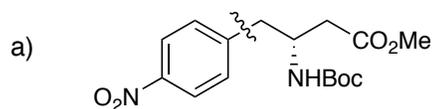


## Exercices

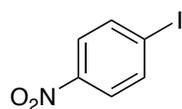
1) Pour les produits suivants obtenus par cross coupling, indiquez les déconnexions possibles

Indiquez une possibilité raisonnable de cross coupling et expliquez.

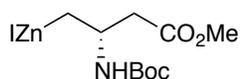


Stille n'est pas compatible avec  $sp^3$   
Kumada n'est pas compatible avec le CO de l'ester

→ Negishi



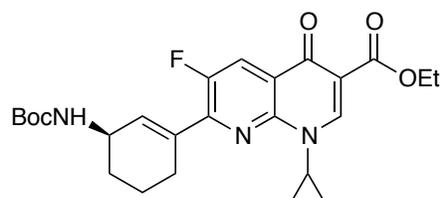
+



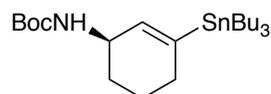
$Pd_2dba_3$ ,  $P(o-Tol)_3$

Jackson 98CC75  
Knodul 98T8275

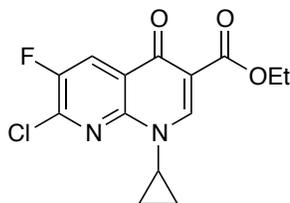
b)



Stille ou Suzuki seraient des bons choix car il y a  
une grande tolérance de groupes fonctionnels ;  
le fluorure ne devrait pas être affecté

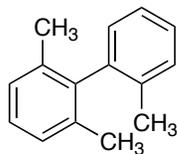


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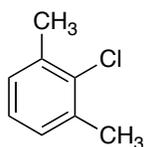


Laborde 90TL1837

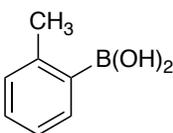
c)



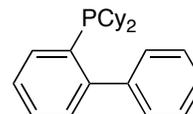
Toutes les méthodes sont applicables mais les substrats encombrés sont problématiques.  
Des méthodes ont été développées avec des ligands particuliers :



+



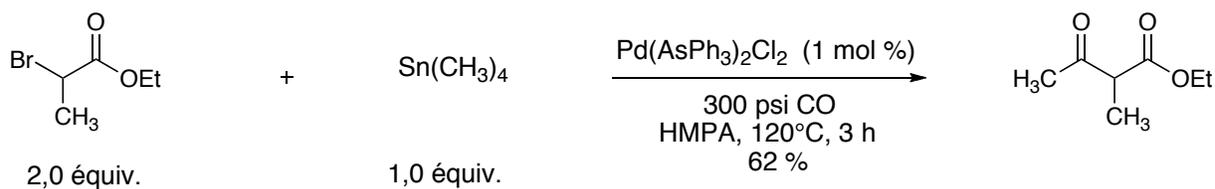
Ligand :

