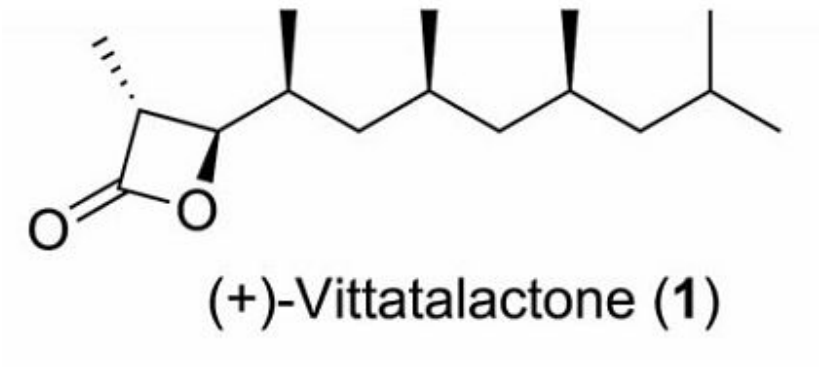
# Enantioselective Total Synthesis of (+)-Vittatalactone



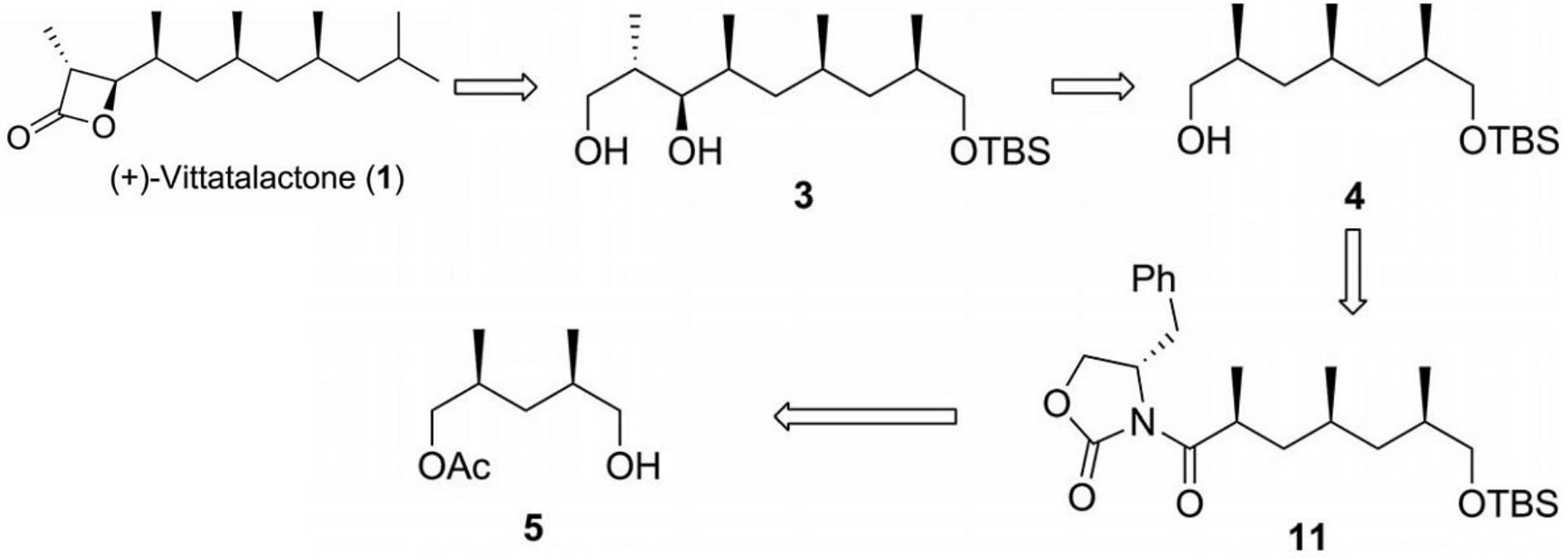

(+)-Vittatalactone (**1**)

