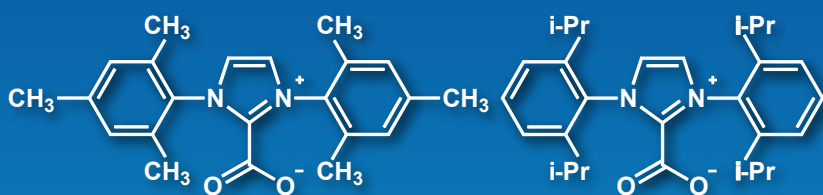


New

Easily-preparable N-Heterocyclic Carbene (NHC) Precursors

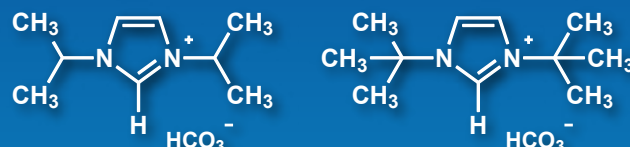
NHC-CO₂ Adducts



[D5401]

[B5603]

NHC Hydrogencarbonate Salts



[D5498]

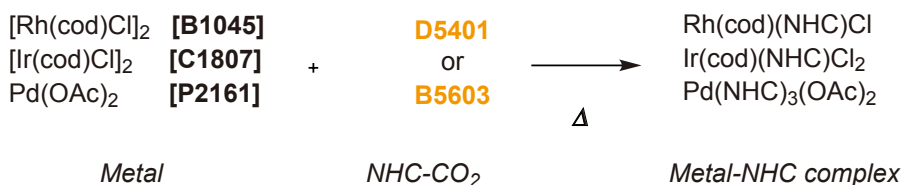
[D5513]

Advantages

- NHC ligands and catalysts are preparable by heating
- No salt is generated in preparation because of the absence of base

Applications 1

NHC-CO₂ Adducts: Transition metal / NHC complex catalyst preparation

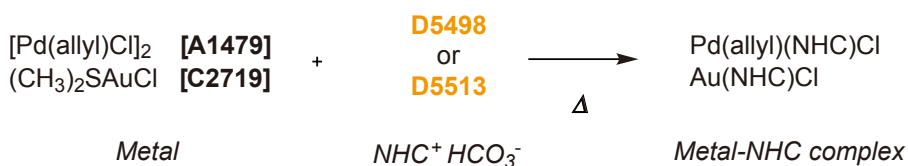


Procedure:

A mixture of [Rh(cod)Cl]₂ (54 mg) and NHC-CO₂ adduct (2 eq.) is stirred in acetonitrile (3 ml) for 5 min at room temperature in a Schlenk flask, followed by heating at 75 °C for 20 min under an atmosphere of argon. The reaction mixture is dried in vacuo, and washed three times with diethyl ether. The yellow solid obtained is analytically pure (93%).

A. M. Voutchkova, L. N. Appelhans, A. R. Chianese, R. H. Crabtree, *J. Am. Chem. Soc.* **2005**, 127, 17624.

NHC Hydrogencarbonate Salts: Transition metal / NHC complex catalyst preparation



Procedure:

(CH₃)₂SAuCl (11.4 mg), NHC hydrogencarbonate salt (1.2 eq.), and THF (0.7 mL) are put in a capped vial (air atmosphere). After 1 h of stirring at 50 °C, the solution is filtered over silica and dried in vacuo. The Au-NHC complex is obtained as a colorless solid in 95% yield.

M. Fèvre, J. Pinaud, A. Leteneur, Y. Gnanou, J. Vignolle, D. Taton, *J. Am. Chem. Soc.* **2012**, 134, 6776.



Easily-preparable *N*-Heterocyclic Carbene (NHC) Precursors

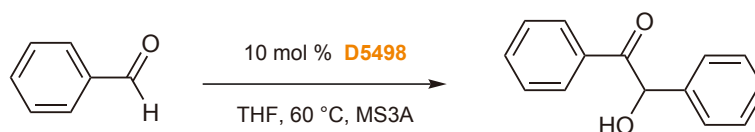
Applications 2

NHC-CO₂ Adducts: NHC-Catalyzed Conjugate Cyanations



P. Goswami, G. Singh, R. V. Anand, *Org. Lett.* **2017**, *19*, 1982.

NHC Hydrogencarbonate Salts: NHC-Catalyzed Benzoin Condensations



M. Fèvre, J. Pinaud, A. Leteneur, Y. Gnanou, J. Vignolle, D. Taton, *J. Am. Chem. Soc.* **2012**, *134*, 6776.

- | | |
|--|-------------------|
| 1,3-Dimesitylimidazolium-2-carboxylate | 1g [D5401] |
| 1,3-Bis(2,6-diisopropylphenyl)imidazolium-2-carboxylate | 1g [B5603] |
| 1,3-Diisopropylimidazolium Hydrogencarbonate (contains varying amounts of 1,3-Diisopropylimidazolium-2-carboxylate) | 1g [D5498] |
| 1,3-Di-<i>tert</i>-butylimidazolium Hydrogencarbonate (contains varying amounts of 1,3-Di-<i>tert</i>-butylimidazolium-2-carboxylate) | 1g [D5513] |

Related Products

- | | |
|---|---------------------------|
| Chloro(1,5-cyclooctadiene)rhodium(I) Dimer (= [Rh(cod)Cl]₂) | 100mg / 1g [B1045] |
| Chloro(1,5-cyclooctadiene)iridium(I) Dimer (= [Ir(cod)Cl]₂) | 250mg / 1g [C1807] |
| Palladium(II) Acetate (Purified) (= Pd(OAc)₂) | 1g [P2161] |
| Allylpalladium(II) Chloride Dimer (= [Pd(allyl)Cl]₂) | 500mg / 1g [A1479] |
| Chloro(dimethylsulfide)gold(I) (= (CH₃)₂SAuCl) | 200mg / 1g [C2719] |

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NHC



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