

Orienta Tesi

*Cdl Chimica e
Scienze Chimiche*



chimica_unibas



CdL Chimica Unibas

**"Scegli i tuoi
esperimenti"**



Orienta Tesi

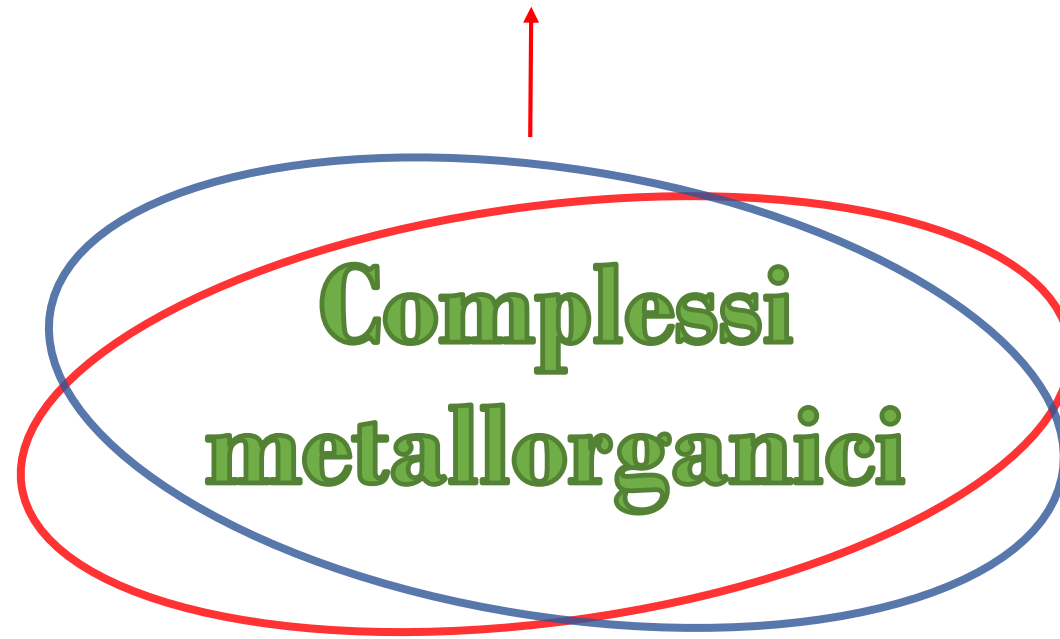
Potenza - 21 Dicembre 2022

A. Mariconda

Dipartimento di Scienze
Università degli Studi della Basilicata

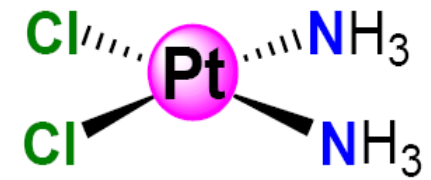


1-Catalisi



2-Metal drugs

cis-diamminodichloroplatino(II)
o Cisplatino



1978 Uso clinico

Complessi metallorganici

Ligando



