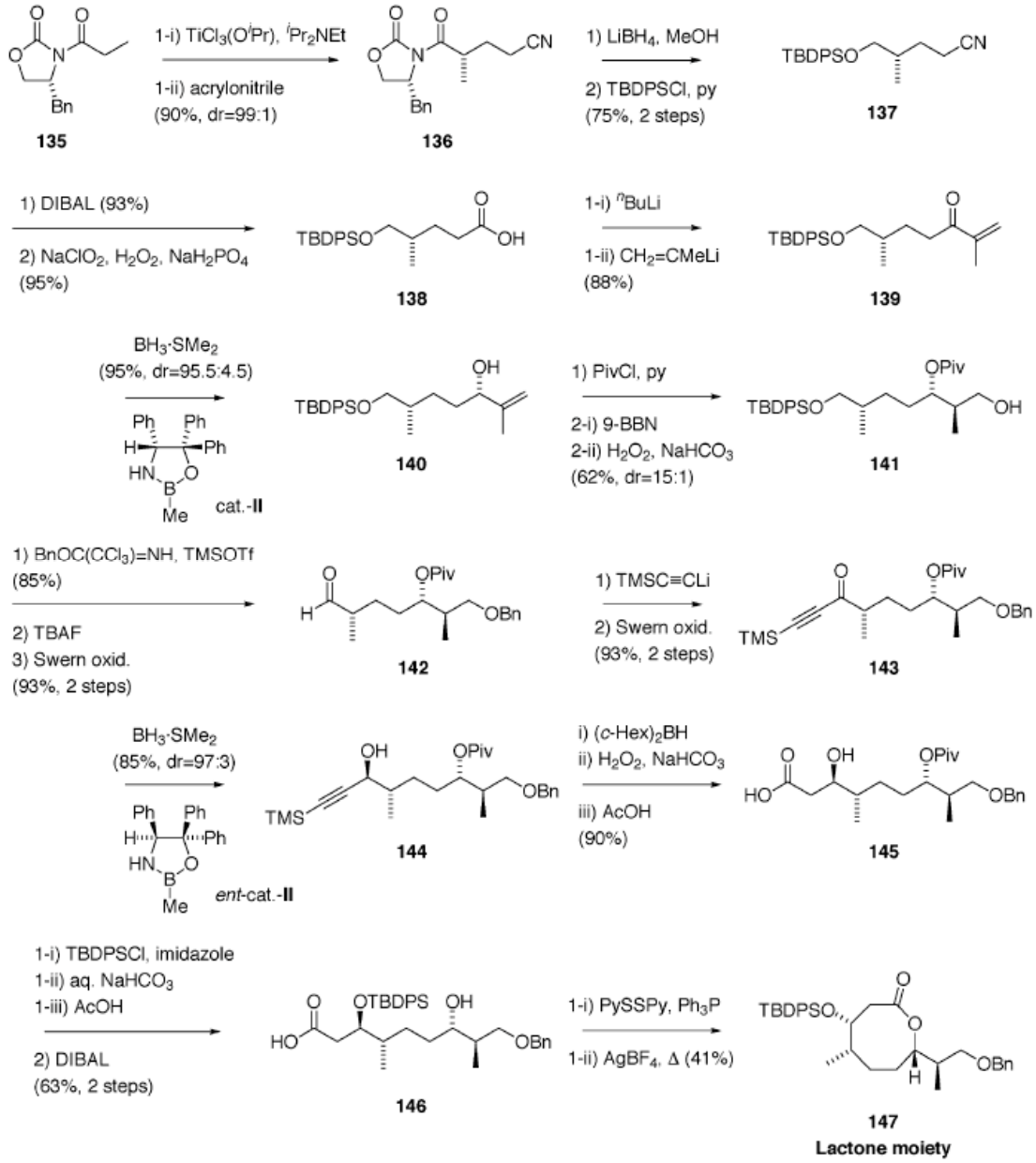


[a] $(CH_3)_3Al$ (2 M hexane solution, 10 equiv), H_2O (6 equiv), $ClCH_2CH_2Cl$, −30 °C, 1–1.5 h.

Scheme 11. Formal Synthesis of Octalactins A and B by Hatakeyama (1998)[77]



Scheme 12. Partial Synthesis of Octalactins A and B by Garcia (1998)[80]



Scheme 8. Total Synthesis of Octalactins A and B by Holmes (2004)[63]