

Modulation of Chirality Induction in Bis(Zinc Porphyrin)

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ビス（亜鉛ポルフィリン）におけるキラリティー誘起の制御

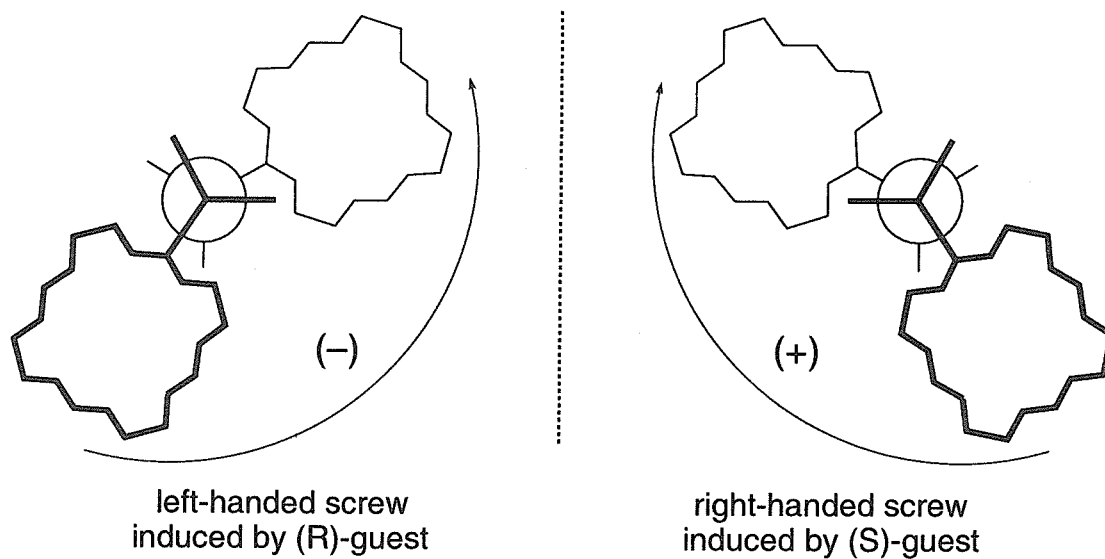
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Supramolecular chirogenesis is a new area of interdisciplinary research in modern chemical sciences, which combines supramolecular chemistry and molecular chirality. This phenomenon is widely observed in many natural and artificial systems, and deals with chiral information transfer from the source of asymmetry to the intrinsically achiral component or whole assembly via noncovalent interactions.

We have discovered that bis(zinc porphyrin) serves as the best suited achiral host for the study of supramolecular chirality induction processes, which involve the clear and easily observable spectral switching-on behavior from the initial inherently achiral structure to the final chiral supramolecular assembly upon complexation with chiral guest. The mechanism of chirogenesis process is based on unidirectional twisting governed by the absolute configuration of guest.¹ Thus, (*S*)-monoamines and alcohols give right-handed screw exhibiting positive CD chirality, while (*R*)-guests yield left-handed screw exhibiting negative CD chirality.

It was found that the chirality induction is affected by various external and internal factors. The roles of temperature, stoichiometry, bonding strength and bulkiness parameters controlling the chirogenesis process in bis(zinc porphyrin) and application of this system to the CD spectral determination of absolute configuration of chiral guest are discussed.



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