**Агрегационный феромон**

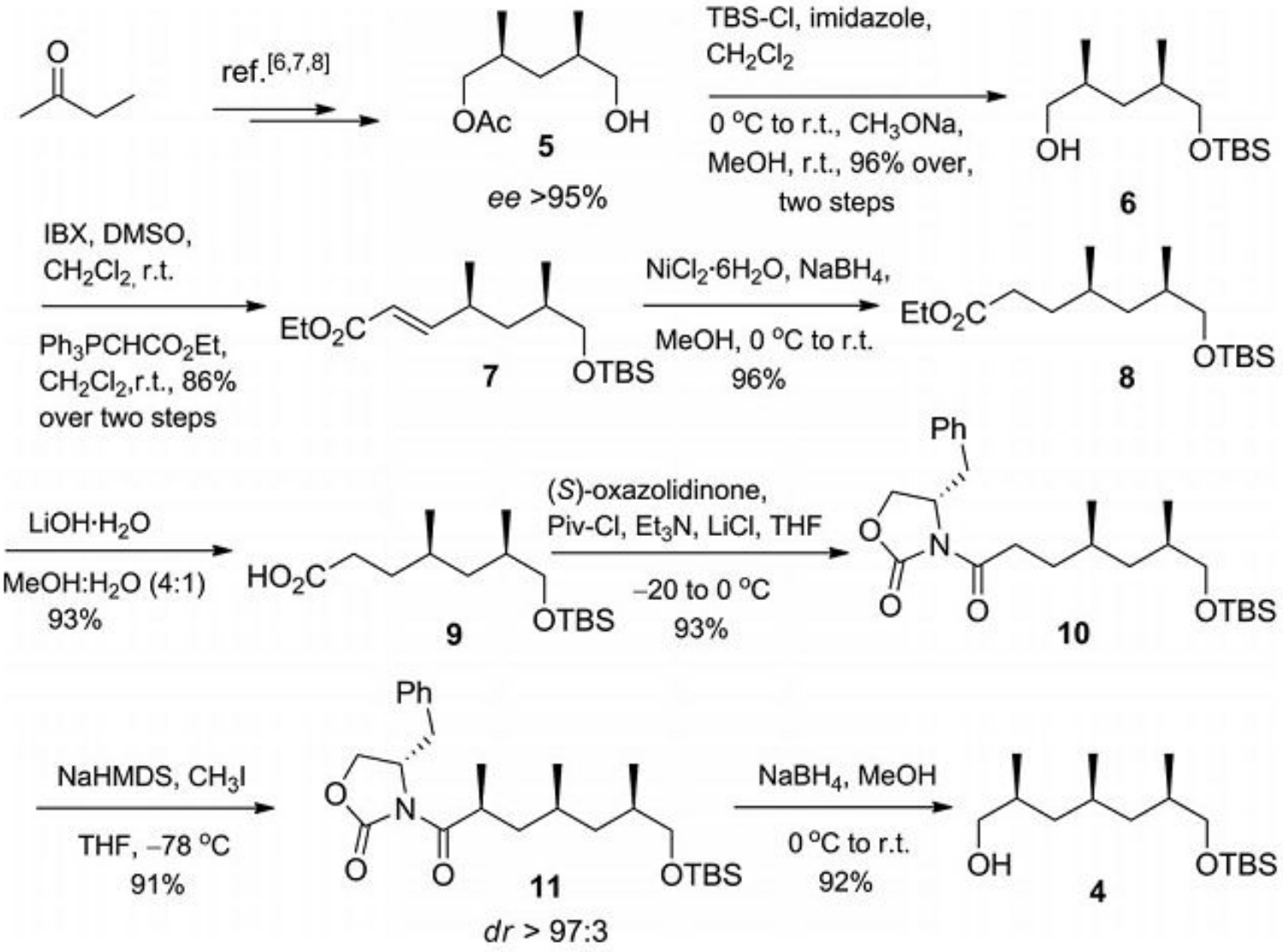
***Полосатый жук-огурец***

*Acalymma vittatum*

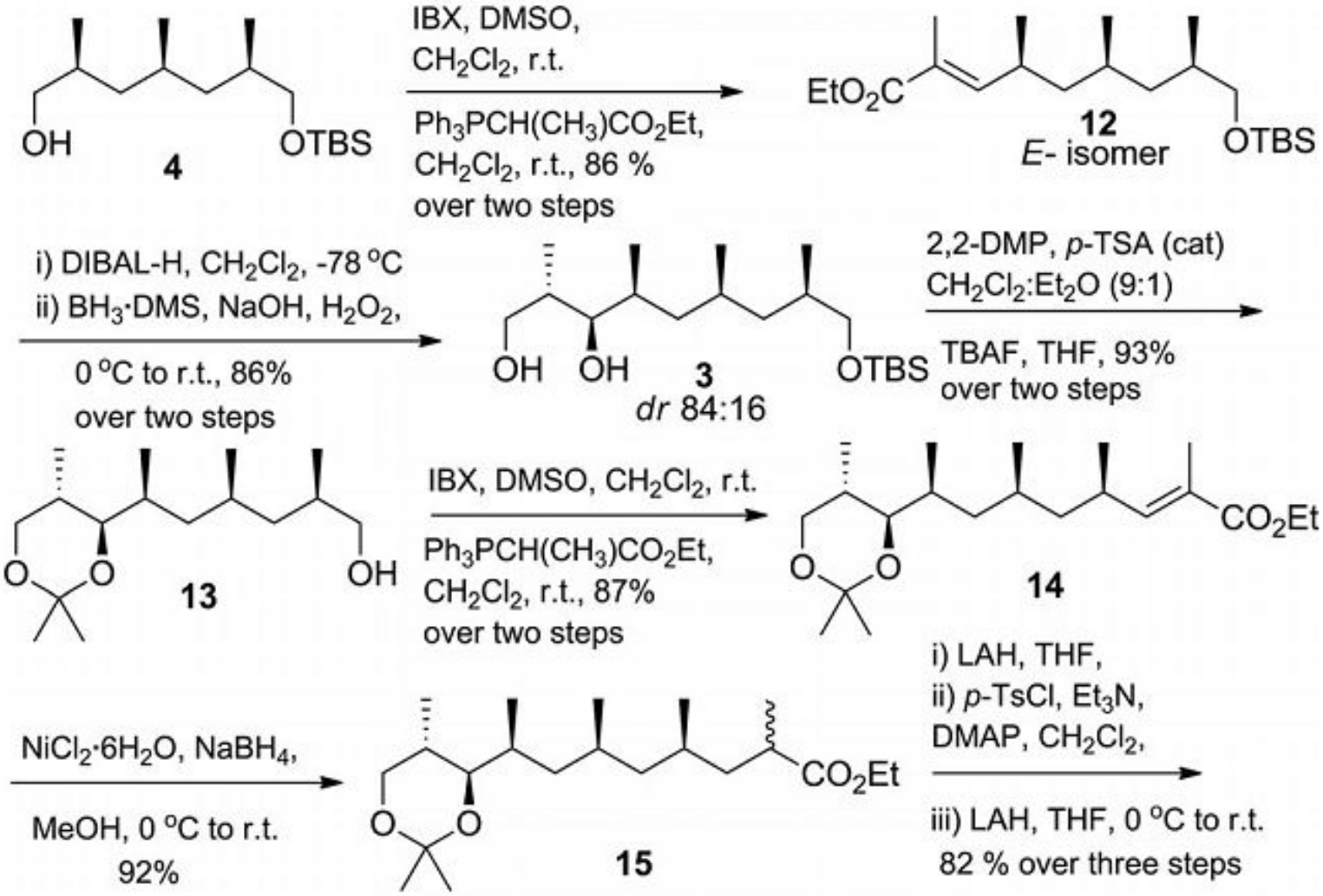
# Retrosynthetic analysis of (+)-vittatalactone (1)