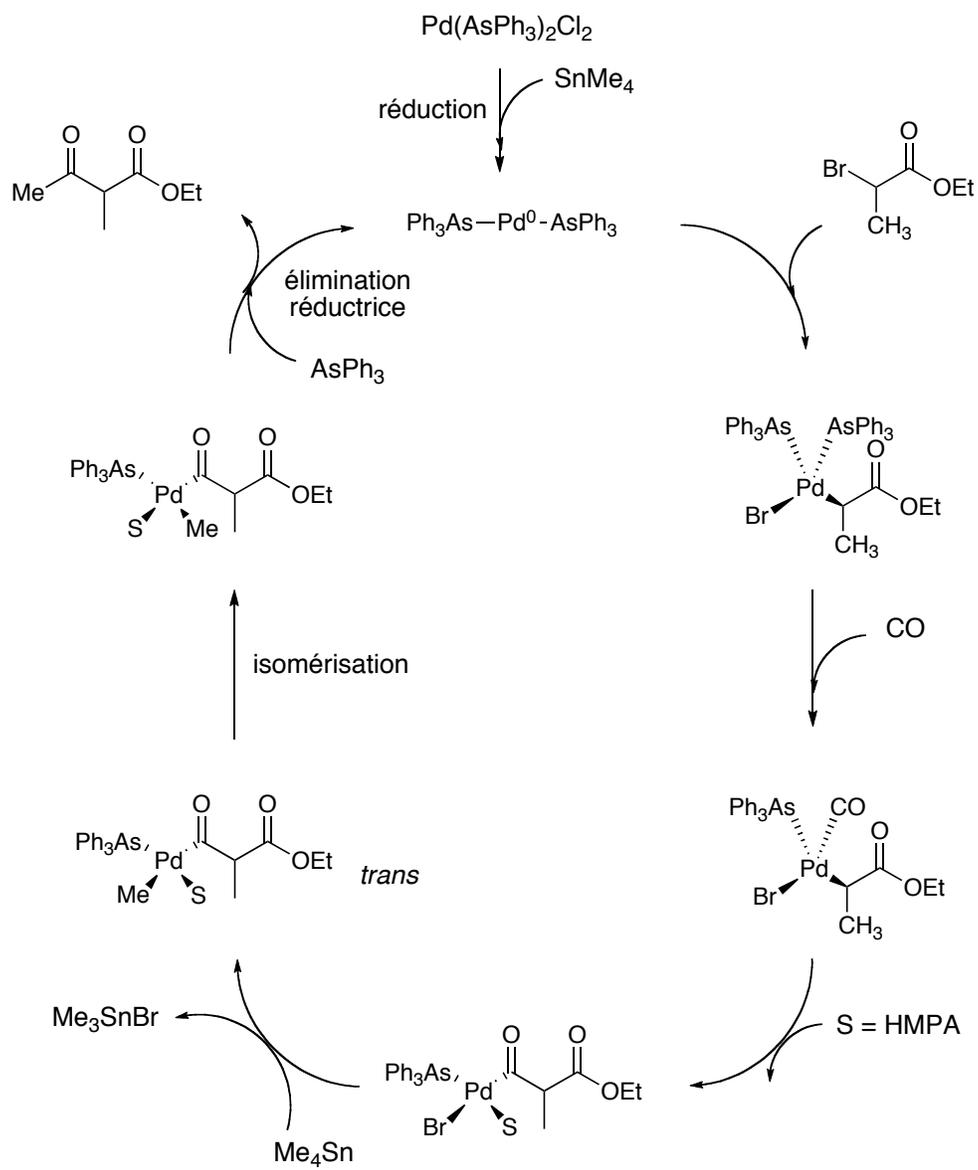


Suzuki : Pd(OAc)<sub>2</sub>, K<sub>3</sub>PO<sub>4</sub>, PhMe, Δ

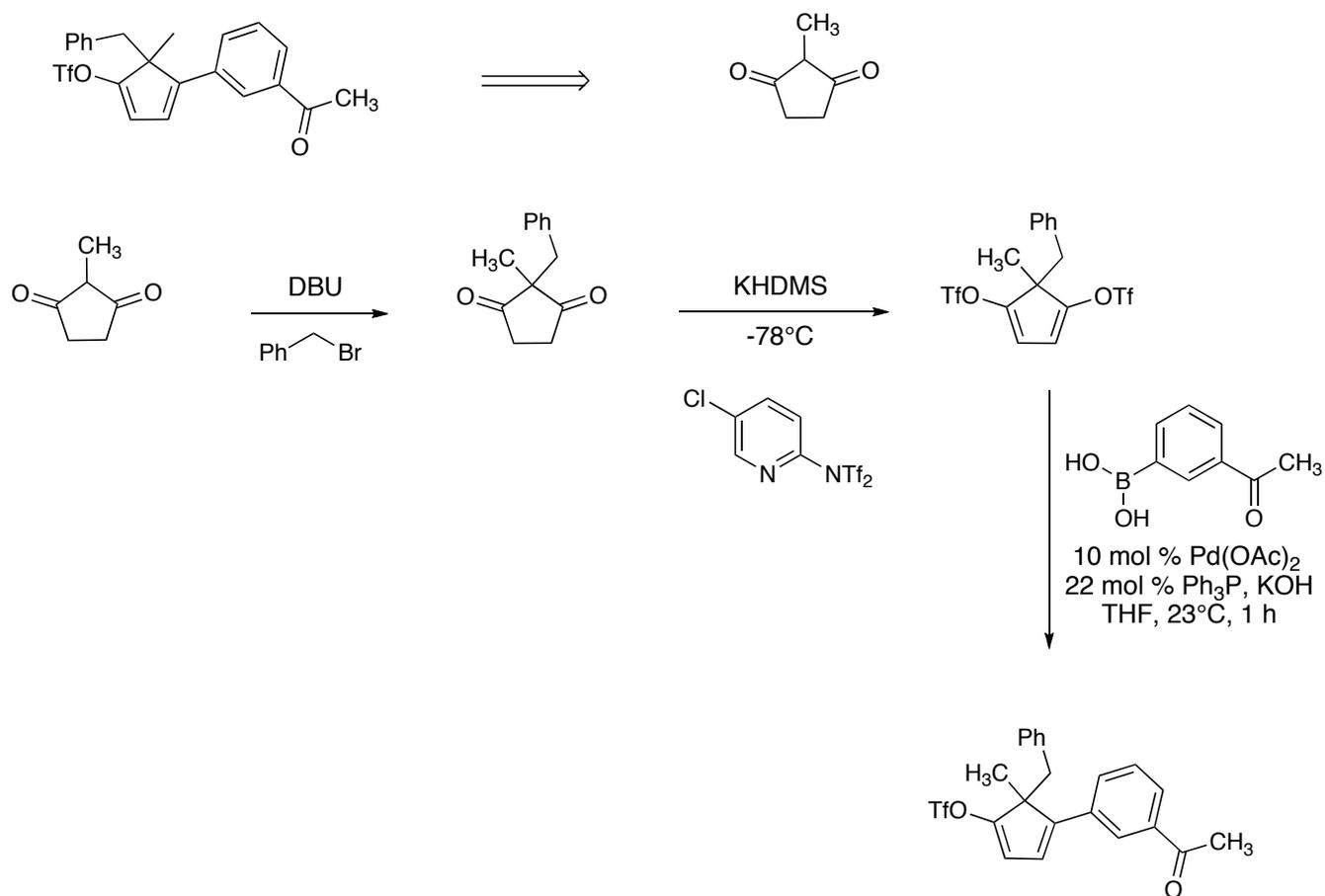
[Buchwald 98JACS9722](#)  
[Buchwald 99JACS9550](#)

2) Donnez un mécanisme pour la transformation suivante :



