Molybdenum-catalyzed Synthesis of Stannylated Allylic Alcohol Derivatives and their Synthetic Applications

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Mo(CO)3(CNtBu)3 (MoBI3) was found to be a suitable catalyst for the regioselective hydrostannation of several types of alkynes, especially propargyl alcohol derivatives, giving preferentially rise to the α-stannylated products. If propargylic acetates are used, the stannylated allylic acetates are suitable substrates for Pd-catalyzed allylic alkylations. Allenylcarbinols also undergo regioselective hydrostannation in the presence of MoBI3, while the allenylcarbinols are more reactive than alkynes and therefore milder reaction conditions are possible. Allylstannanes are formed preferentially, which can easily be converted into allyl iodides or vinyl epoxides.