A02−5

Convergent Total Syntheses of Highly Oxygenated Nucleoside Antibiotics

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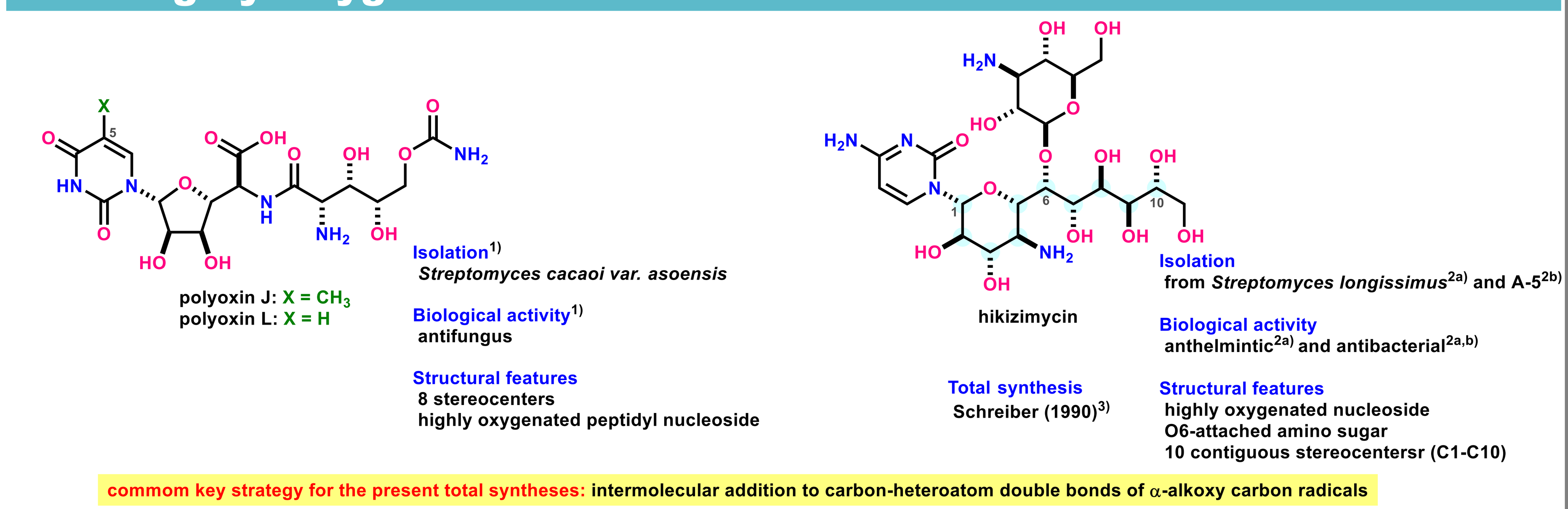
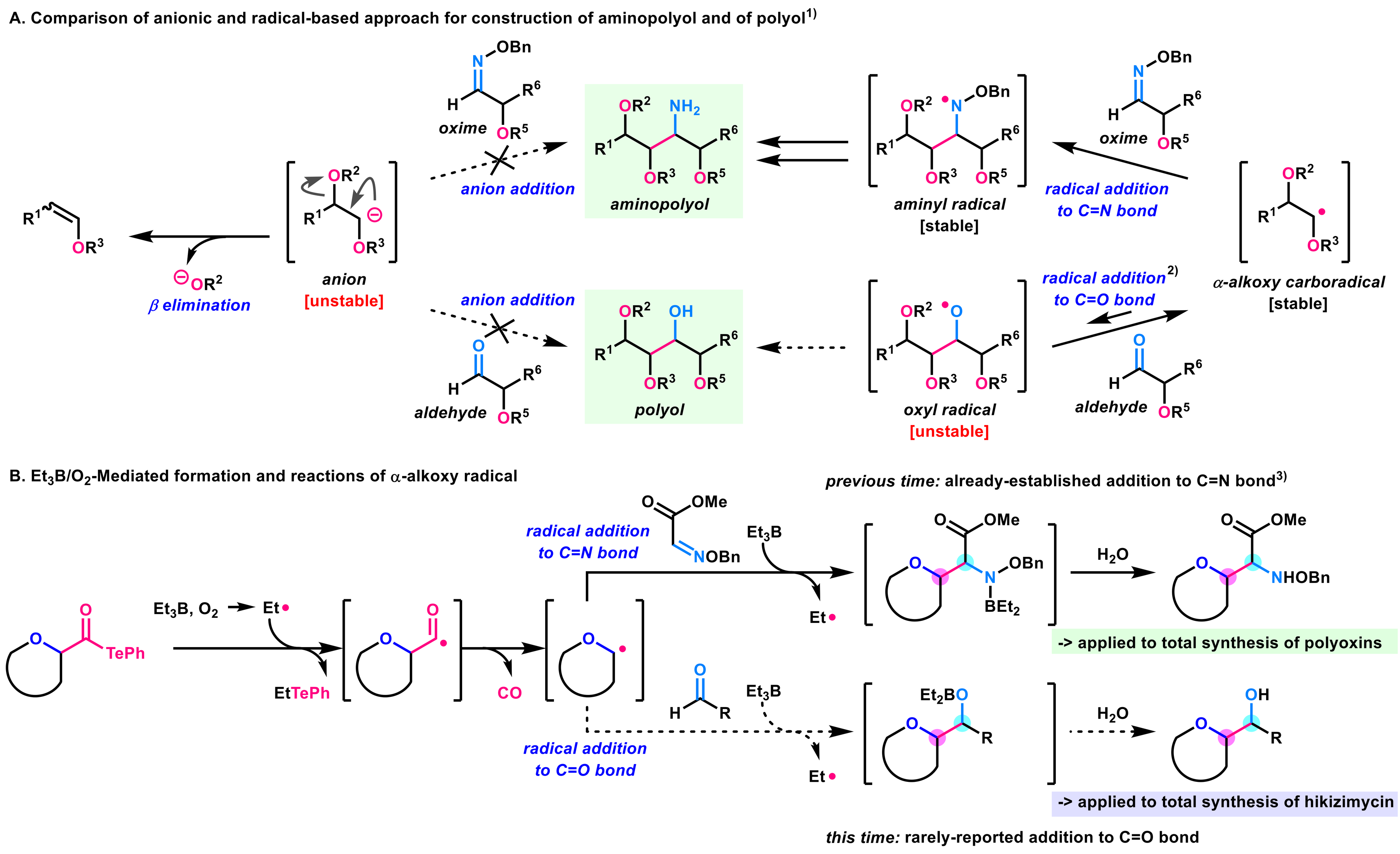
1-1. Highly Oxygenated Nucleoside Antibiotics