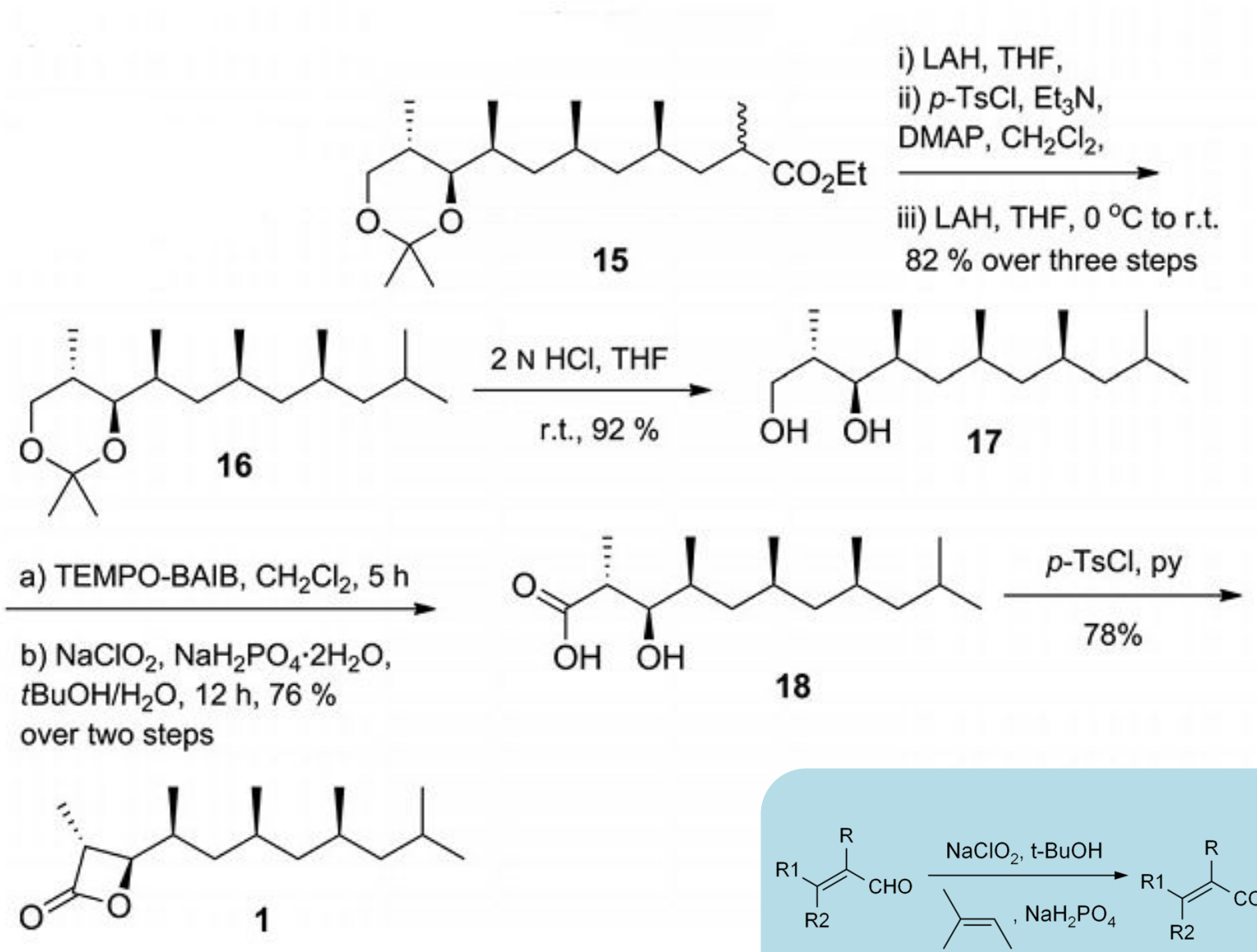
# Synthesis of alcohol 4

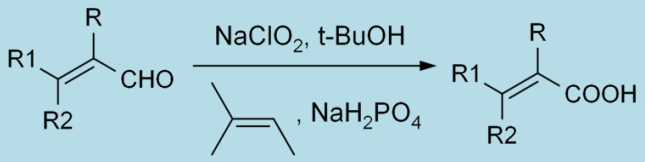


# Synthesis of (+)-vittatalactone (1)



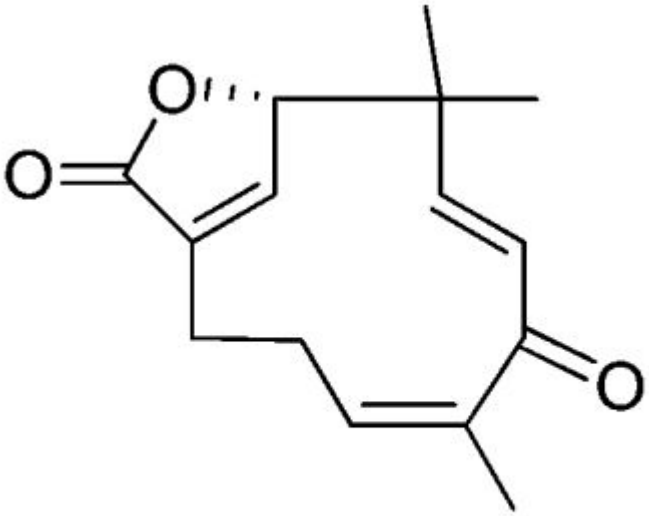
# Synthesis of (+)-vittatalactone (1)