+



Complesso metallorganico



Attività di ricerca



Metallo

Complessi organometallici

Ligando



Titanio
Ti



Rutenio
Ru



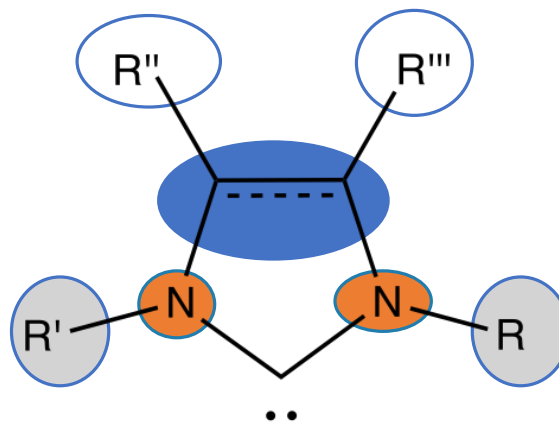
Palladio
Pd



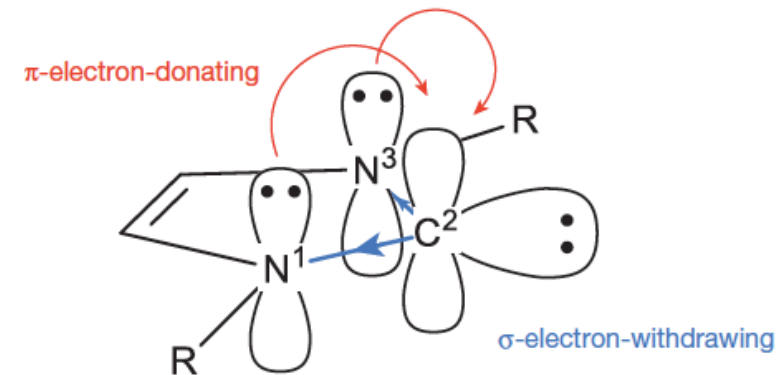
Argento
Ag



Oro
Au



Carbeni *N*-eterociclici NHCs

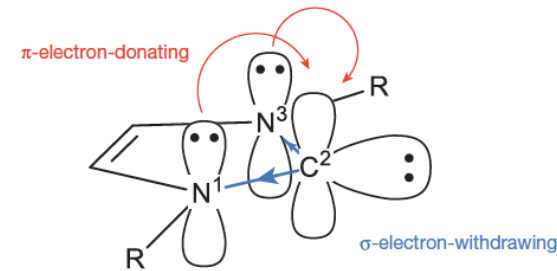
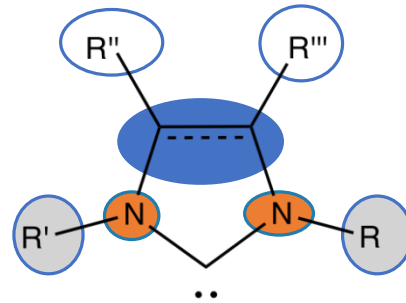


I carbeni sono specie chimiche neutre in cui il carbonio ha due elettroni non impegnati in legami.

