Rhodium(III)-mediated cycloaddition reactions of alkynes

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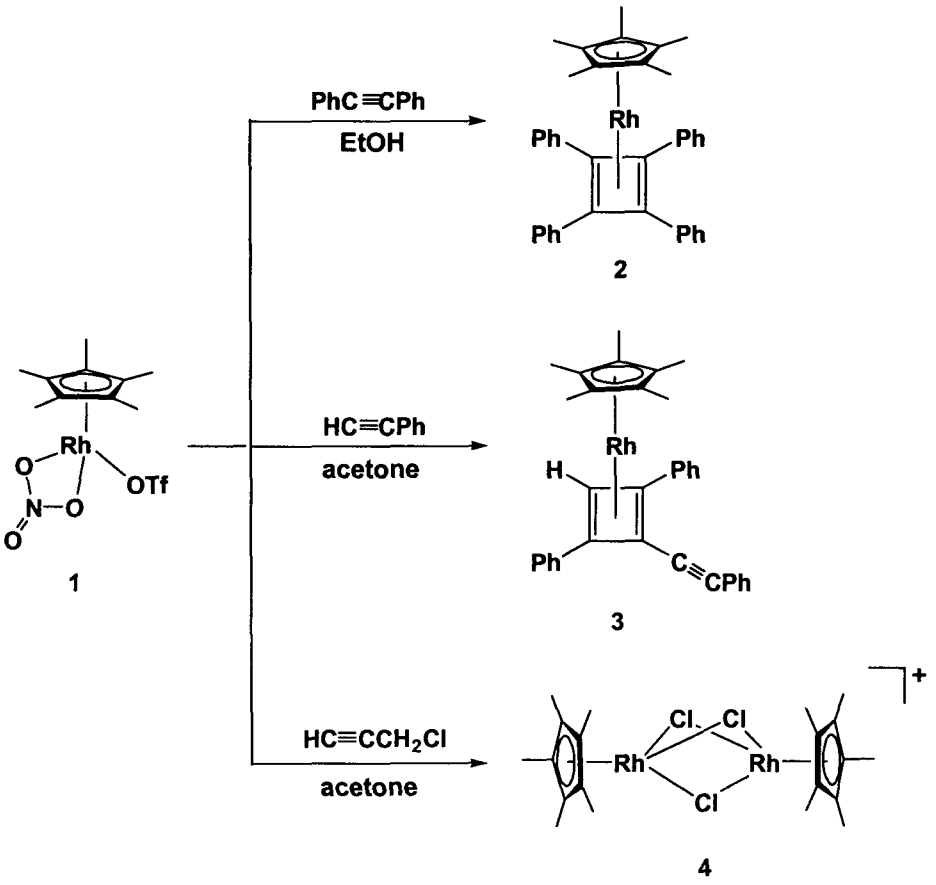
Heating [Cp*Rh(η^2-NO_3)(OTf)] (**1**) and PhC≡CPh in EtOH for 3 h gave a η^4-cyclobutadienerhodium complex, [Cp*Rh(η^4-C_4Ph_4)] (**2**). Complex **1** reacted with HC≡CPh in acetone at room temperature for 3 h to give a (η^4-cyclobutadiene)–rhodium complex, [Cp*Rh(η^4-C_4HPhC≡CPh)] (**3**). Whereas, the reactions of **1** with HC≡CCH_2Cl in acetone at room temperature for 3 h gave the triply halide-bridged dinuclear rhodium complex, [Cp*Rh(μ_2-Cl)$_3$RhCp*](OTf) (**4**). Complexes **2**–**4** have been structurally characterized by X-ray diffraction.



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