supporting information for

Palladium(II)--Catalyzed Direct Alkenylation of Dihydropyranones

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General Information
Coupling constants are reported as a $J$ value in Hz. $^1$H-NMR and $^{13}$C-NMR spectra were recorded at 25 °C on Bruker Advance 400M NMR spectrometers (CDCl$_3$ as solvent). Chemical shifts for $^1$H NMR spectra are reported as $\delta$ in units of parts per million (ppm) downfield from SiMe$_4$ ($\delta$ 0.0) and relative to the signal of SiMe$_4$ ($\delta$ 0.00 singlet). Multiplicities were given as: s (singlet); d (doublet); t (triplet); q (quartet); dd (doublet of doublets); dt (doublet of triplets); m (multiplets) and etc. $^{13}$C NMR spectra are reported as $\delta$ in units of parts per million (ppm) downfield from SiMe$_4$ ($\delta$ 0.0) and relative to the signal of chloroform-d ($\delta$ 77.00 triplet). Flash chromatography was performed using 200-300 mesh silica gel with the indicated solvent system. High resolution mass spectral analysis (HRMS) was performed on Waters Q-Tof mePeremies Mass Spectroter.

General procedure for the coupling reaction of dihydropyranones with acrylates:
Pd(OAc)$_2$ (0.03 mmol, 10 mol%), BQ (0.6 mmol, 2 equiv), dihydropyranone (0.3 mmol, 1 equiv) and acrylate (0.6 mmol, 2 equiv) was added to a 10 mL round bottom flask containing AcOH/DMSO (v/v = 10/1, 1 mL). The mixture was stirred for 24 hours at 60 °C under 1 atmosphere of O$_2$. After cooling to room temperature, the mixture was diluted with ethyl acetate (5 mL) and was filtered through a plug of celite. The filtrate was washed with saturated NaHCO$_3$ twice (5 mL x 2), and brine (5 mL). The organic layer was dried with anhydrous MgSO$_4$ and filtered; the crude product was obtained by evaporating the organic solvent under reduced pressure. The desired product was isolated by column chromatography (ether/hexane = 3:7).
$^1$H, $^{13}$C NMR spectra of the coupling products

![NMR Spectra Image]