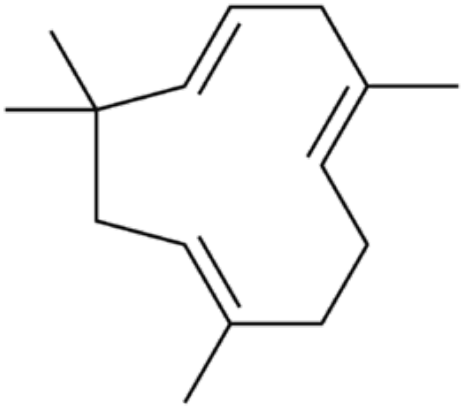

**Pinnick oxidation**

# A 12-membered to a strained 11-membered ring: first stereoselective total synthesis of (-)-asteriscunolide C



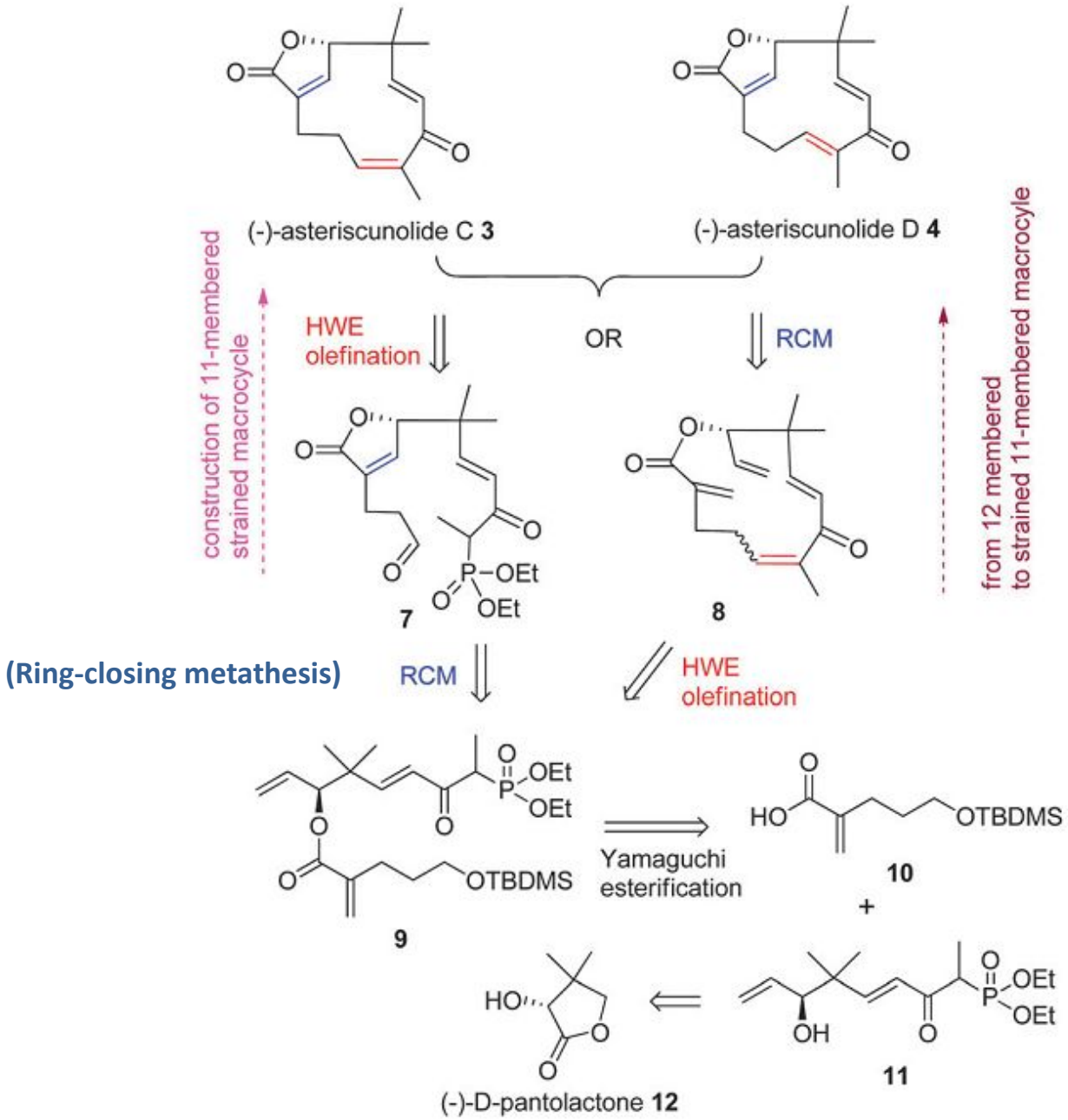