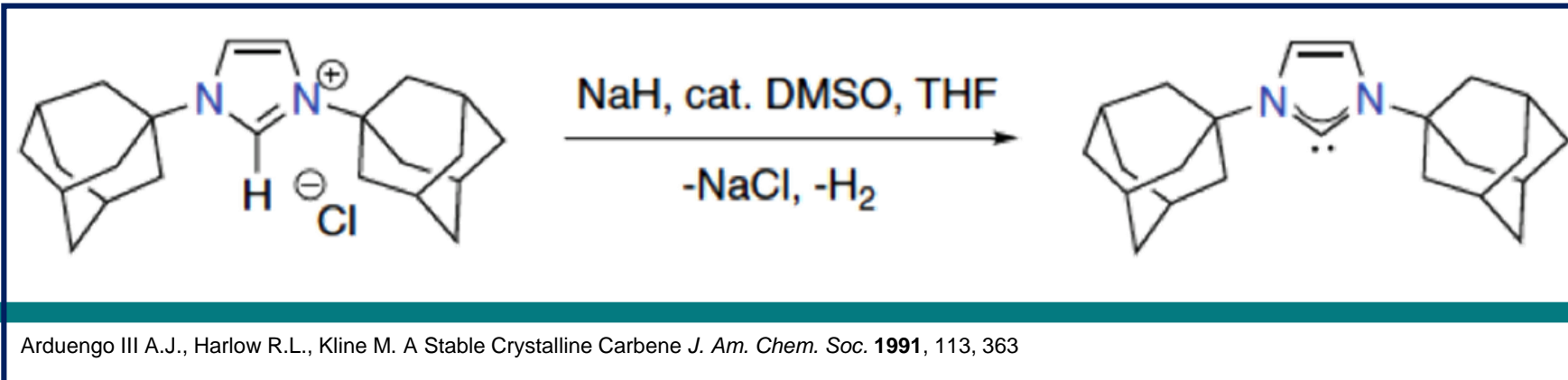
Ligando



Carbeni N-eterociclici NHCs



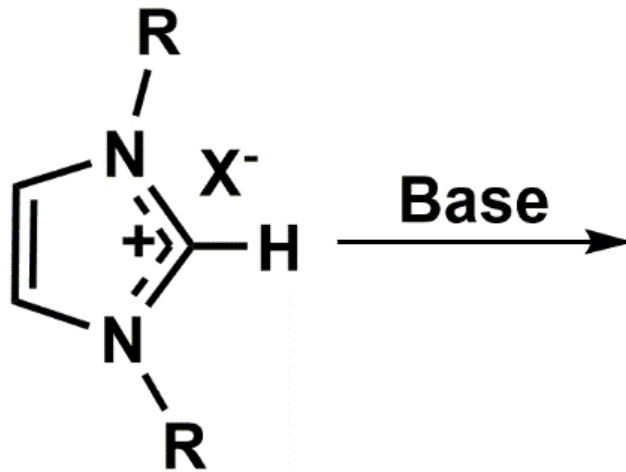
Primo NHC stabile



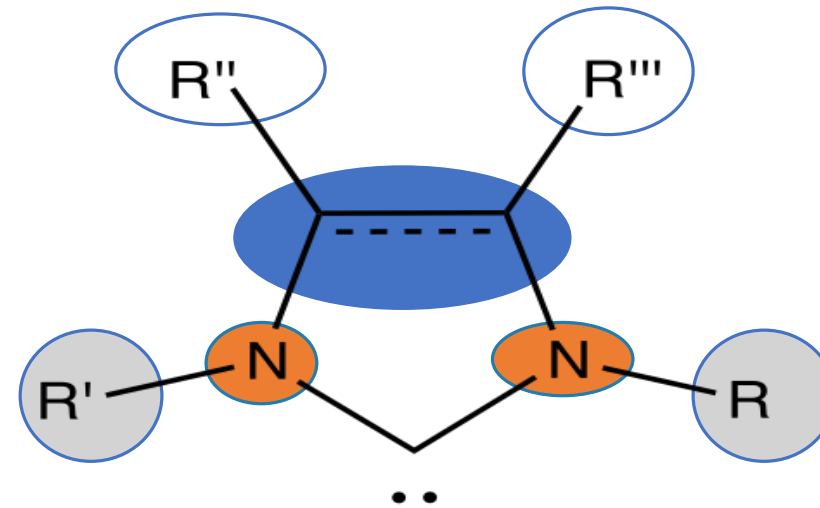


Facile modulazione delle proprietà
steriche ed elettroniche

Proligandi



Sali di imidazolio



NHC

1- Progettazione

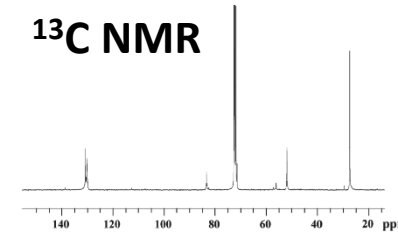
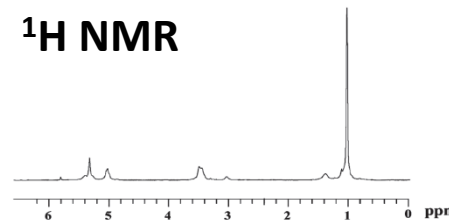