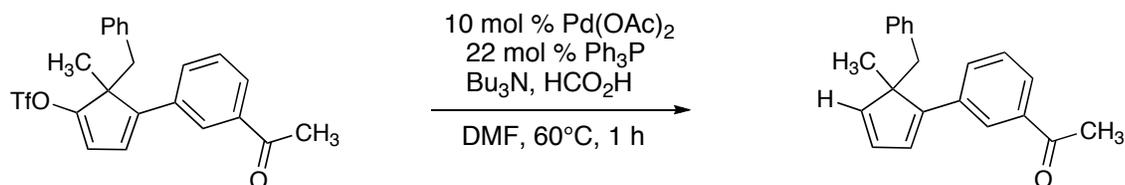


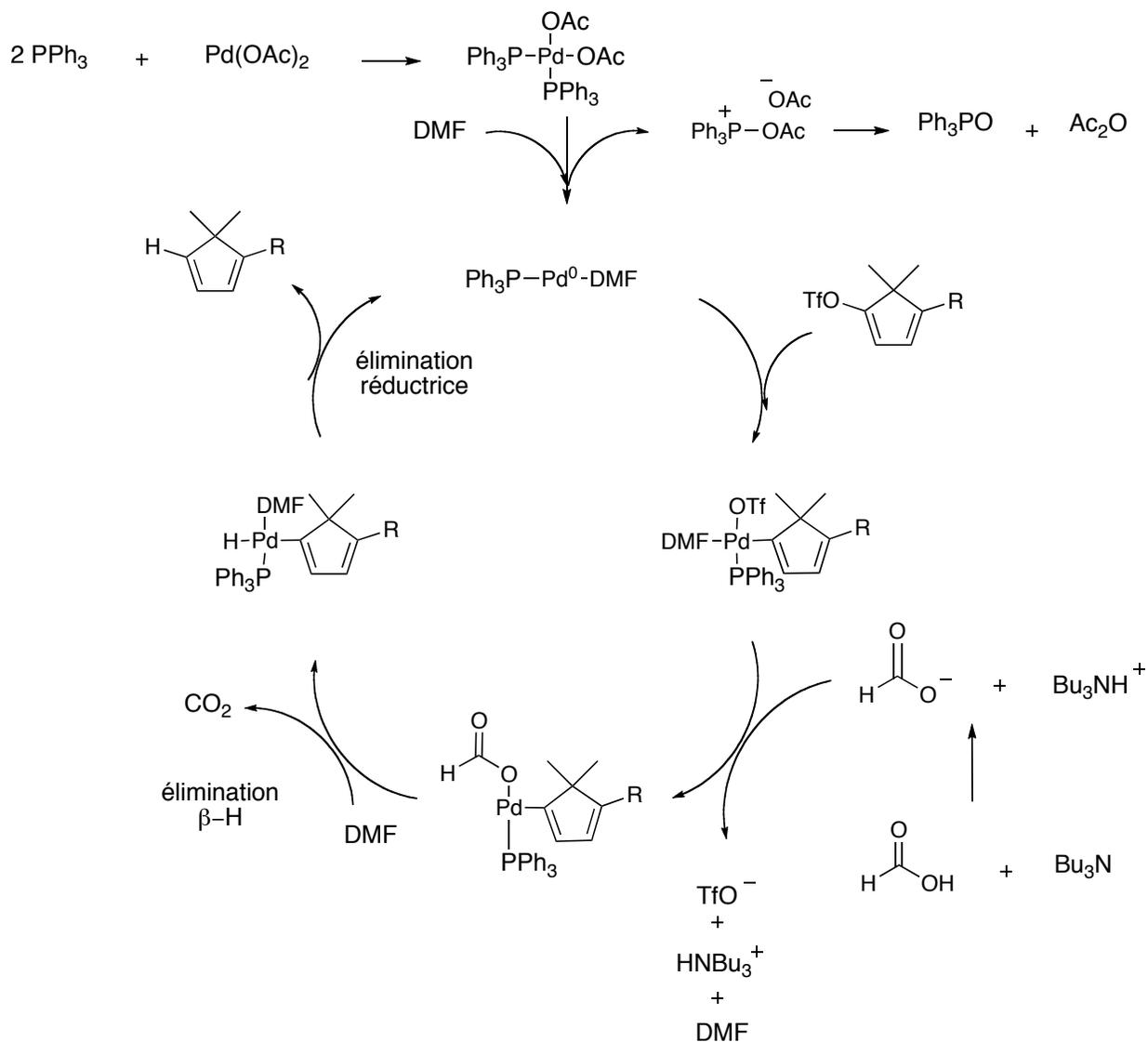
3) Proposez une synthèse utilisant une réaction de Suzuki et partant de la 2-méthyl-cyclopentanedione et d'autres réactifs :



