## Hydrochlorination of unactivated alkenes enabled by decarbonylative transfer processes

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$$R^{2} \xrightarrow{R^{3}} + \underbrace{\begin{array}{c} \text{Me} \\ \text{CI} \\ \text{H} \\ \text{H} \\ \text{(1.2 equiv)} \end{array}}_{\text{H equiv}} \xrightarrow{B(C_{6}F_{5})_{3} (5 \text{ mol}\%)} \underbrace{\begin{array}{c} \text{R}^{3} \\ \text{CI} \\ \text{R}^{1} \\ \text{H} \end{array}}_{\text{H}} + \underbrace{\begin{array}{c} \text{Me} \\ \text{CI} \\ \text{R}^{1} \\ \text{H} \end{array}}_{\text{H}} + \underbrace{\begin{array}{c} \text{Me} \\ \text{CO} \\ \text{CI} \\ \text{R}^{1} \\ \text{H} \end{array}}_{\text{H}} + \underbrace{\begin{array}{c} \text{Me} \\ \text{CI} \\ \text{R}^{1} \\ \text{CI} \\ \text{R}^{2} \\ \text{CI} \\ \text{R}^{2} \\ \text{CI} \\ \text{R}^{3} \\ \text{CI} \\ \text{CI} \\ \text{R}^{3} \\ \text{CI} \\$$

The hydrochlorination of alkenes is one of most fundamental reactions in organic chemistry. However, conventional Markovnikov addition of HCl to alkenes usually employ HCl gas or condensed liquid HCl that are difficult to handle, those reactions are also limited in substrate scop. Therefore, it's highly interesting to develop alternatives. In the past years, our group dedicated to synthesizing surrogates for difficult-to-handle chemicals based on cyclohexa-1,4-diene skeleton and developed a series of transfer processes to realize hydrofunctionalization of olefins. Herein, we developed a readily synthesized and easily handled surrogate for toxic gaseous hydrogen chloride, which can accomplish the Markovnikov addition of HCl to a wide range of unactivated alkenes with excellent yields under mild reaction conditions via the decarbonylative transfer processes.