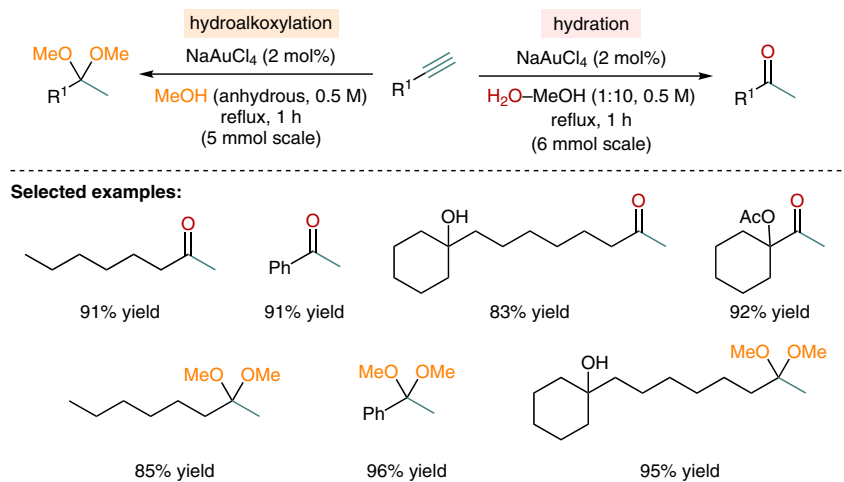


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Effective Transformation of Unactivated Alkynes into Ketones or Acetals with a Gold(III) Catalyst
J. Org. Chem. **1991**, *56*, 3729–3731, DOI: 10.1021/jo00011a058.

Gold(III)-Catalyzed Hydration of Alkynes



Significance: In 1991, Fukuda and Utimoto disclosed the gold(III)-catalyzed hydration of alkynes. In contrast to traditional Hg(II)-mediated hydrations that require strongly acidic conditions, the reported Au(III)-catalyzed protocol is much milder and does not require any acid, allowing for increased functional group tolerance.

Comment: The hydration reaction is operationally simple, requiring only 2 mol% of Au(III) catalyst in a refluxing mixture of methanol and water. When strictly anhydrous methanol is used, the corresponding dimethyl acetal product is obtained in place of the ketone.

Review: Z. Li, C. Brouwer, C. He *Chem. Rev.* **2008**, *108*, 3239–3265.