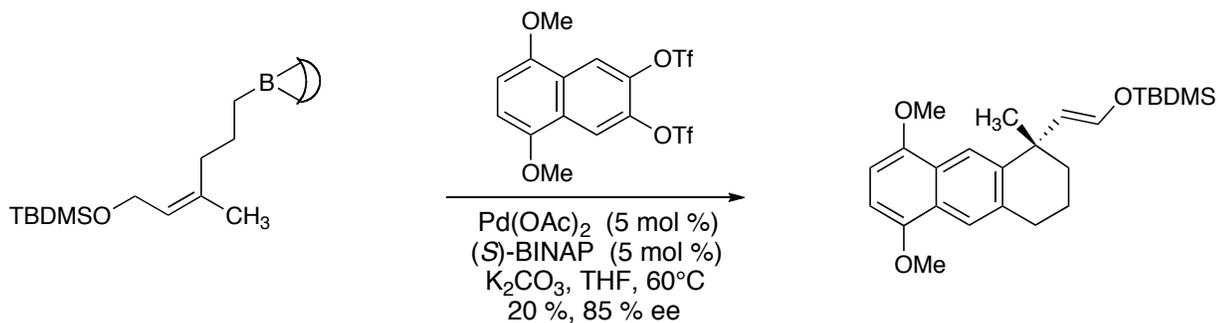
2004ACIEE1249

Le triflate peut être remplacé par le H dans les conditions ci-dessous

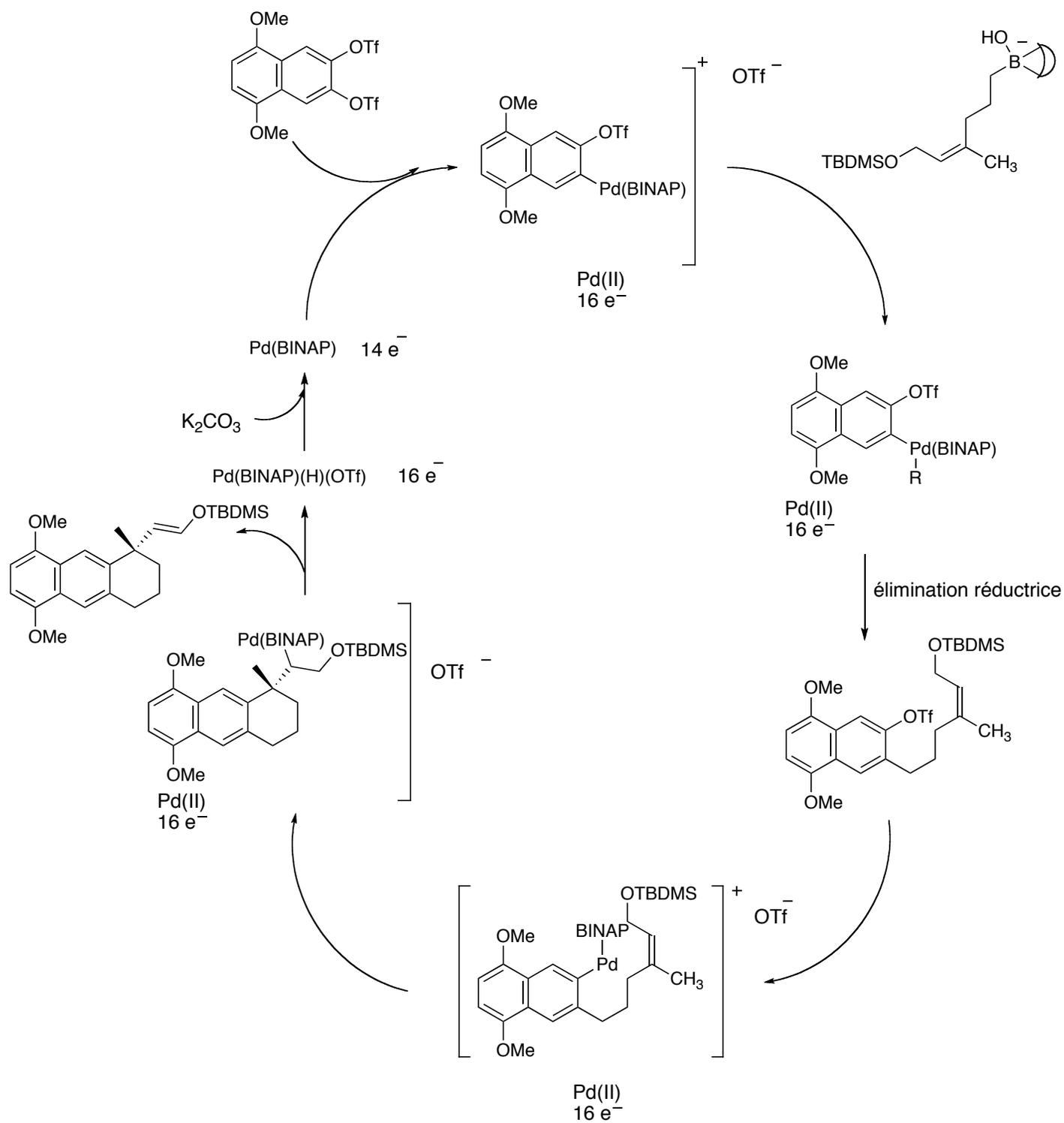




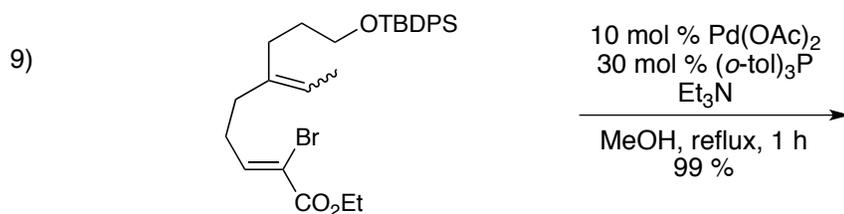
