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AROMATIC FOLDAMERS: EXPANDING THE CHEMICAL SPACE

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Salle 2

Biographie

Ivan Huc (born 1969) studied chemistry at the Ecole Normale Supérieure (Paris), and received his PhD in 1994 from the Université Pierre et Marie Curie (Paris) under the guidance of Dr C. Rolando (ENS) and Prof. J. Rebek Jr (MIT). From 1995 to 1998 he was at the University of Strasbourg first as a Post-doc with Dr J.-P. Behr then as a CNRS researcher with Prof. J.-M. Lehn. Since 1998, he has been a group leader at the Institut Européen de Chimie et Biologie in Bordeaux where he holds a CNRS research director position and where he has been serving as co-director since 2008. His current research interests are foldamers and biomimetic supramolecular chemistry.

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Abstract:

Aromatic amide oligomers represent a new, distinct, and promising class of synthetic foldamers – oligomers that adopt stable folded conformations. Single helical structures are predictable, show unprecedented conformational stability, and constitute convenient building blocks to elaborate synthetic, very large (protein-sized) folded architectures (Fig. 1). They possess a high propensity to assemble into double, triple and quadruple helices, or to fold into sheet-like structures. Cavities can be designed within such synthetic molecules that enable them to act as artificial receptors and molecular motors. Water soluble analogues of these foldamers show promise in nucleic acid and protein recognition. This lecture will give an overview of the design principles of these functional molecular architectures and of their associated dynamics, including folding-unfolding equilibria, guest binding and release as well as translational and rotational motions.

Références

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