Component-based Synthesis of Trioxacarcin A


Name the reaction of step 1?
Hint: The (S)-enantiomer is obtained after step 2

Step 6: Why is it important to form the mixed anhydride as the activated species over an acid chloride?
9) t-BuOLi (3 equiv.), then (MeO)₂SO₂
10) K₂OsO₄, NaIO₄
11) BrBcat
12) t-Bu₂SiCl₂, Et₃N, HOBt

Please provide a mechanism and the name reaction of step 9.

13) B, Rh₂(OAc)₄
14) Et₃N • 3HF

Please provide a mechanism for the key step happening in step 13. Hint: It involves a 1,3-dipolar cycloaddition reaction.
15) E, TMSNTf₂
16) DDQ
17) F, AgPF₆
18) K₂CO₃, MeOH
19) Et₃N • 3HF