A Concise Total Synthesis of (+)-Waihoensene Guided by Quaternary Center Analysis

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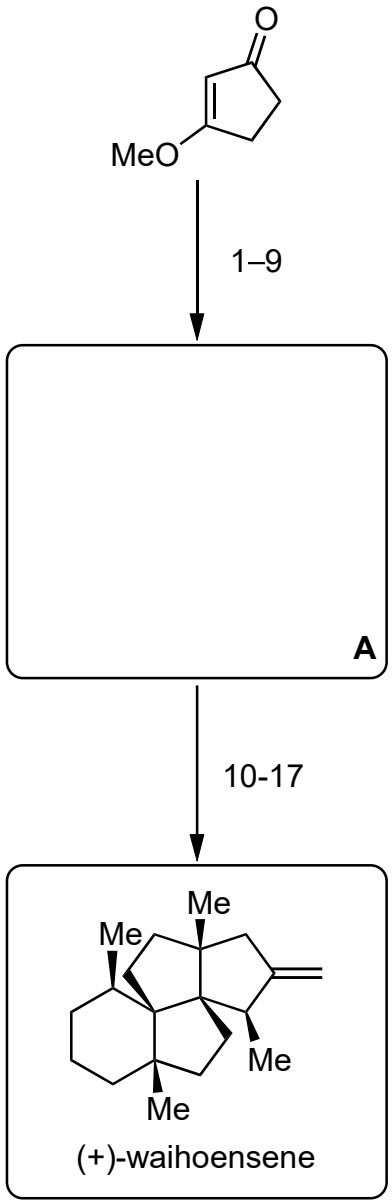
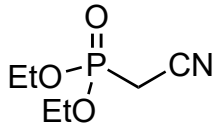


1) **1**
2) $Cu(OTf)_2$, $AlMe_3$, **2**
3) NaHMDS, Mander's reagent
4) TBAF
5) Ph_3PAuCl, AgOTf
6) H_2, PtO_2
7) $Ph_3P{=}CH_2$
8) DIBAL-H
9) DMP

1



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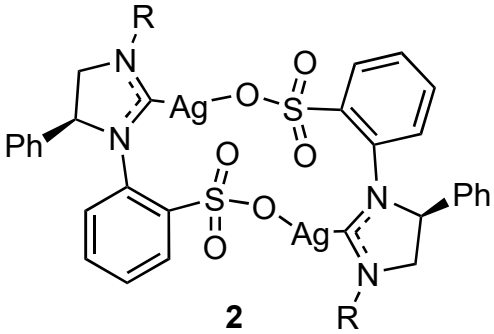


2

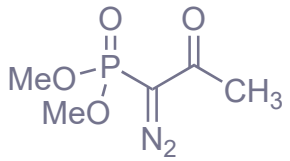
R = 2,6-$Et_2C_6H_3$

10) **3**, *t*-BuOK
11) Mg, MeOH
12) DIBAL-H
13) Ohira-Bestmann reagent, K_2CO_3, MeOH
14) $Co_2(CO)_8$, CO
15) MeLi, CuCN, $BF_3.Et_2O$
16) LiHMDS, MeI
17) $Ph_3P{=}CH_2$

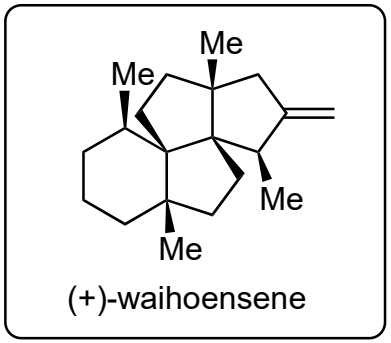
2) Who developed this chemistry
3) Structure of Mander's reagent;
Hint: two regioisomers were obtained

5) Name of the reaction
13) Structure of Ohira-Bestmann reagent
14) Name of the reaction; draw the catalytic cycle