(NHC)M

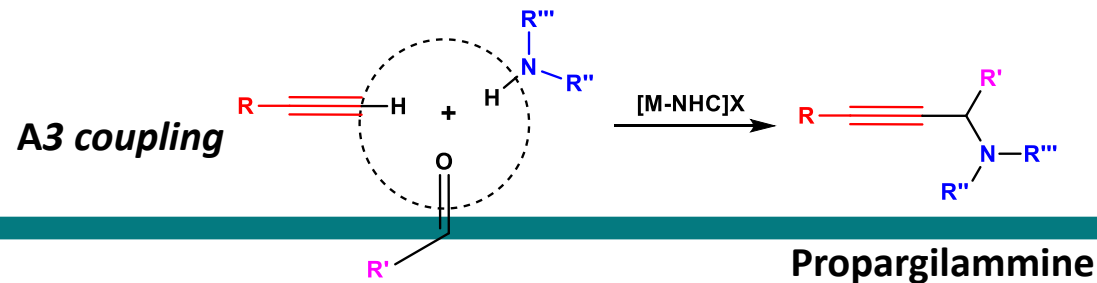


2- Sintesi

3- Caratterizzazione



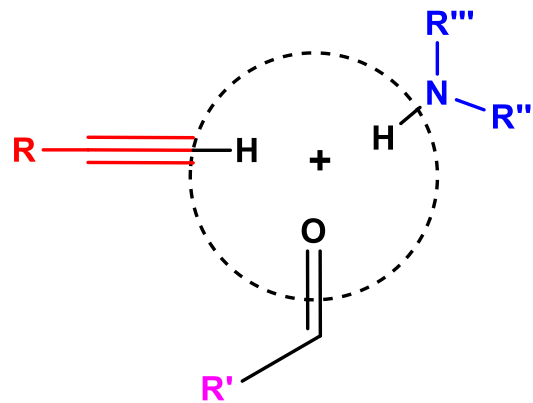
Spettrometria
di massa



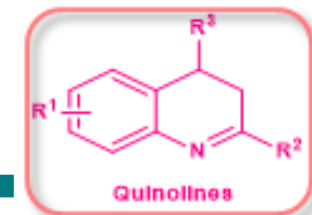
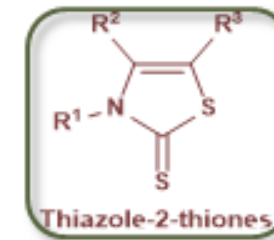
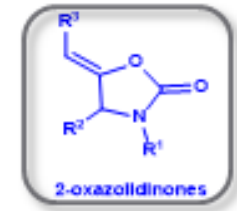
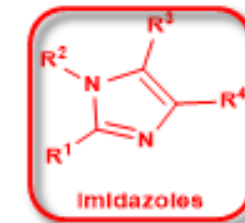
4- Test in catalisi

Sintesi di complessi d'argento e d'oro con leganti carbenici N-eterociclici: studio dell'attività catalitica in reazioni di accoppiamento A^3 (Aldeide, Ammina, Alchino)

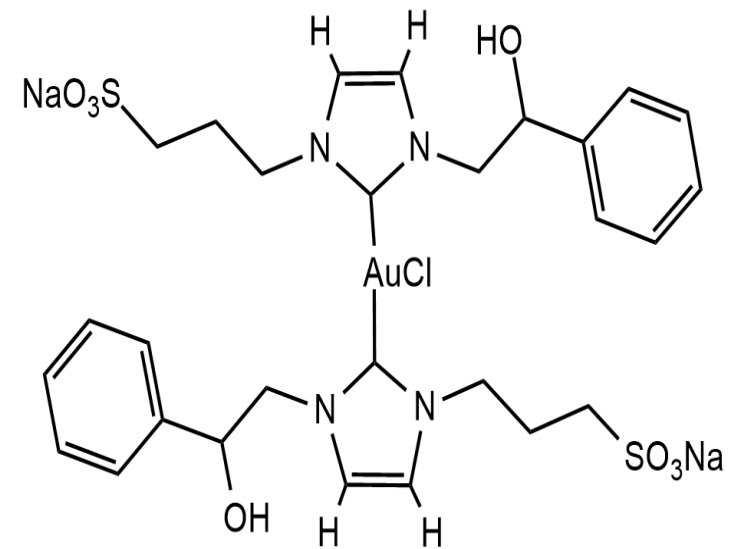
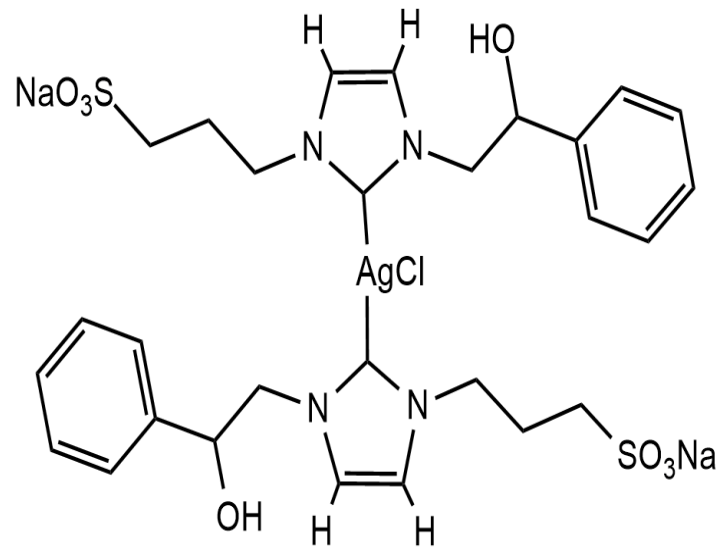
Il dott. Francesco Viceconte ha ricevuto il premio Federchimica (2000 euro) per la valorizzazione di tesi di interesse industriale.



