

# CHIRALITY INDUCTION IN MÖBIUS HEXAPHYRIN-CYCLODEXTRIN METAL COMPLEXES : A THREE – TYPE CHIRALITY TOTEM

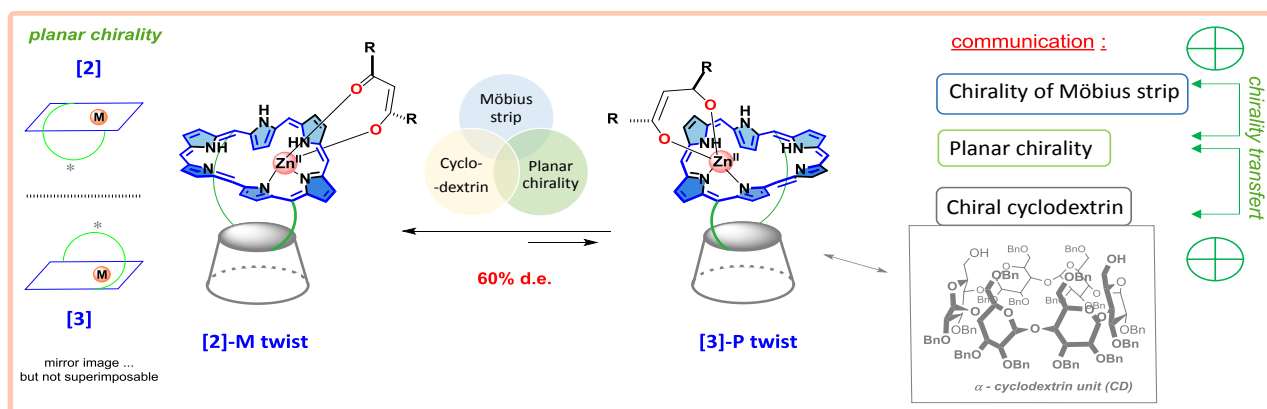
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Hexaphyrins <sup>[1]</sup> (6 pyrrole homologue of porphyrin) present different types of aromaticity and conformation at the origin of remarkable coordination properties.<sup>[2]</sup> Whereas metallation of planar and Möbius hexaphyrins has been performed successfully, it has been, so far, mostly described on macrocycles deprived of functional groups. Besides, the induction of chirality in Möbius rings is still in its infancy. Whereas a few examples of enantiomeric separation of Möbius rings have been achieved, only two asymmetric synthesis<sup>[3,4a]</sup> have been accomplished. In our lab, we thus explore the coordination and chiroptical properties of capped hexaphyrins.<sup>[4]</sup> In particular, we aim to build hybrid ligands that covalently link an hexaphyrin to a cyclodextrin cavity (Scheme 1). Interestingly, these hybrid ligands present 3 sources of chirality assembled in a totem fashion : the Möbius strip, the planar chirality due to the linking pattern, and the cyclodextrin unit. Coordination and chiroptical studies revealed a chiral induction with the highest stereoselectivity reported to date for a Möbius ring (60% d.e.) assignable to communication between the 3 sources of chirality and amplified by an achiral effector, which is promising for chiroptical switches and asymmetric catalysts.



**Scheme 1** : Representation of Möbius hexaphyrin-cyclodextrin complexes

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*References* :

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