Tungsten-Catalyzed Alkene Isomerization/ Hydrocarbonylative Cyclization

Significance: A tungsten-catalyzed isomerization of terminal alkenes to unactivated internal positions followed by subsequent hydrocarbonylation with CO is reported. This work addresses common challenges associated with the regioselectivity of tandem alkene isomerization-functionalization reactions.

Comment: Experimental and DTF studies were carried out to elucidate the mechanism. Key to this transformation is the six- to seven-coordinate geometry changes present in the W(0)/W(II) redox cycle and the presence of a conformationally flexible directing group that allows for isomerization to take place.