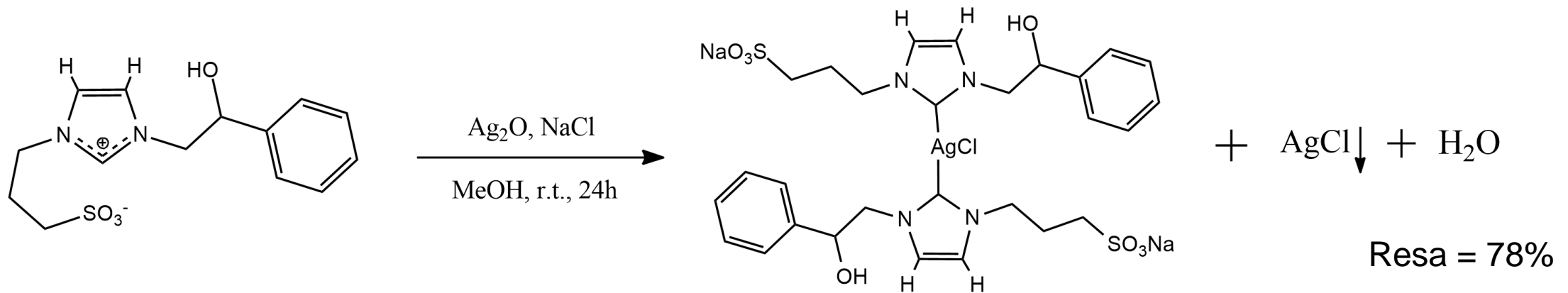
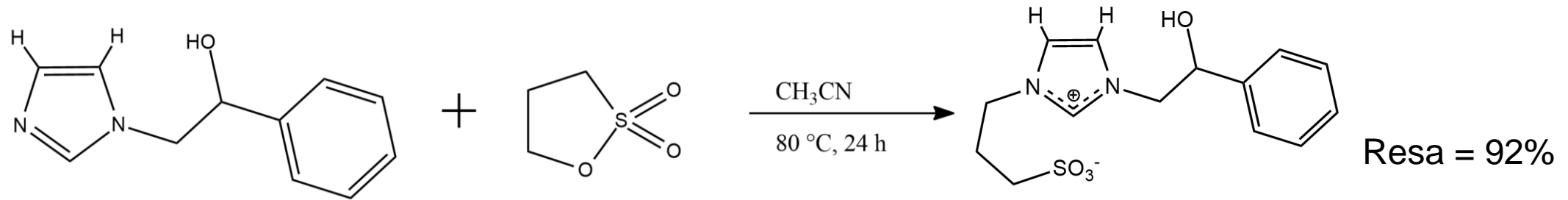
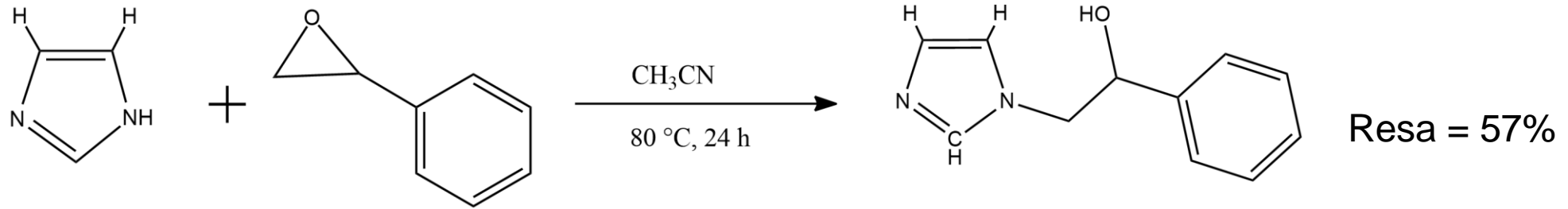
Le propargilammine sono prodotti chiave per la sintesi di molecole di interesse industriale e farmacologico.