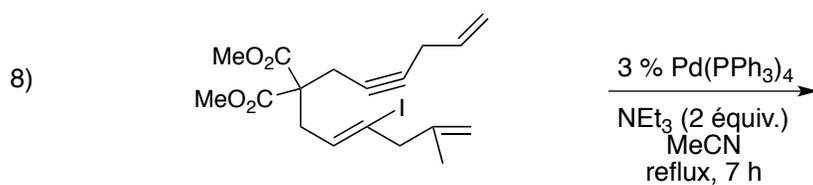
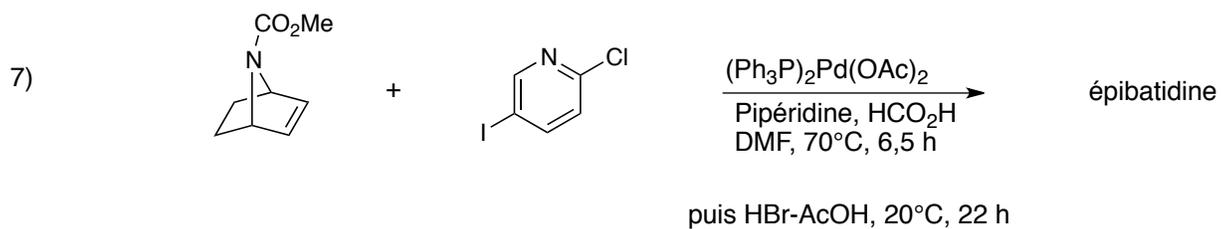
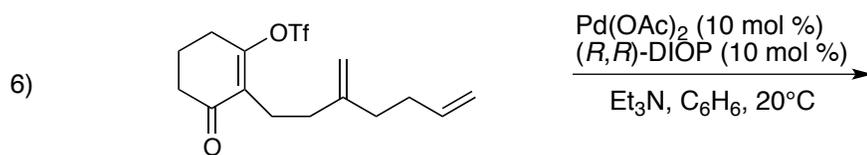
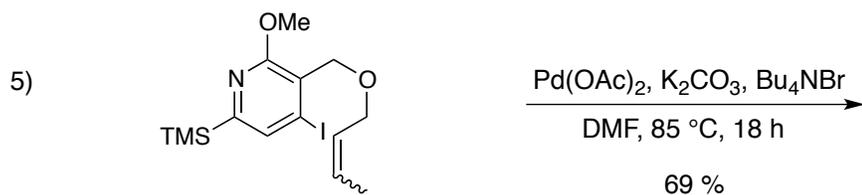
4) La synthèse suivante a été rapportée par Shibasaki



