Crystallization conditions, morphology and crystal structures of cyclic peptoids

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Peptoids (*N*-substituted glycine oligomers) are peptidomimetic compounds that are particularly intriguing due to unique properties such as remarkable biostability, ease of synthesis and conspicuous diversity [1]. Cyclization to create cyclic peptoids (Figure 1) is a successful strategy for limiting the structural flexibility given by the isoenergetic *cis*/*trans* amide bond conformation [2]. This family of compounds is an interesting building block for the construction of solid state supramolecular structures due to the possibility to change the macrocycle ring size and side chains composition [3,4].
Single crystal X-ray diffraction (SCXRD) analysis of cyclic peptoids is crucial for understanding the impact of different side chains and macrocyclic ring size on their solid state assembly; accordingly, several efforts have been made to obtain single crystals suitable for diffraction studies. We have proven in our ongoing studies that using different solvents or crystallization conditions allows to generate crystals of the same compound with specific morphology, which is often the sign of obtaining a distinct polymorph or solvatomorph [5].
In this contribution we would like to investigate the influence of solvents and crystallization techniques on the morphology and crystal forms of different cyclic peptoids.

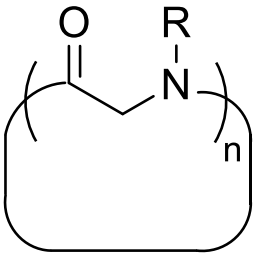

Figure 1. Generic cyclic peptoid.

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