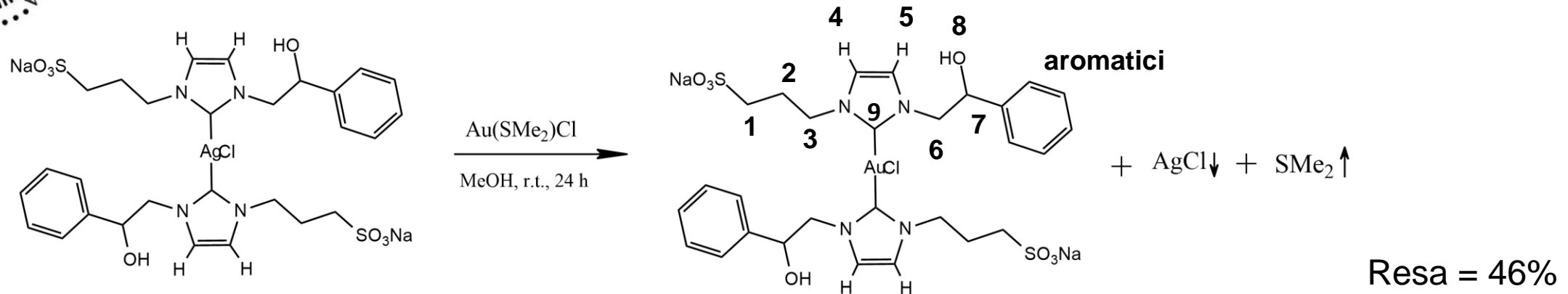


Struttura dei complessi NHC-Ag(I) e NHC-Au(I) sintetizzati

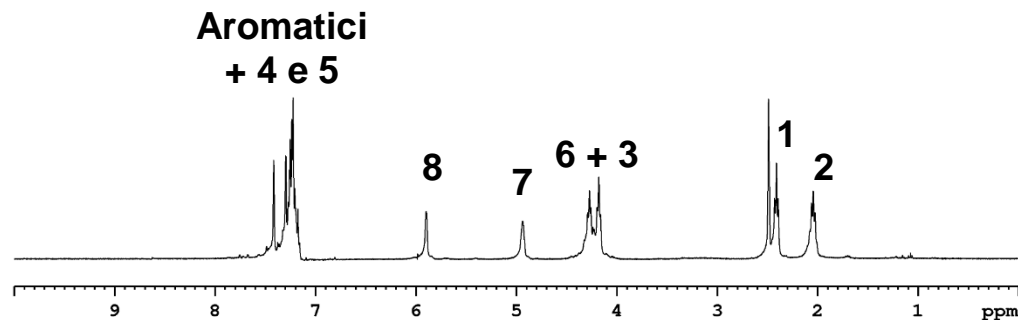


...attività catalitica nelle reazioni di A^3 coupling

