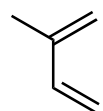


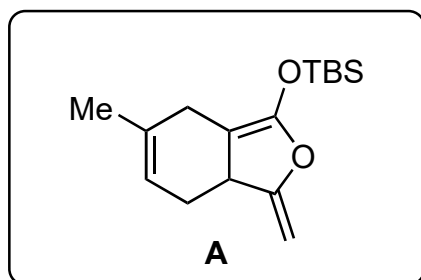
# Enantioselective Total Synthesis of (-)-Artatrovireinol A

Rémi Lavernhe, Patrick Domke, Qian Wang, and Jieping Zhu\*

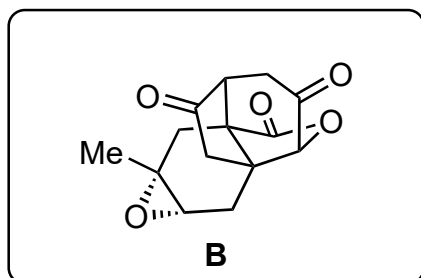
J. Am. Chem. Soc. **2023**, 145, 24408–24415.



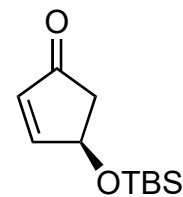
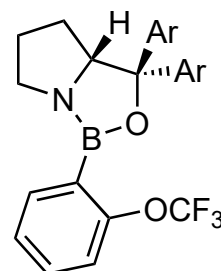
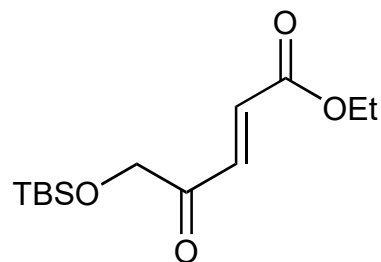
1-7



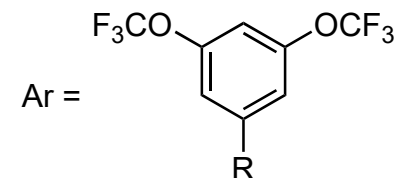
8-15



- 1) **1**, **2**, Tf<sub>2</sub>NH, CH<sub>2</sub>Cl<sub>2</sub>, -78 °C,
- 2) NaBH<sub>4</sub>, MeOH
- 3) TsOH·H<sub>2</sub>O(cat.), toluene, 80 °C
- 4) TBAF, THF
- 5) MsCl, Et<sub>3</sub>N, CH<sub>2</sub>Cl<sub>2</sub>
- 6) TBAI, 1,4-dioxane, reflux, *then* DBU, 60°C,
- 7) KHMDS, *then* HMPA, *then* TBSCl, THF



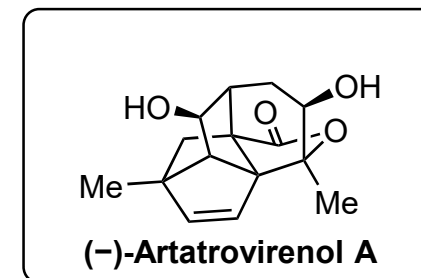
- 8) **3**, TESOTf, 2,6-t-Bu-pyridine, *then* TFA, CH<sub>2</sub>Cl<sub>2</sub>
- 9) I<sub>2</sub>, PPh<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>
- 10) HF·pyridine, MeCN
- 11) Jones reagent, acetone
- 12) MOMBr, DIPEA, CH<sub>2</sub>Cl<sub>2</sub>, -78 °C
- 13) Oxone, NaHCO<sub>3</sub>, acetone
- 14) hv (254nm), MeCN, *then* TMSBr, CH<sub>2</sub>Cl<sub>2</sub>, *then* MeOH,
- 15) DBU, MeCN



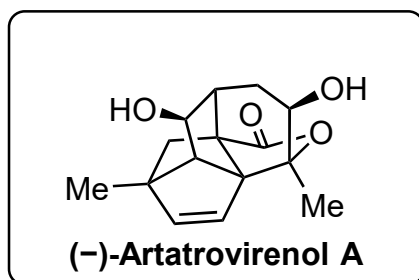
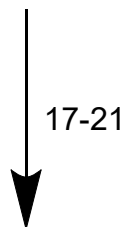
8) Name of reaction?  
Mukaiyama Michael Addition

14) Name of reaction?  
De Mayo, Retro Aldol

15) Structure of DBU?



**B**



- 16)  $\text{LiAlH}(\text{O}t\text{-Bu})_3$ , THF,  $-40\text{ }^\circ\text{C}$
- 17) KHMDS, TBSCl, THF,  $-78\text{ }^\circ\text{C}$
- 18)  $\text{BF}_3 \cdot \text{OEt}_2$ ,  $\text{CH}_2\text{Cl}_2$ ,  $-78\text{ }^\circ\text{C}$
- 19) KHMDS, *then*  $\text{ClC}(\text{S})\text{OPh}$ , THF,  $-78\text{ }^\circ\text{C}$
- 20)  $220\text{ }^\circ\text{C}$ ,  $\text{Ph}_2\text{O}$  *then* TBAF
- 21)  $t\text{-BuNH}_2 \cdot \text{BH}_3$ , DCE,  $60\text{ }^\circ\text{C}$

20) Name of Reaction?  
Chugaev elimination