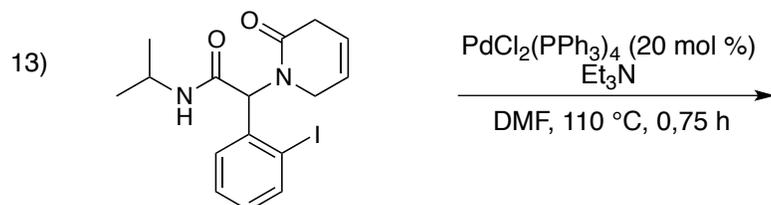
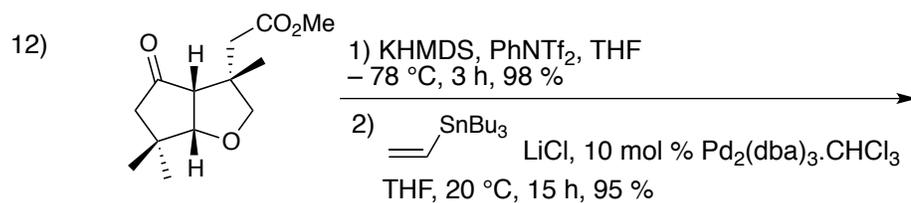
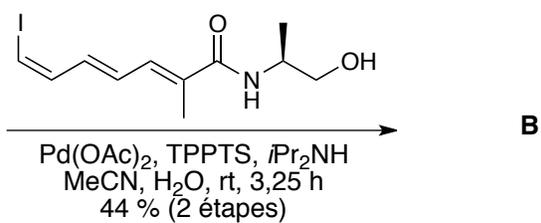
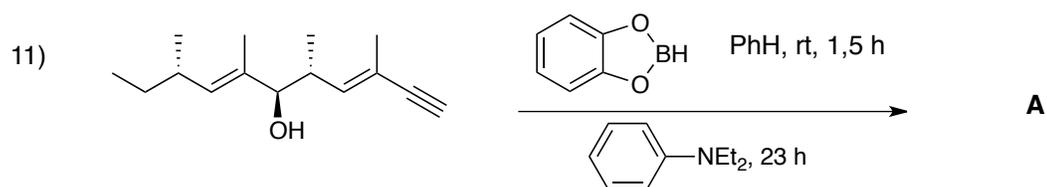
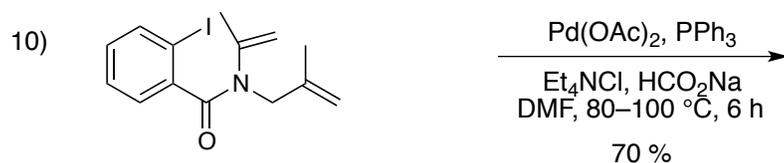
Donnez un mécanisme et indiquez le couplage d'électrons d pour toutes les espèces organométalliques.



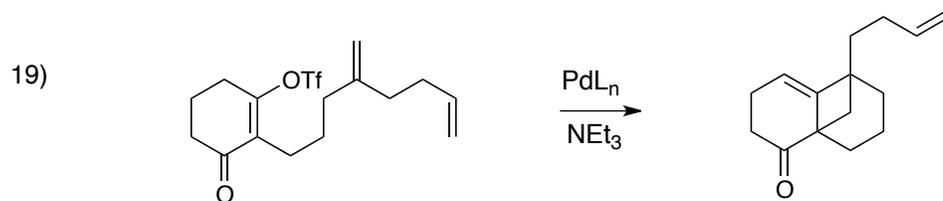
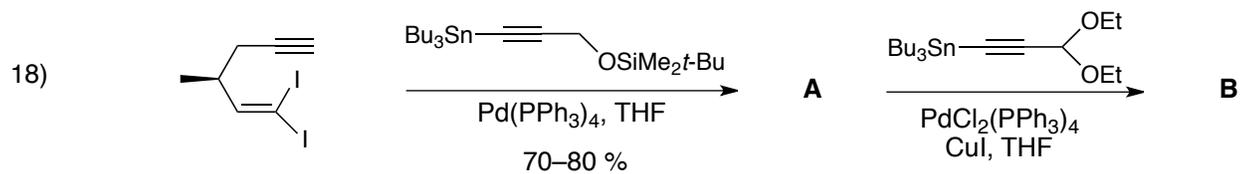
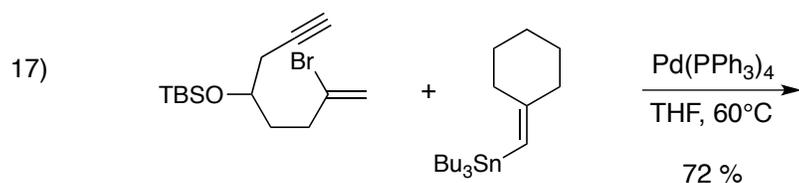
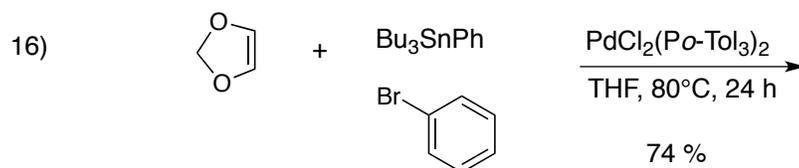
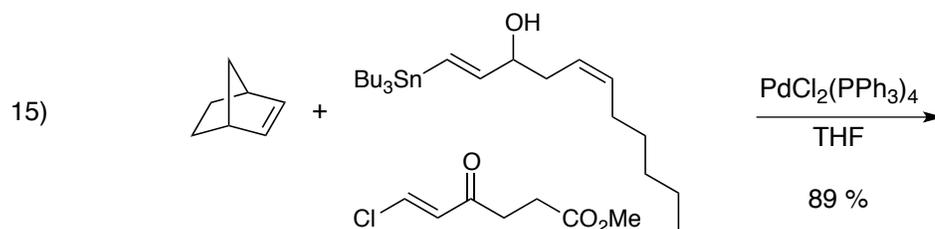
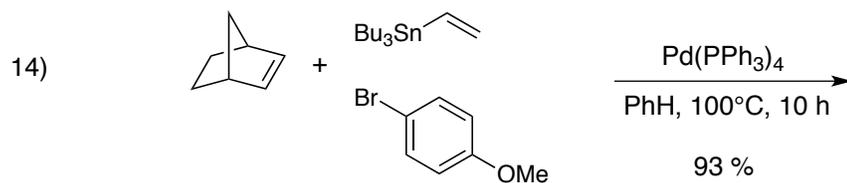
## Exercices