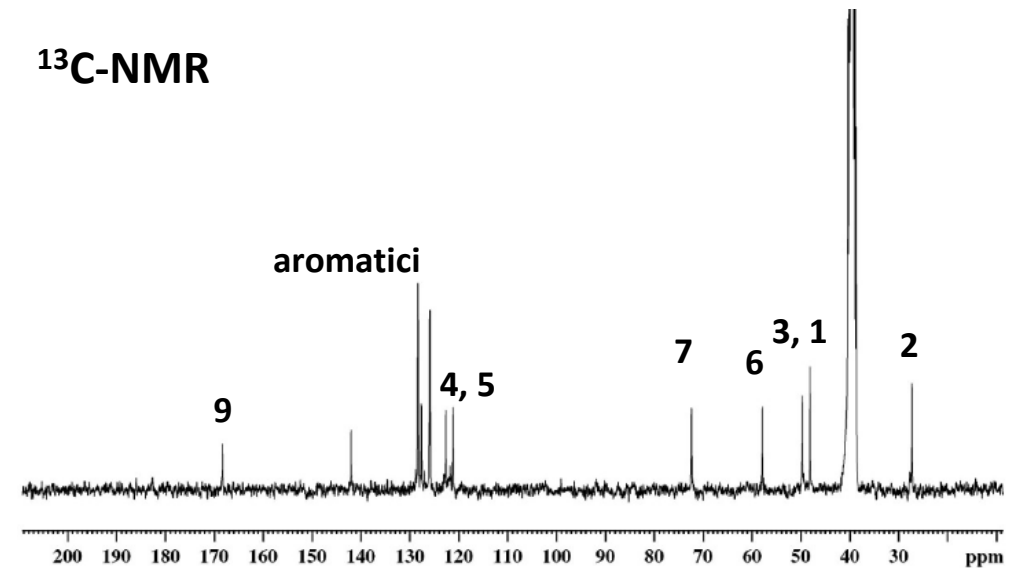




¹H-NMR

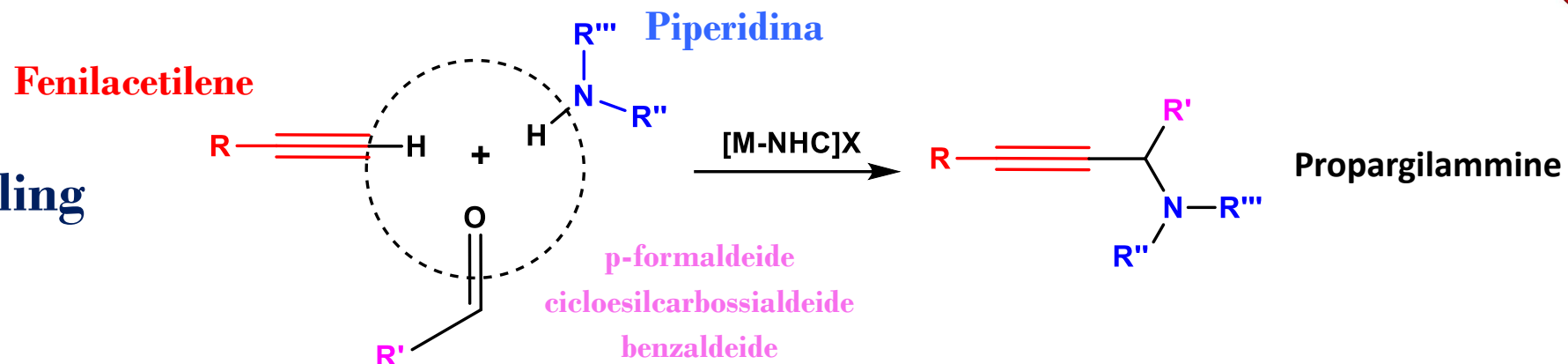


¹³C-NMR



MALDI-TOF (CH₃OH, m/z): 861.13 Dalton [C₂₈H₃₄AuN₄Na₂O₈S₂]⁺; a 506.53 Dalton [C₁₄H₁₇AuN₂O₄S]⁺.

