SUPPORTING INFORMATION FOR

Ligand-Free Heck Reaction: Pd(OAc)₂ as Active Catalyst Revisited

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Experimental Section

General description: olefins, *N,N*-dimethylacetamide (DMA) (anhydrous), *N,N*-dimethylformamide (DMF) (anhydrous), 1-methyl-2-pyrrolidinone (NMP) (anhydrous), 1,4-dioxane (anhydrous) and Pd(OAc)₂ were all purchased from commercial sources and used as received. Triethylamine was distilled under argon from sodium. Sodium carbonate and sodium acetate were ground into a fine powder and stored in sealed vials. Potassium phosphate (K₃PO₄) was ground into a fine powder and stored in a desiccator over Drierite. Flash column chromatography was performed on silica gel 60 (230–400 mesh) using hexane or hexane/ CH₂Cl₂ (1:1) as eluent. NMR spectra were acquired in CDCl₃

at 500 MHz for ^1H and 125 MHz for ^{13}C . All reactions were carried out under an argon atmosphere in oven-dried Schlenk flasks.

Data of new compounds: *trans*-4-*tert*-Butyl-4'-methoxystilbene (**3e**) (Table 3, entry 5): white solid, m.p. 162–163 °C. ^1H NMR (500 MHz, CDCl_3): 1.37 (s, 9 H), 3.86 (s, 2 H), 6.93 (d, 2H, $J = 8.4$ Hz), 6.99 (d, 1 H, $J = 16.3$ Hz), 7.06 (d, 1 H, $J = 16.3$ Hz), 7.40 (d, 2 H, $J = 8.4$ Hz), 7.46 (d, 2 H, $J = 8.4$ Hz), 7.48 (d, 2 H, $J = 8.4$ Hz). ^{13}C NMR (125 MHz, CDCl_3): 31.3, 34.6, 55.3, 114.1, 125.6, 126.0, 126.5, 127.5, 127.6, 130.4, 134.9, 150.3, 159.2. Anal. Calcd for $\text{C}_{19}\text{H}_{22}\text{O}$: C, 85.67; H, 8.32. Found: C, 85.50; H, 8.42. *trans*- α -Cyclohexyl-2-methylstyrene (**3i**) (Table 3, entry 9): thick oil. ^1H NMR (500 MHz, CDCl_3): 1.20-1.39 (m, 10 H), 2.19 (m, 1 H), 2.37 (s, 3 H), 6.07 (dd, 1 H, $J = 7.0, 15.8$ Hz), 6.57 (d, 1 H, $J = 15.7$ Hz), 7.13-7.20 (m, 3 H), 7.45 (d, 1 H, $J = 7.4$ Hz). ^{13}C NMR (125 MHz, CDCl_3): 19.8, 26.1, 26.2, 33.1, 41.5, 125.0, 125.3, 126.0, 126.7, 130.1, 135.0, 137.2, 138.3. Anal. Calcd for $\text{C}_{15}\text{H}_{20}$: C, 89.94; H, 10.06. Found: C, 89.66; H, 10.28.