TABLE 2. CROSS-COUPLINGS OF ALKYLBORON REAGENTS WITH ALKENYL ELECTROPHILES

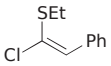
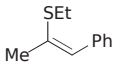
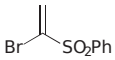
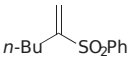
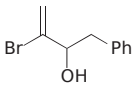
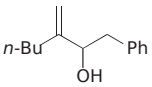
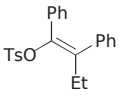
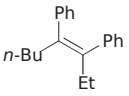
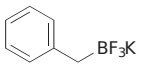
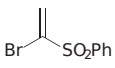
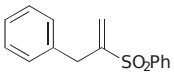
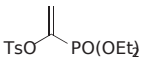
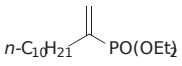
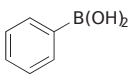
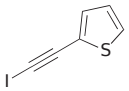
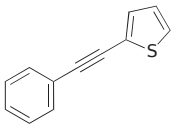
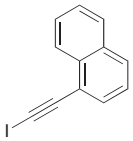
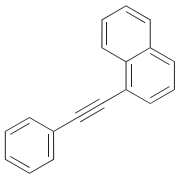
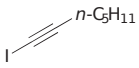
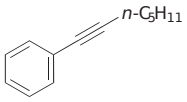
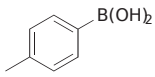
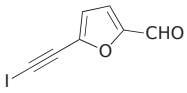
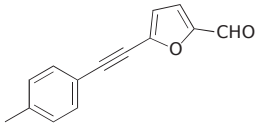
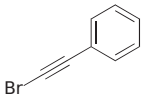
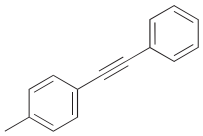
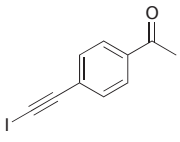
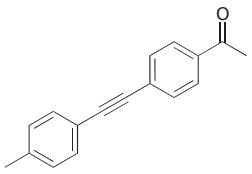
Alkylboron Reagent	Alkenyl Electrophile	Conditions	Product(s) and Yield(s) (%)	Refs.
Please refer to the charts preceding the tables for ligand and catalyst structures.				
C_1				
$Me-B(OH)_2$ 1.3 eq		$Pd(OAc)_2$ (5 mol %), PPh_3 (10 mol %), Cs_2CO_3 (1.5 eq), THF, 40°, 5 h	 (66)	187
C_4				
n-Bu–BF_3K 1.5 eq		$Pd(OAc)_2$ (5 mol %), SPhos (10 mol %), Cs_2CO_3 (2 eq), toluene/water (4:1), 50°, 15 h	 (71)	188
n-Bu–$B(OH)_2$ 1.5 eq		$Pd(OAc)_2$ (5 mol %), LB-Phos•HBF_4 (5 mol %), K_2CO_3 (4.5 eq), toluene, 110°, 5.7 h	 (80)	189
1.1 eq	 (*E*)/(*Z*) = 100:0	$Pd(OAc)_2$ (1 mol %), RuPhos (2 mol %), K_3PO_4•H_2O (1.5 eq), toluene/water (3:1), 70°, 24 h	 (98) (*E*)/(*Z*) = 99:1	122
C_7				
 1.5 eq		$Pd(OAc)_2$ (5 mol %), SPhos (10 mol %), Cs_2CO_3 (2 eq), toluene/water (4:1), 50°, 15 h	 (60)	188
C_{10}				
n-$C_{10}H_{21}$–BF_3K 2 eq		$Pd(OAc)_2$ (7 mol %), SPhos (15 mol %), Cs_2CO_3 (2.5 eq), toluene/water (4:1), 60°, 20 h	 (99)	190

TABLE 10. CROSS-COUPLINGS OF ARYLBORON REAGENTS WITH ALKYNYL ELECTROPHILES

Arylboron Reagent	Alkynyl Electrophile	Conditions	Product(s) and Yield(s) (%)	Refs.
Please refer to the charts preceding the tables for ligand and catalyst structures.				
C_6				
 1.2 eq		$Pd(dba)_2$ (0.1 mol %), Cs_2CO_3 (2 eq), MeOH, rt, 12 h	 (95)	203
1.2 eq		$Pd(dba)_2$ (0.1 mol %), Cs_2CO_3 (2 eq), MeOH, rt, 12 h	 (74)	203
1.2 eq		$Pd(dba)_2$ (0.1 mol %), Cs_2CO_3 (2 eq), MeOH, rt, 12 h	 (68)	203
C_7				
 1.5 eq		$PdCl_2$ (1 mol %), K_2CO_3 (2 eq), MeOH/toluene/water (3:3:1), 80°, 8 h	 (86)	218
1.2 eq		$Pd(dba)_2$ (0.1 mol %), Cs_2CO_3 (2 eq), MeOH, rt, 12 h	 (91)	203
1.5 eq		$PdCl_2$ (1 mol %), K_2CO_3 (2 eq), MeOH/toluene/water (3:3:1), 80°, 8 h	 (92)	218