## Exercices

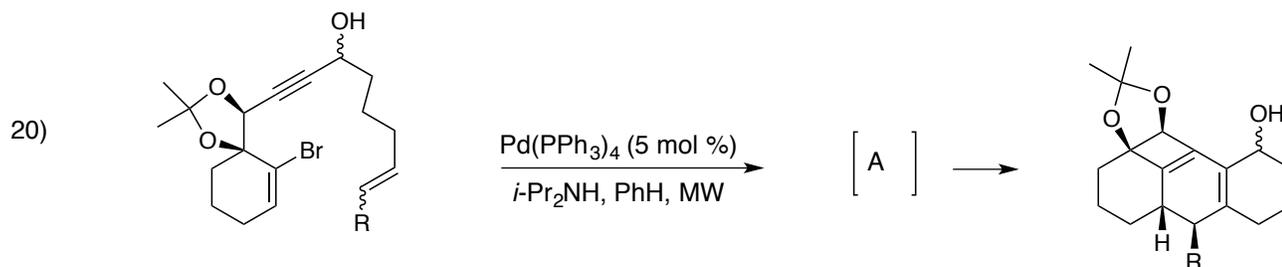


## Exercices

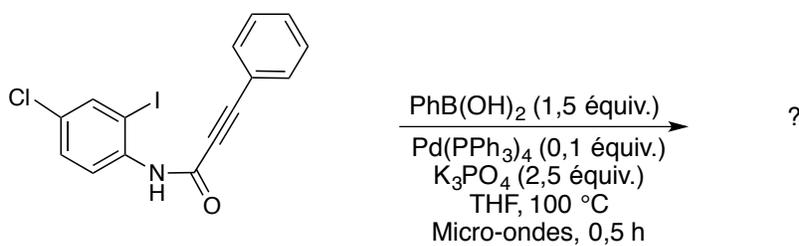


Justifiez par un mécanisme

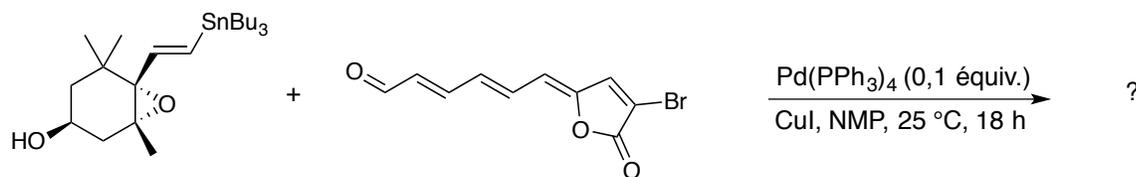
## Exercices (suite)



21) Synthèse d'inhibiteurs (Johnson & Johnson, 2005) :



22) Dans la synthèse de la péridinine (Brückner, 2006) :



23) Dans la synthèse de la ningaline D (2005) :

