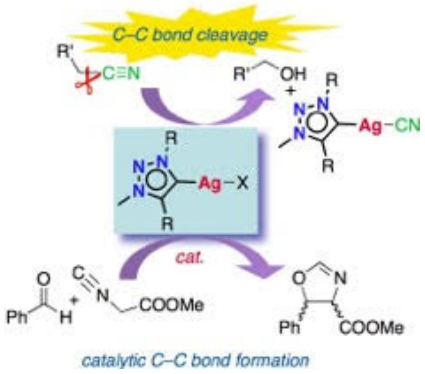
N-heterocyclic carbene complexes of Silver(I) for C-C bond activation of alkylnitriles and catalytic oxazoline synthesis

R. Heath[1,2], E. Keske[2], M. Albrecht[1,2]*

[1]Universität Bern, [2]University College Dublin

N-heterocyclic carbenes (NHCs) are increasingly prevalent ligands for the synthesis of organometallic complexes and in homogeneous catalysis [1]. Reaction of azolium salts with Ag_2O afford Ag–NHC complexes, which are commonly transmetallated *in situ* to different metals [2]. However, to date little attention has been paid to the Ag–NHC intermediates regarding complex formation and potential catalytic applications [3].



We describe that generation of Ag–NHC complexes from azolium salts in refluxing CH_3CN results in a selective C–C bond cleavage and formation of [(NHC)Ag(CN)] complexes; which can also be extended to other alkyl nitrile reagents [4].

Additionally, we will present the catalytic performances of a series of Ag–NHC complexes for the synthesis of oxazolines *via* aldol condensation. These highly active systems reveal relatively unexplored applications of easily accessible silver carbene complexes.

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