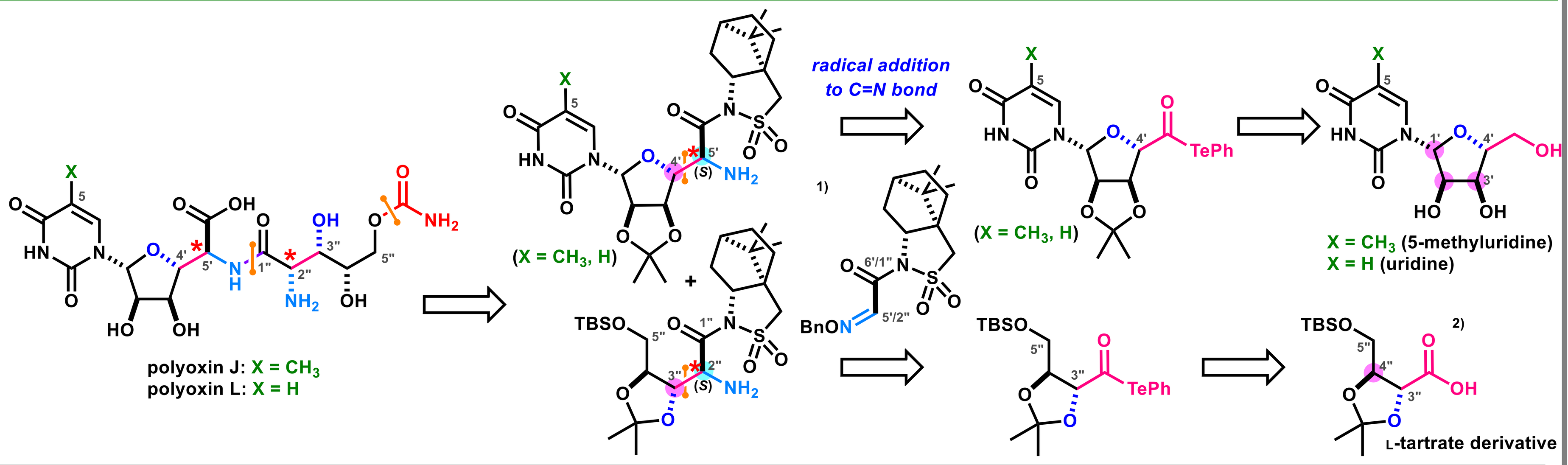
1) Isono, K.; Kobinata, K.; Suzuki, S. *Agr. Biol. Chem.* **1968**, *43*, 1969. 2) (a) Hamill, R. L.; Hoehn, M. M. *J. Antibiot.* **1964**, *17*, 100. (b) Uchida, K.; Ichikawa, T.; Shimauch.Y; Ishikura, T.; Ozaki, A. *J. Antibiot.* **1971**, *24*, 259. 3) Ikemoto, N.; Schreiber, S. L. *J. Am. Chem. Soc.* **1990**, *112*, 9657.