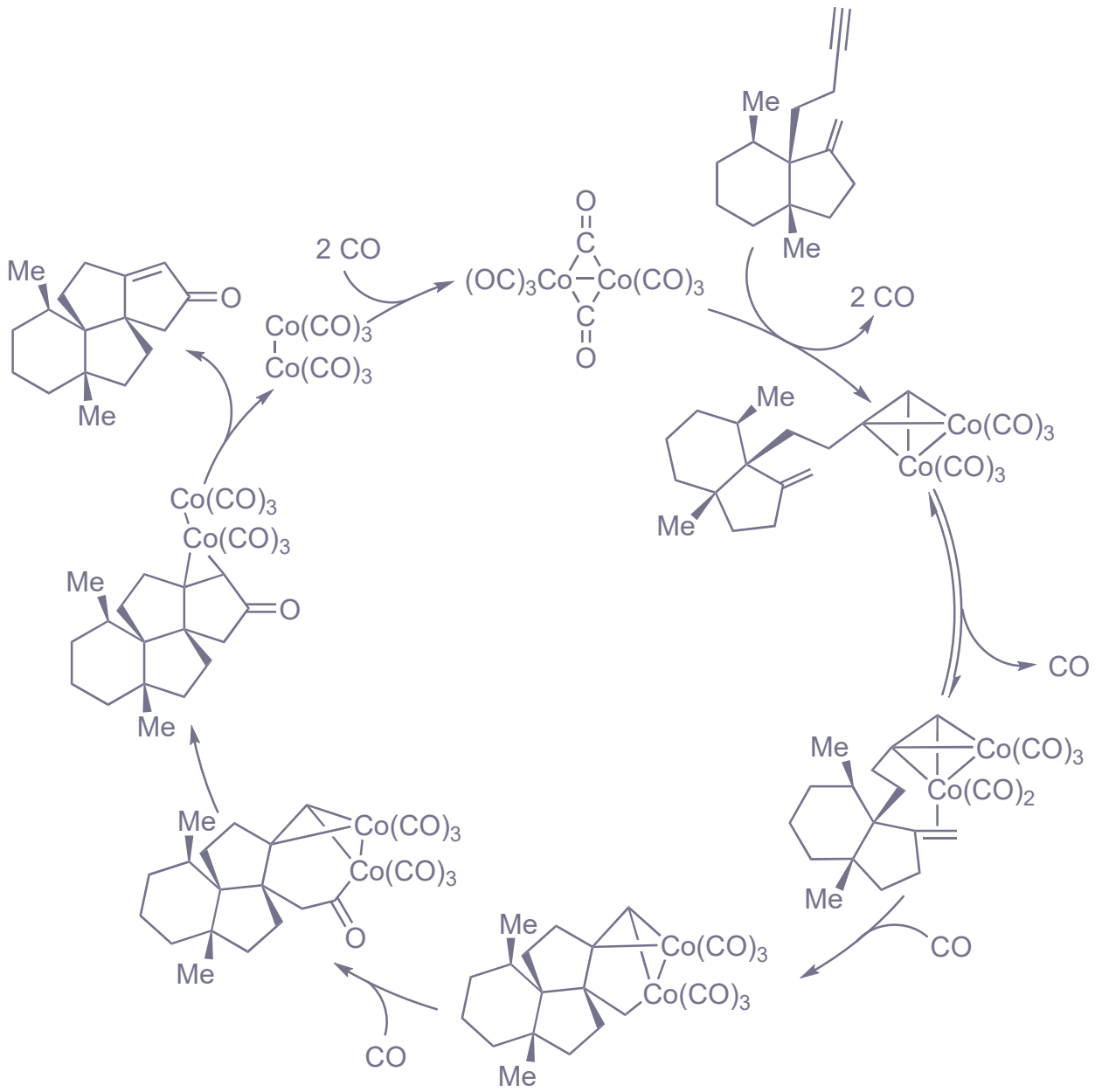
2) Hoveyda
3) MeO_2CCN
5) Conia-ene
13)



14) Pauson-Khand



14)


2 CO
Me
Me
O
Co(CO)3
Co(CO)3
(OC)3Co
Co(CO)3
O
C
C
O
2 CO
Me
Me
Co(CO)3
Co(CO)3
CO
Me
Co(CO)3
Co(CO)2
Me
CO
Me
Co(CO)3
Co(CO)3
Me
CO
Me
Co(CO)3
Co(CO)3
O
Me
Co(CO)3
Co(CO)3
Me
O
Me