Synthesis of Strophasterol A Guided by a Proposed Biosynthesis and Innate Reactivity

How would you synthesize A from ergosterol?

1) SeO₂, t-BuOOH
2) Burgess’ reagent
3) MMPP
4) PCC, 4-Chloropyridine·HCl

Structure of MMPP?

Think about a mechanism for step 4.

Come up with a mechanism for step 5.

5) KOH, t-BuOH
6) EtSH, EDC·HCl, DMAP
7) TESH, Pd/C
8) NaBH₄
9) BF₃·Et₂O, AcOH
10) I₂, PPh₃, imidazole
11) Et₃B, O₂, n-Bu₃SnH

Step 6–7: Who invented this protocol?

Come up with a mechanism for step 11.

12) MMPP
13) PDC, t-BuOOH
14) NaBH₄
15) KOH

(+)-Strophasterol A