(-)-asteriscunolide C **3**

**Asteriscus aquaticus**

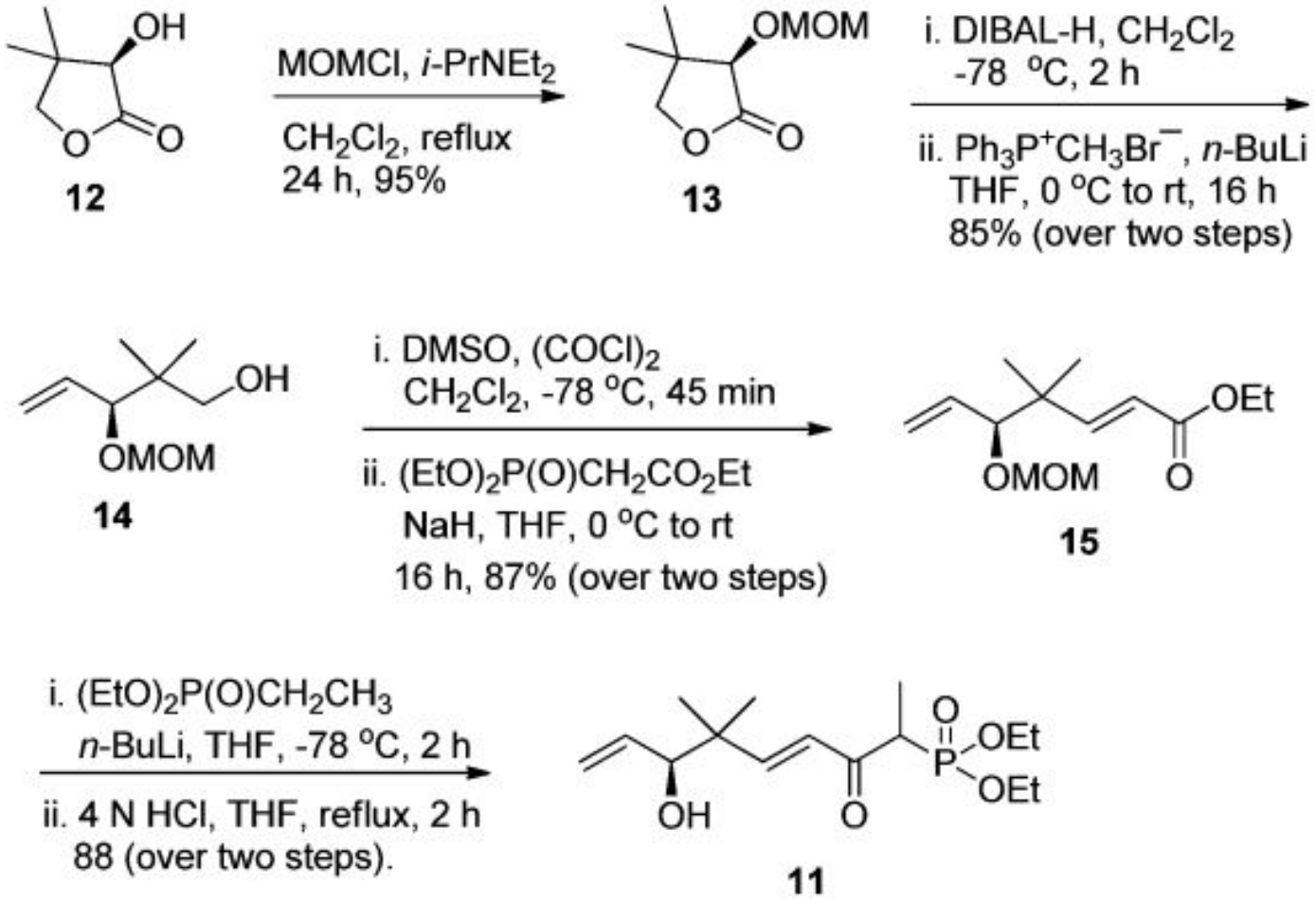


**Гумулен**

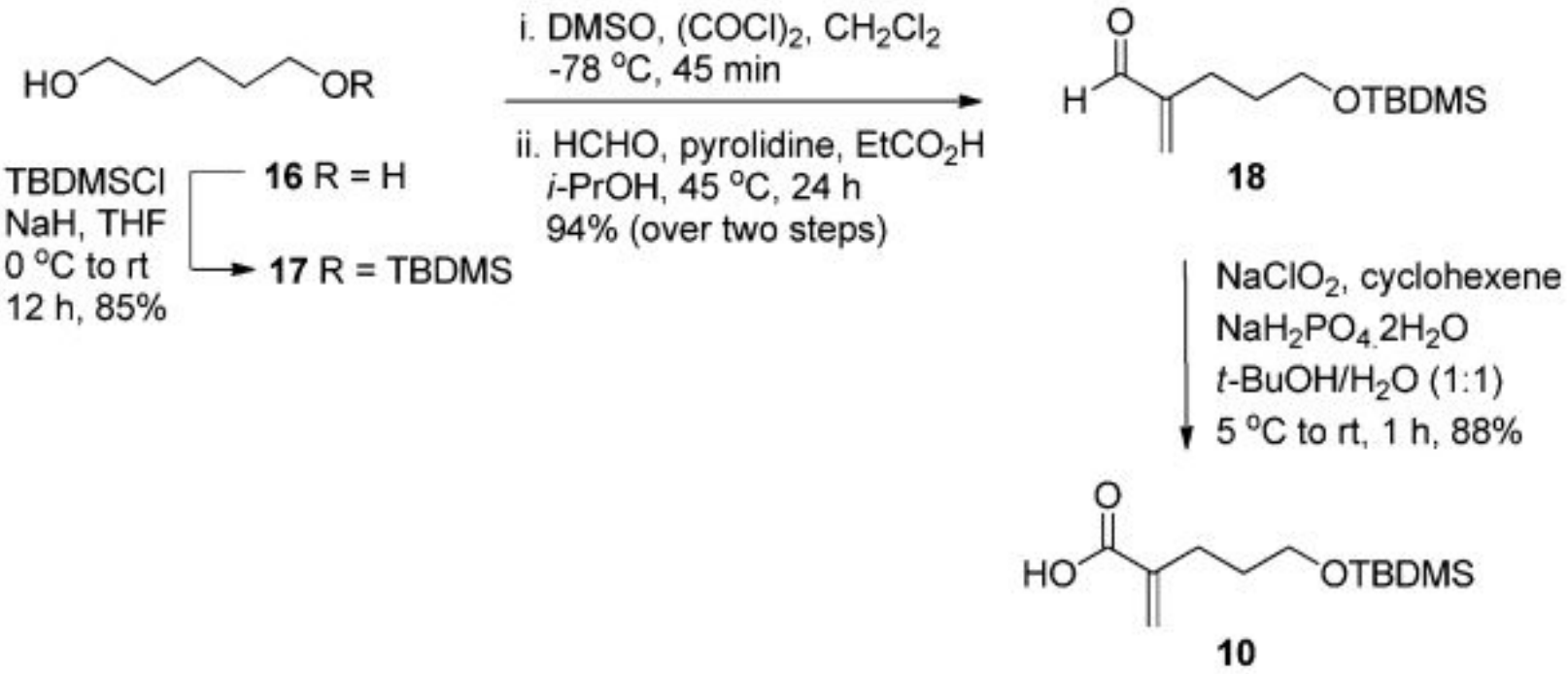
# Retrosynthesis of asteriscunolides C and D

