

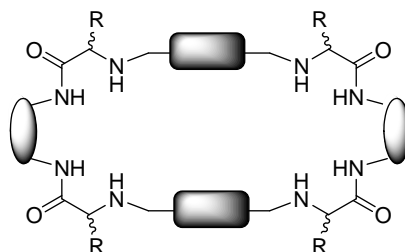
# Nuclear Magnetic Resonance as a powerful tool for studying the Supramolecular Chemistry of amino acid-containing synthetic macrocycles

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Amino acid derived macrocyclic compounds have recently drawn much attention in very different fields like bioorganic and supramolecular chemistry.[1] However, the key step for the chemical synthesis of this family of compounds is the macrocyclization reaction, which usually leads to low yields, mixtures of oligomers of different sizes and tedious purification steps. In order to overcome those problems, we have used different approaches based on the designed folding of the precursors[2] or the use of anionic templates[3] to promote the macrocyclization reaction. Moreover, the final macrocyclic compounds showed very interesting supramolecular properties, such as the efficient interaction with dipeptides or their self-assembling into hierarchical nanostructures. Within these research topics, NMR has proved to be a very powerful tool for the deep understanding of the processes. Additionally, the data obtained by NMR can be complemented with other experimental and theoretical approaches.



[1] Gibson, S. E.; Lecci, C. *Angew. Chem. Int. Ed.* **2006**, *45*, 1364–1377.

[2] (a) Bru, M.; Alfonso, I.; Burguete, M. I.; Luis, S. V. *Tetrahedron Lett.* **2005**, *46*, 7781–7785.

(b) Alfonso, I.; Bolte, M.; Bru, M.; Burguete, M. I.; Luis, S. V. *Chem. Eur. J.* **2008**, in press.

[3] (a) Bru, M.; Alfonso, I.; Burguete, M. I.; Luis, S. V. *Angew. Chem. Int. Ed.* **2006**, *45*, 6155–6159. (b) Alfonso, I.; Bolte, M.; Bru, M.; Burguete, M. I.; Luis, S. V.; Rubio, J. *J. Am. Chem. Soc.* **2008**, *130*, 6137–6144.

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