

Abstract

Michaelis-Menten-kinetics is the basis of catalysis. Under this aspect, this work deals in detail with the reasons for activity, inhibition and deactivation in various reactions catalysed by rhodium complexes. In a first step, the pre-equilibrium of the *Michaelis-Menten*-equation and the effect of different solvents on the activity of catalytic reactions are intensively analysed using the example of cationic rhodium(I) complexes. The findings were applied to the atom-economic catalytic couplings of alkynes and allenes with nucleophiles developed by *Breit et al.* These were investigated mechanistically and complex chemically by NMR and UV-Vis-spectroscopy. Various intermediates were identified and characterised by X-ray crystal structure analysis.