Synthesis of Waihoensene

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1) \(A\), then \(\text{NH}_4\text{Cl}\)
2) \(B, C, \text{AlMe}_3\), then \(D\)
3) \(m\text{CPBA}\)
4) allyl-SiMe\(_3\), BF\(_3\)•OEt\(_2\)
5) O\(_3\), then PPh\(_3\)
6) Ohira Bestmann reagent, K\(_2\)CO\(_3\)

7) \(t\)-BuOK
8) Co\(_2\)(CO)\(_8\), N\(_2\)O

2) name the functional group in \(C\):
3) name of reaction? which related reaction?
4) name of reaction?
5) name of reaction?

7) classify the ring closure according to the Baldwin rules.
8) name of reaction?
9) ZnMe$_2$, LiBr, Ni(acac)$_2$
10) 2-ethyl-2-methyl-1,3-dioxolane, p-TsOH
11) Ph$_3$PMeBr, t-BuOK
12) HCl
13) Fe(acac)$_3$, PhSiH$_3$, EtOH
14) LiHMDS, Mel
15) Ph$_3$PMeBr, t-BuOK

13) explain stereochemical outcome mechanistically