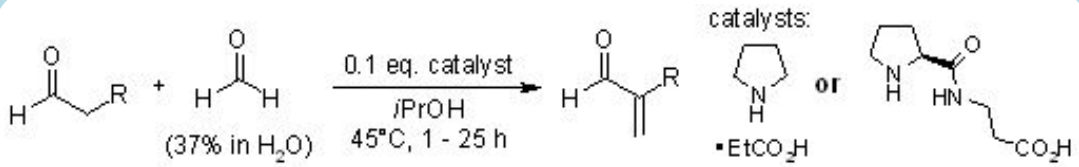


# Synthesis of allyl alcohol fragment 11



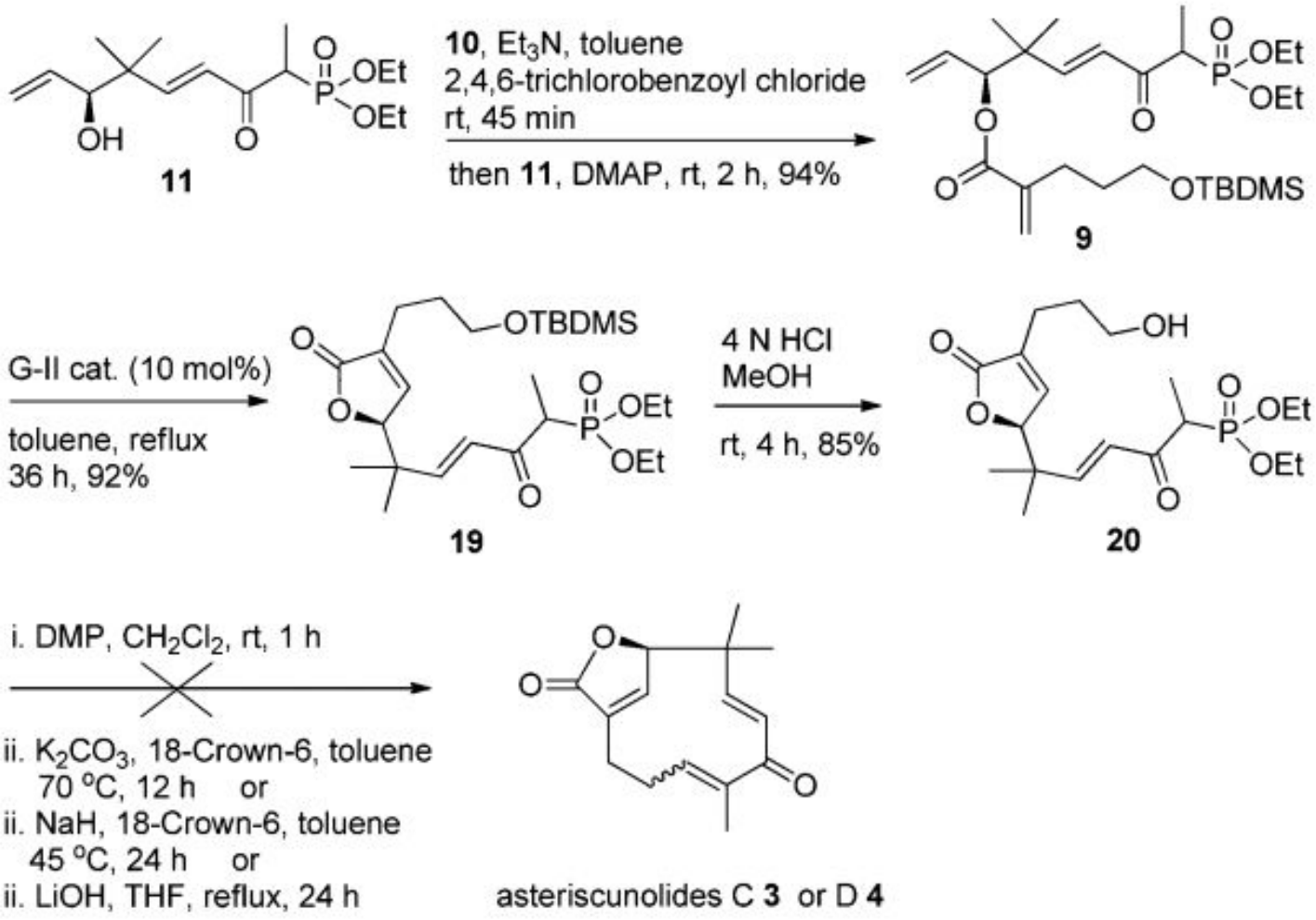
# Synthesis of acid fragment 10



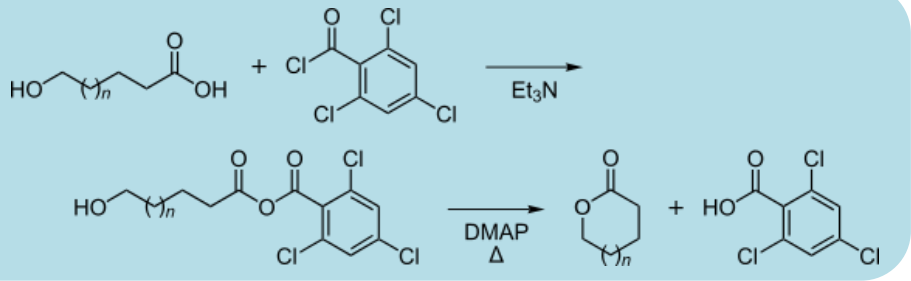