1-2. Radical-based Construction of Densely Oxygenated Core



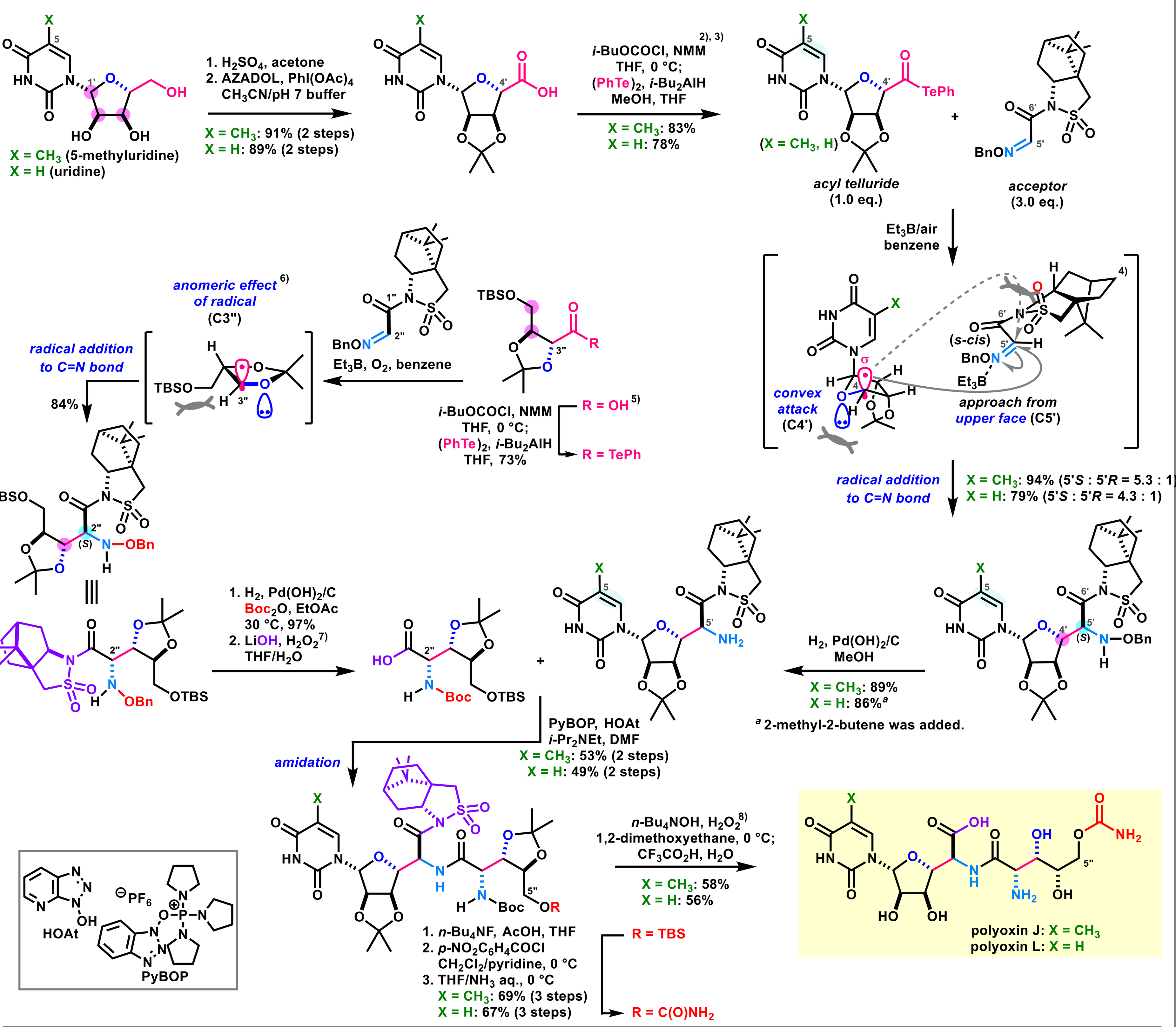
1) Fujino, H.; Nagatomo, M.; Inoue, M. *manuscript in preparation*. 2) Beckwith, A. L. J.; Hay, B. P. *J. Am. Chem. Soc.* **1989**, *111*, 230. 