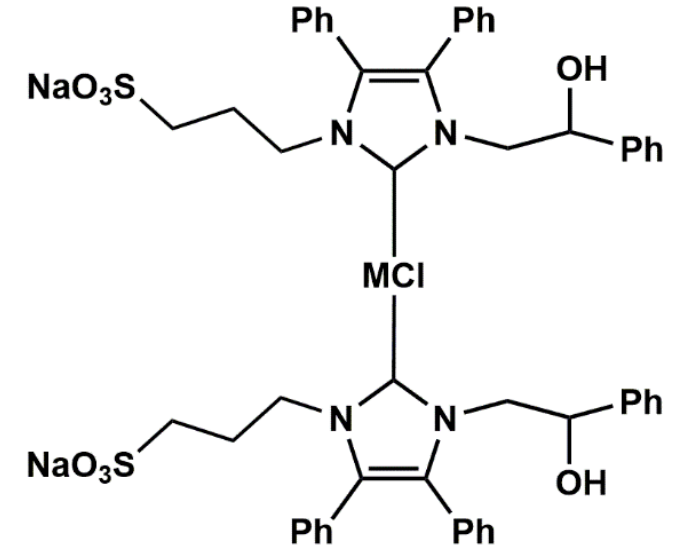
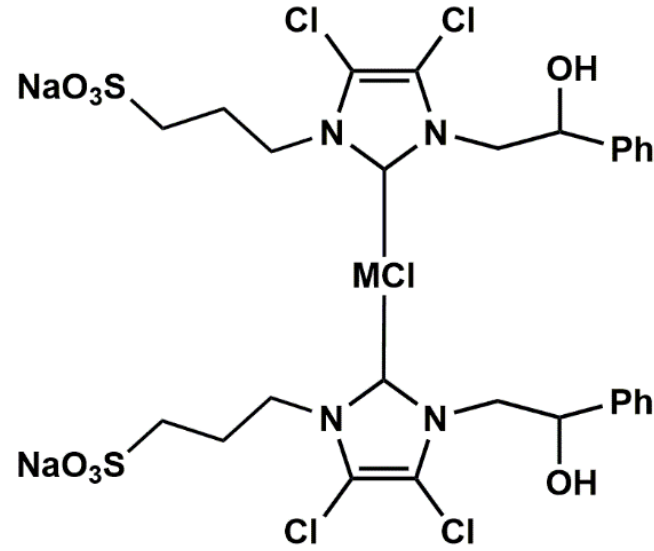
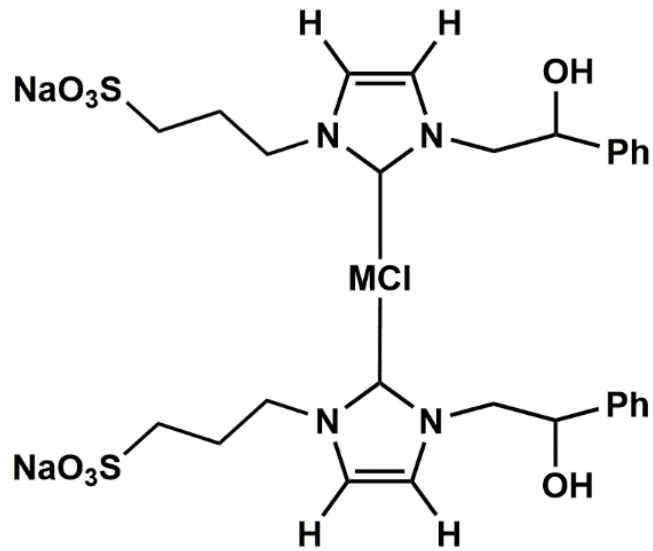
Reazione A³ coupling



Condizioni di reazione: aldeide (1.0 mmol), piperidina (1.2 mmol), fenilacetilene (1.5 mmol), NHC-M (3 mol %), 80 °C, atmosfera inerte, 6 h.

| Aldeide | A ³ in H ₂ O | | A ³ in CH ₃ CN | | A ³ neat | |
|---------------------------|------------------------------------|------|--------------------------------------|------|---------------------|------|
| | Ag | Au | Ag | Au | Ag | Au |
| Paraformaldeide | 40.9 | 94.2 | 35.8 | 91.0 | 34.5 | 40.4 |
| Cicloesilcarbossilaldeide | 53.2 | 43.1 | 28.7 | 44.0 | 58.8 | 76.7 |
| Benzaldeide | 78.0 | 12.7 | 48.0 | 12.8 | 70.9 | 64.6 |

Le conversioni sono state determinate mediante analisi ¹H NMR, usando 2-bromo mesitilene come standard interno.



M = Ag o Au

Grazie per l'attenzione