A. Erkkilä and P. M. Pihko, *J. Org. Chem.*, **2006**, *71*, 2538

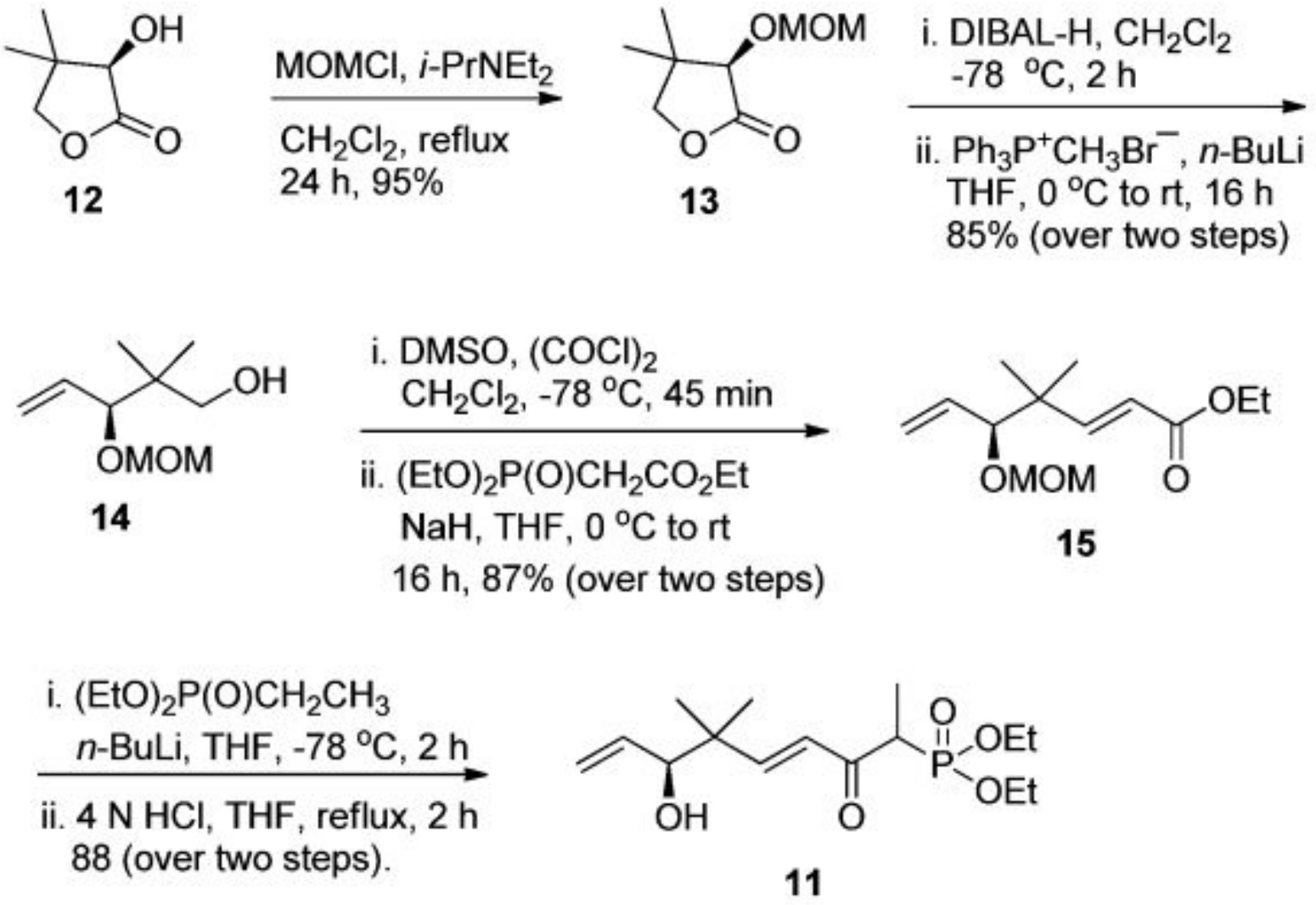
# Attempted intramolecular HWE-cyclization