3) Inoue, M. *Acc. Chem. Res.* **2017**, *50*, 460.

2-1. Unified Synthetic Plan of Polyoxins



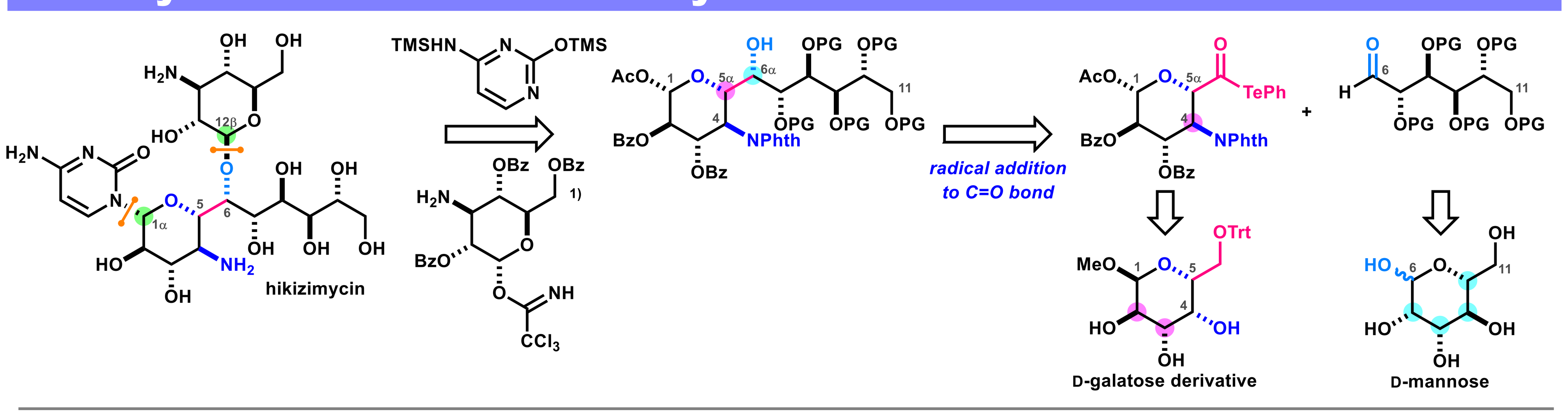
1) Oppolzer, W. *Tetrahedron* **1987**, *43*, 1969. 2) Villalobos, M. N. *et al.* *Tetrahedron* **2009**, *65*, 8091.

