Enantioselective Total Synthesis of (−)-Artatrovirenol A

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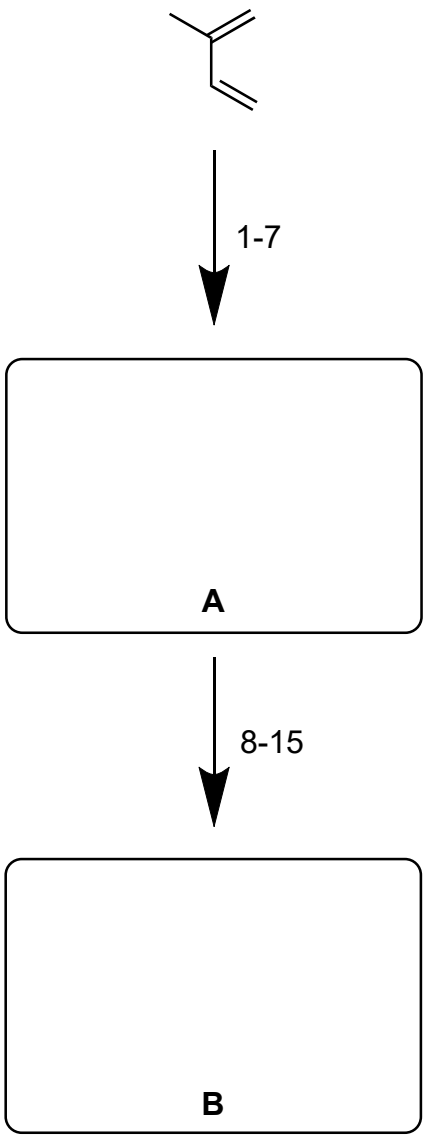
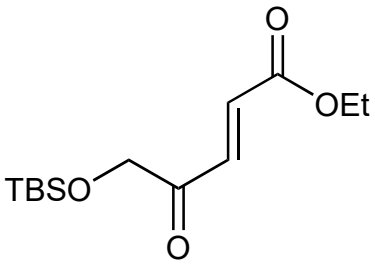
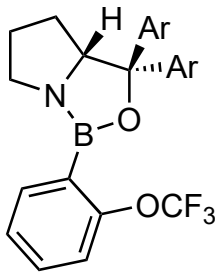
J. Am. Chem. Soc. **2023**, 145, 24408−24415.



1) **1**, **2,** Tf_2NH, CH_2Cl_2, −78 °C,
2) $NaBH_4$, MeOH
3) $TsOH·H_2O$(cat.), toluene, 80 °C
4) TBAF, THF
5) MsCl, Et_3N, CH_2Cl_2
6) TBAI, 1,4-dioxane, reflux, *then* DBU, 60°C,
7) KHMDS, *then* HMPA, *then* TBSCl, THF



1



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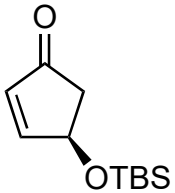

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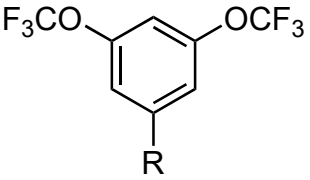
8) **3**, TESOTf, 2,6-t-Bu-pyridine, then TFA, CH_2Cl_2
9) I_2, PPh_3, CH_2Cl_2
10) HF·pyridine, MeCN
11) Jones reagent, acetone
12) MOMBr, DIPEA, CH_2Cl_2,−78 °C
13) Oxone, $NaHCO_3$, acetone
14) hv (254nm), MeCN, *then* TMSBr, CH_2Cl_2, *then* MeOH,
15) DBU, MeCN

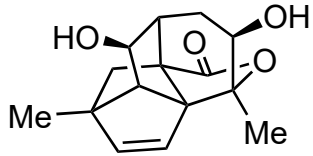
Ar =



8) Name of reaction?

14) Name of reaction?

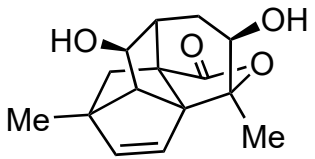
15) Structure of DBU?



(−)-Artatrovirenol A

B

17-21



(−)-Artatrovirenol A

16) $LiAlH(Ot\text{-}Bu)_3$, THF, −40 °C
17) KHMDS, TBSCl, THF,−78 °C
18) $BF_3{\cdot}OEt_2$, CH_2Cl_2, −78 °C
19) KHMDS, *then* ClC(S)OPh, THF,−78 °C
20) 220°C, Ph_2O *then* TBAF
21) $t\text{-}BuNH_2{\cdot}BH_3$, DCE, 60°C

20) Name of Reaction?