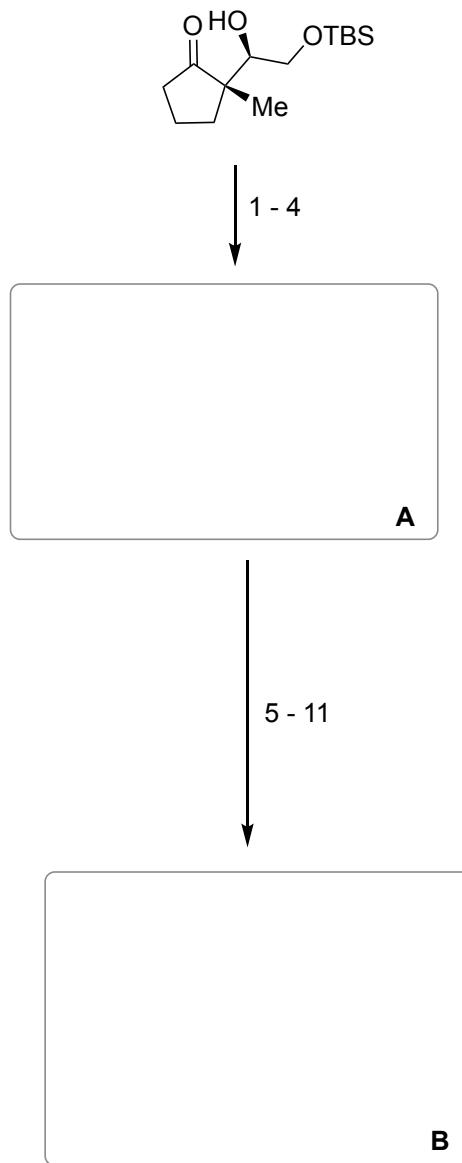


Total Synthesis of Gukulenin B via Sequential Tropolone Functionalizations

K. C. Nicolaou, Ruocheng Yu, Zhaoyong Lu, and Fernando G. Alvarez *J. Am. Chem. Soc.* 2022, 144, 5190-5196.



3) Name of the reaction?

4) Martin sulfurane structure?

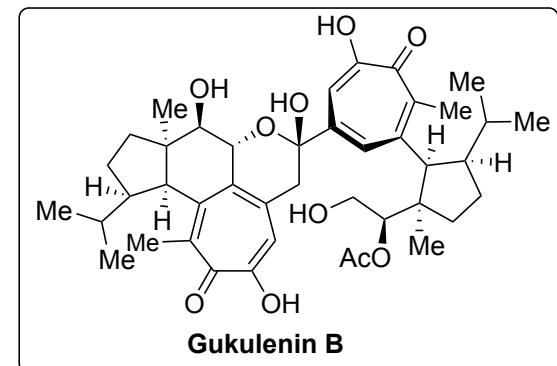
5) Name of the reaction?

7) Name of the catalyst?

8) Structure of Nysted reagent?

9) Structure of Crabtree's catalyst

10) Structure of Palau'chlor?
Role of the 2,4,6-trimethylaniline?



12-16

- 12) HCl, MeOH
13) TsOH, Me₂C(OMe)₂
14) [Ir(cod)(OMe)]₂, dtbpy, B₂pin₂
15) NaBO₃
16) Comins' reagent, Et₃N

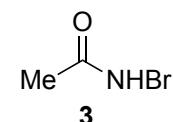
16) Structure of Comins' reagent?

C

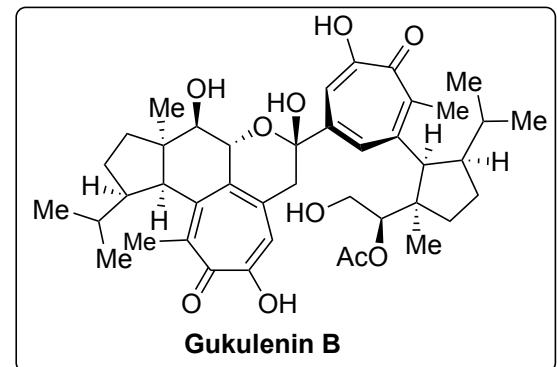
B

17-20

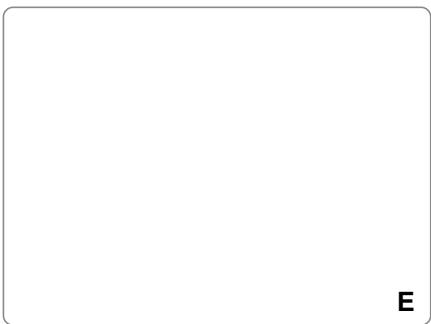
- 17) HCl, MeOH
18) DMP
19) MgBr₂, THF, reflux
20) 3



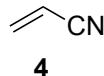
D



21-25



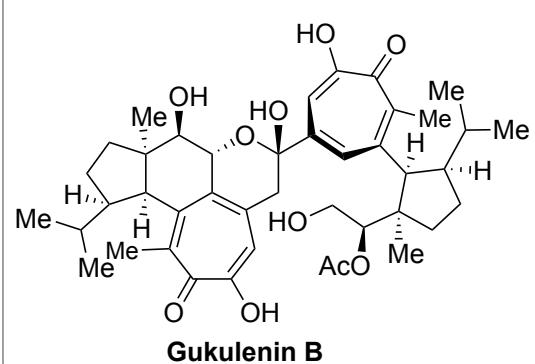
- 21) NaOBn (excess)
22) Mel
23) **4**, Cs₂CO₃
24) 1,4-cyclohexadiene, Pd/C
25) Et₃N, Comins' reagent



- 21) *hint* - 4 things happen
22) *hint* - selective mono-methylation

C

26-31



- 26) **5**, Pd(PPh₃)₄, CuDPP
27) **E**, Pd(Pt-Bu₃), *n*-Bu₃SnF
28) KHMDS
29) Me₂BBBr, DIPEA
30) Yb(OTf)₃, MeC(OMe)₃ *then* H₂O
31) MgI₂