2-2. Total Synthesis of Polyoxins



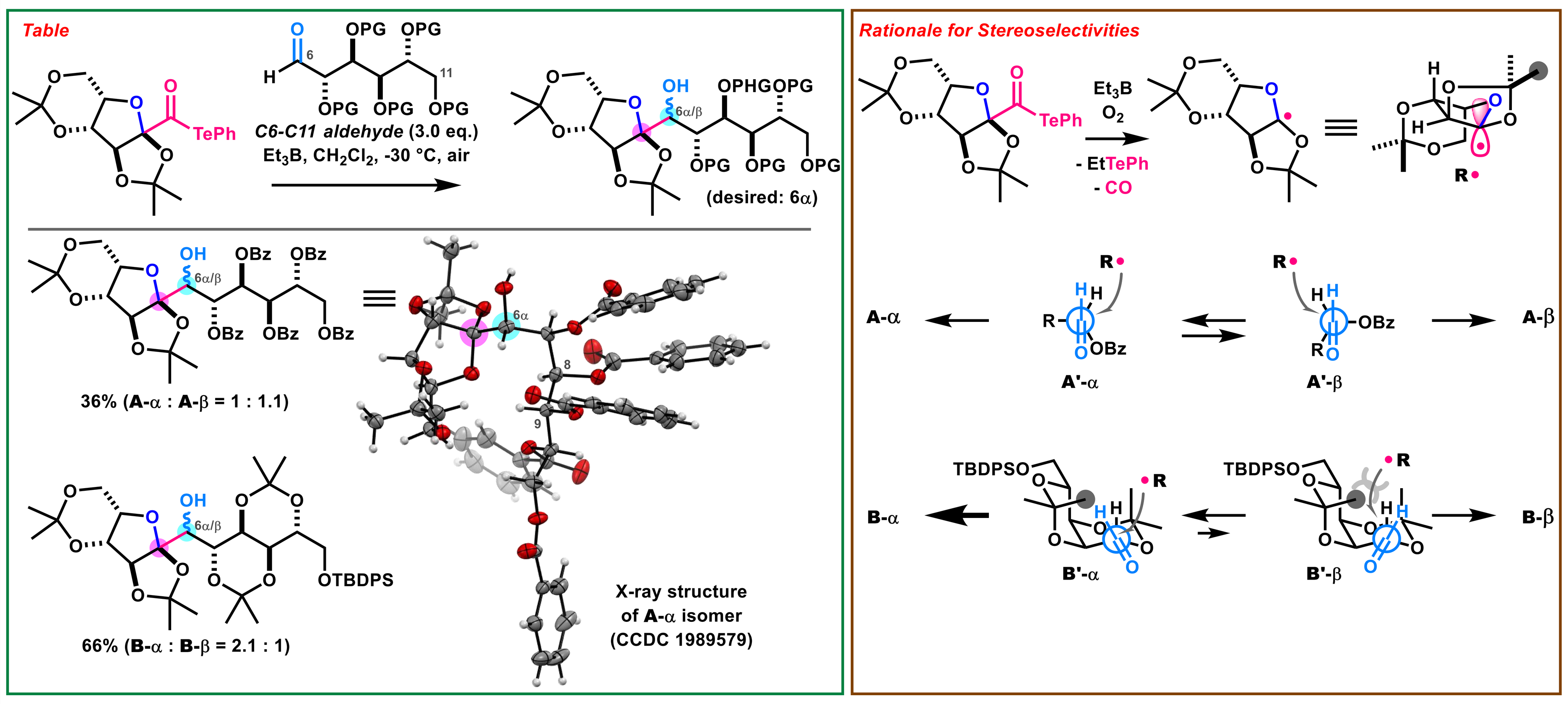
1) Shibuya, M.; Sato, T.; Tomizawa, M.; Iwabuchi, Y. *Chem. Commun.* **2009**, 1739. 2) (a) Chen, C.; Crich, D.; Papadatos, A. *J. Am. Chem. Soc.* **1992**, *114*, 8313. (b) Horning, B. D.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2013**, *135*, 6442. 3) Inoue, T.; Takeda, T.; Kambe, N.; Ogawa, A.; Ryu, I.; Sonoda, N. *J. Org. Chem.* **1995**, *59*, 5824. 4) Miyabe, H.; Ushiro, C.; Ueda, M.; Yamakawa, K.; Naito, T. *J. Org. Chem.* **2000**, *65*, 176. 5) Villalobos, M. N. *et al.* *Tetrahedron* **2009**, *65*, 8091. 6) Giese, B.; Dupuis, J. *Tetrahedron Lett.* **1984**, *25*, 1349. 7) Oppolzer, W.; Kingna, A. *Helv. Chim. Acta* **1989**, *72*, 1337. 8) 1) Hasegawa, Y.; Yamamoto, H. *Synlett* **1998**, 882.

