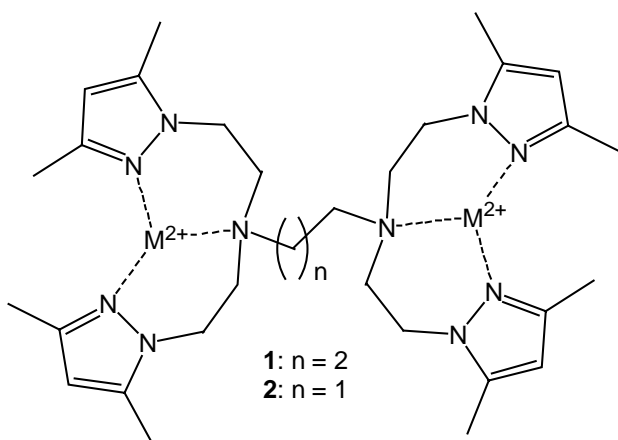


Dinuclear metal complexes interacting with poly d(GC)

Bernhard Spingler and Philipp Antoni

Institute of Inorganic Chemistry, University of Zürich, Switzerland

Dinuclear metal complexes are often used to model the action of dimetallic enzymes. In addition, one can imagine that dimetallic complexes might have new functionalities. During our studies aimed at better understanding the factors which influence the formation of the left-handed Z-DNA,^[1] we speculated that dinuclear metal complexes might induce Z-DNA more efficiently than their mononuclear analogues.^[2] This hypothesis proved to be true: only the homodimetallic complexes of propylene bridging two 1,5,9-triazacyclododecane units but not the corresponding monometallic complexes of 1,5,9-triazacyclododecane did induce Z-DNA.^[3]



In this presentation we would like to introduce the new homodimetallic complexes **1**. They are based on **2** ($M = \text{Cu}$ and Ni) published by the Reedijk group some years ago.^[4, 5] The synthesis of the new ligand of **1** and crystal structures of the complexes **1** and **2** will be shown. Furthermore the interaction of **1** and **2** ($M = \text{Cu}$) with poly d(GC) has been studied. Surprisingly, **1** but not **2** induced the transition to Z-DNA. This astonishingly different interaction of structurally very similar complexes with DNA will be discussed.

Support by the Swiss National Science Foundation and the University of Zürich is gratefully acknowledged.

- [1] B. Spingler, *Inorg. Chem.* **2005**, *44*, 831.
- [2] B. Spingler, C. Da Pieve, *Dalton Trans.* **2005**, in press.
- [3] A. Medina-Molner, B. Spingler, **2005**, manuscript submitted.
- [4] W. L. Driessen, W. G. Haanstra, J. Reedijk, *Acta Cryst.* **1992**, *C48*, 1585.
- [5] N. Veldman, A. L. Spek, G. Tabbi, W. L. Driessen, J. Reedijk, *Acta Cryst.* **1996**, *C52*, 2698.