[MS38-05] How Metallation Affects Solid State Conformation And Assembly of Hexameric Cyclic Peptoids

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For decades chemists have been fascinated by the remarkable functions and conspicuous beauty of natural and synthetic macrocycles. The properties of these structures in areas as diverse as biochemistry, crystal engineering, supramolecular chemistry, catalysis and material sciences have greatly amplified their taxonomic and chemical diversity. In the realm of macrocyclic architectures, cyclopeptoids for their biostability and potential diversity seems to be the ideal candidates to evoke biological activities and novel chemical properties. □N-substituted glycines were prepared and characterized.[1] It has been demonstrated that cyclic peptoids promote the transport across a phospholipid membrane, probably via a carrier mechanism. Thus, they may represent new motifs on which to base artificial ionophoric antibiotics.[2] The biological assays indicated in some cases antifungal activity and no toxicity toward red blood cells.[3] We also probed the attitude of rigid L-proline and chelating N-methoxyethyl glycine residues (included in cyclic hexapeptoid scaffolds) to trigger the formation of metallated supramolecular frameworks.[4] While free macrocycles exhibit a typical tcctcc backbone conformation, the geometry of the amide linkages in the metal complexes results to be all trans, with the carbonyl groups pointing towards the cation. Thus, metallation can be also considered as a possible way to control the conformation of these macrocycles.

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