3-1. Synthetic Plan for Hikizimycin

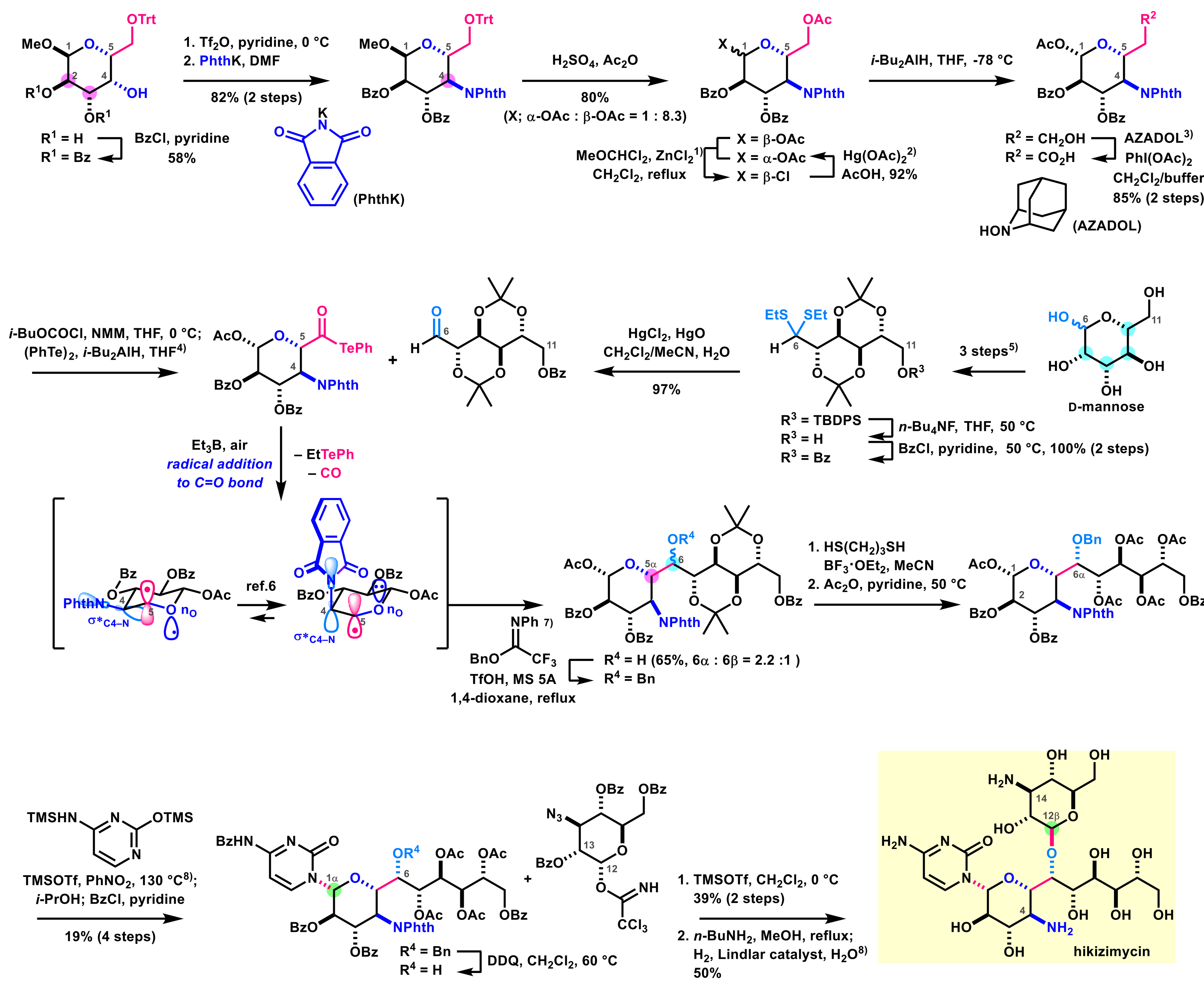


1) Wang, A. P.; Liu, C.; Yang, S.; Zhao, Z. H.; Lei, P.S. *Tetrahedron* **2016**, *72*, 285.

