

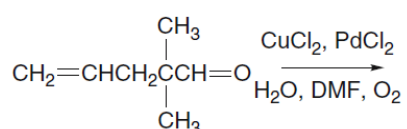
5. COUPLING REACTIONS

1. Explain abbreviations listed in the table below.

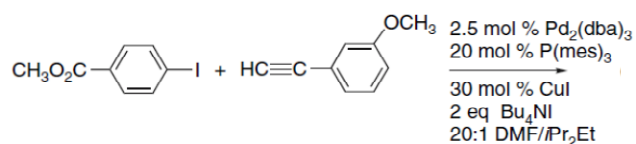
Abbreviation	Name	Formula/Composition	Application
DTBP			
PIFA			
SPhos			
CIPCy ₂			
dppe			
acac			
AIBN			

2. Predict the product of the following reactions (CS).

a)

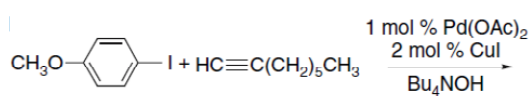


b)



K. Nakamura, H. Okubo, and M. Yamaguchi, *Synlett*, **1999**, 549.

c)



S. Urgaonkar and J. G. Verkade, *J. Org. Chem.*, **2004**, *69*, 5752.

3. On the basis of the reference, provide three examples of Stille cross-coupling reactions (substrate, product and stannane).

Tetrahedron Letters, **1995**, *36*, 2191.

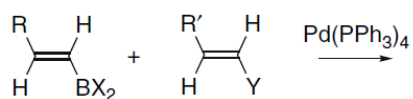
4. Predict the products of the following reactions (CS).

a)



C. G. Hartung, K. Kohler, and M. Beller, *Org. Lett.*, **1999**, *1*, 709.

b)



X = OH, OR, R
Y = Br, I

N. Miyaura, K. Yamada, H. Suginome, and A. Suzuki, *J. Am. Chem. Soc.*, 1985, **107**, 972.

5. Fill in the table below (MS5, CS).

Coupling reaction	Scheme of reaction	Properties	Type of substituents	Compatible functional groups	Advantages/limitations
Heck					
Suzuki					
Stille					
Kumada-Corriu					
Negishi					