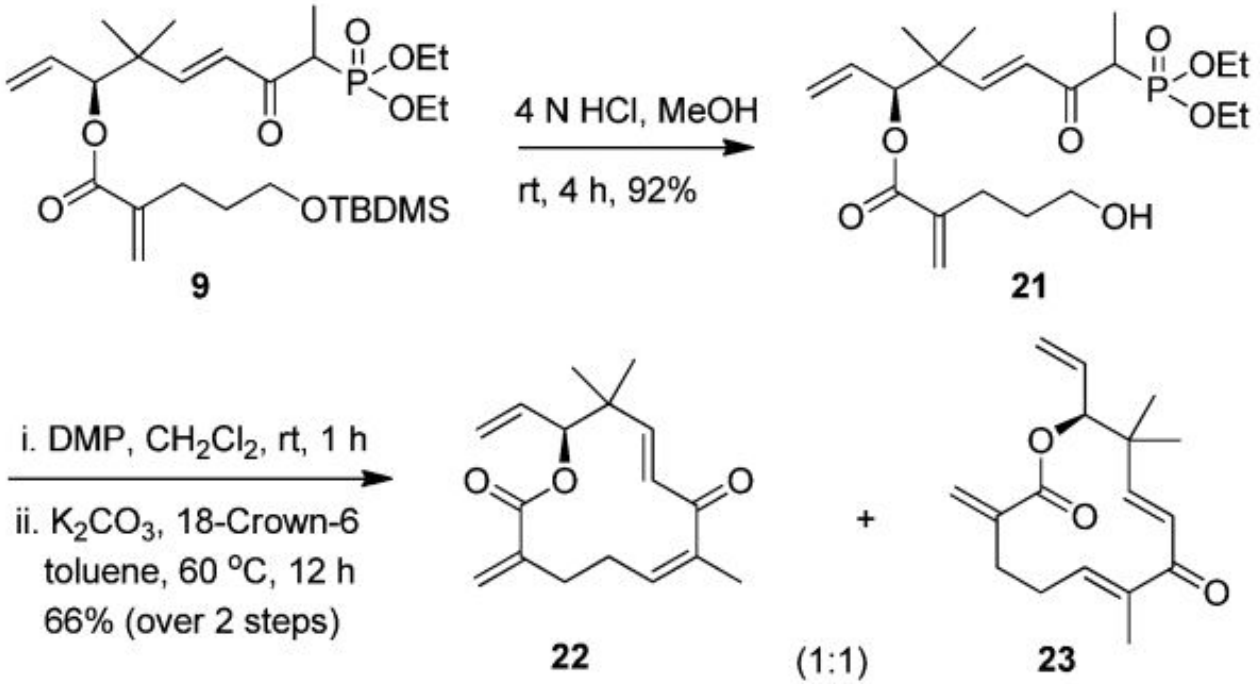

**Yamaguchi esterification**

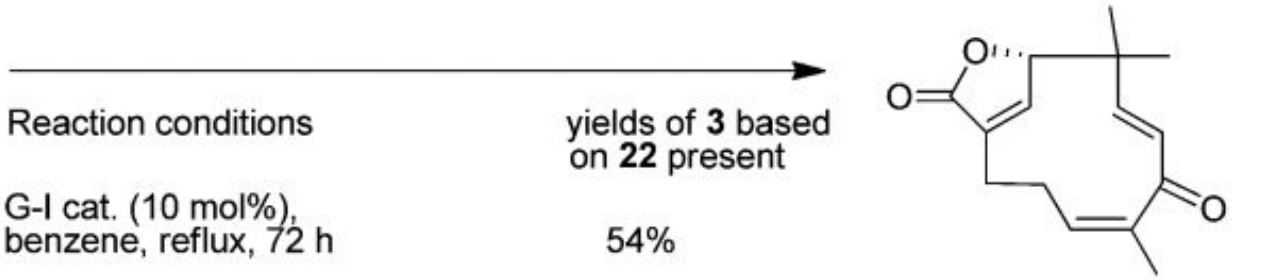


# Synthesis of clavulactone analogues 26 and 27



# An unsaturation to the lactone motif



| Reaction conditions | yields of **3** based on **22** present |
|---|---|
| G-I cat. (10 mol%), benzene, reflux, 72 h | 54% |
| G-II cat. (10 mol%) benzene, reflux, 72 h | 70% |
| G-II cat. (15 mol%) toluene, reflux, 72 h | 90% |

(-)-asteriscunolide C **3**