3-2. Optimization of Chemical Structure of C6-C11 Aldehydes

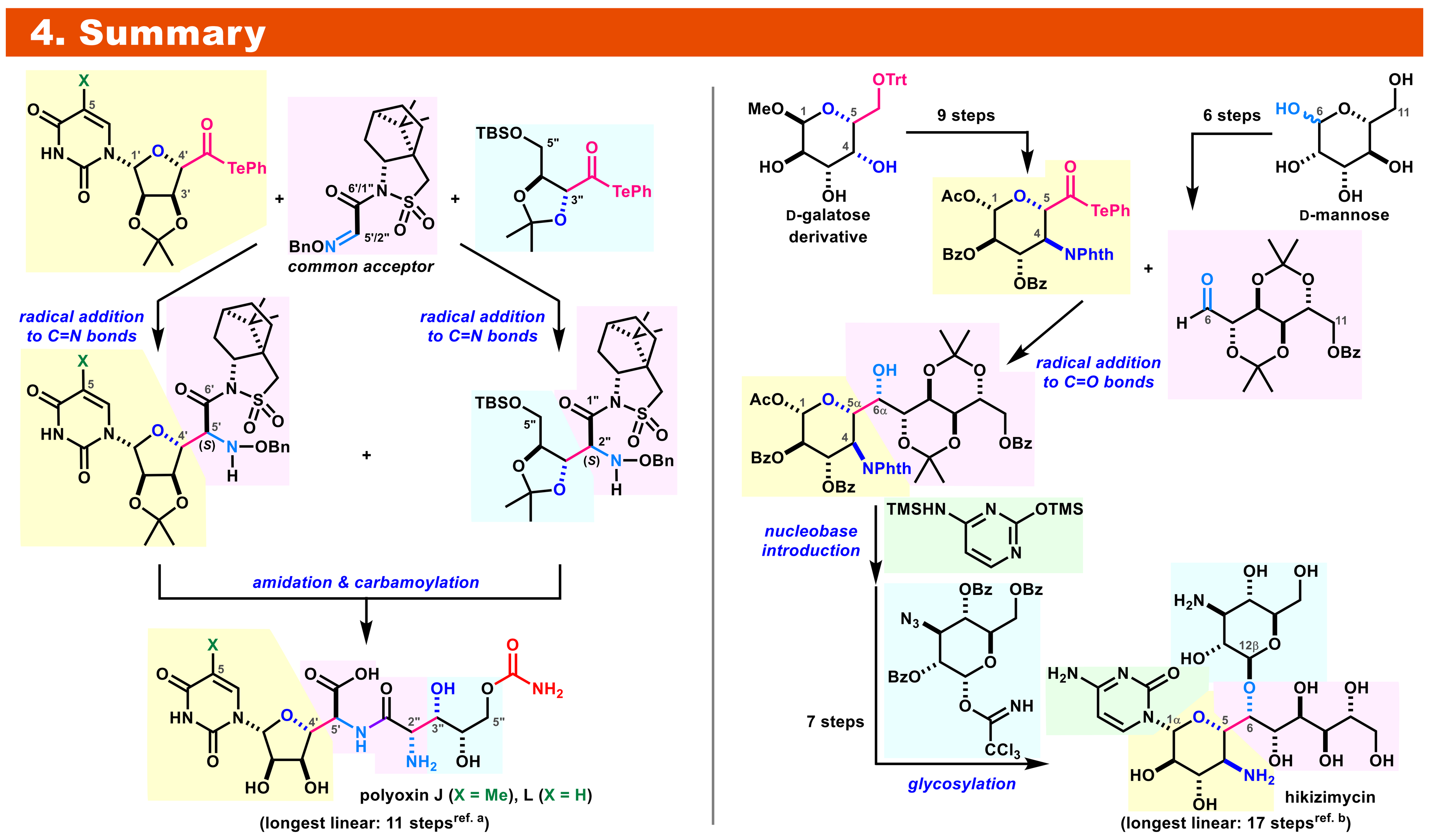


3-3. Total Synthesis of Hikizimycin



1) Kováč, P.; Taylor, R. B.; Glaudemans, C. P. J. *J. Org. Chem.* **1985**, *50*, 5323. 2) Withers, S. G.; Percival, M.; Street, I. P. *Carbohydr. Res.* **1989**, *187*, 43. 3) Shibuya, M.; Tomizawa, M.; Suzuki, I.; Iwabuchi, Y. *J. Am. Chem. Soc.* **2006**, *128*, 8412. 4) Inoue, T.; Takeda, T.; Kambe, N.; Ogawa, A.; Ryu, I.; Sonoda, N. *J. Org. Chem.* **1994**, *59*, 5824. 5) Dondoni, A.; Marra, A.; Merino, P. *J. Am. Chem. Soc.* **1994**, *116*, 3324. 6) Dupuis, J.; Giese, B.; Rüegge, D.; Fischer, H.; Korth, H.-G.; Sustmann, R. *Angew. Chem. Int. Ed.* **1984**, *23*, 896. 7) (a) Okada, Y.; Ohtsu, M.; Bando, M.; Yamada, H. *Chem. Lett.* **2007**, 992. (b) Yu, B.; Tao, H. *Tetrahedron Lett.* **2001**, *42*, 2405. 8) Ikemoto, N.; Schreiber, S. L. *J. Am. Chem. Soc.* **1990**, *112*, 9657.

4. Summary



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(C) See, related study: Fukuda, T.; Nagatomo, M.; Inoue, M. *Org. Lett.* **2020**, *22*, 6468-6472.