

SOLID STATE STRUCTURES OF CALIX[4]ARENE DIMETHOXYCARBOXYLIC ACID WITH BIOMOLECULES

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Calixarenes play an important role in supramolecular chemistry and for the complexation of organic cations. Water-soluble anionic calixarenes are capable of complexing small biologically active molecules, amino acids and proteins. The solid-state complexes of *para*-sulfonatocalix[4]arenes and calix[4]arene diphosphate studied thus far show a remarkable diversity of structure types: from traditional bilayers through zigzag bilayers, “Russian doll” capsules, “Ferris wheel” complexes to aqua-channel hexagonal structures for calix[4]arene diphosphate, and nanospheroidal and tubular assemblies for *para*-sulfonatocalix[4]arenes.

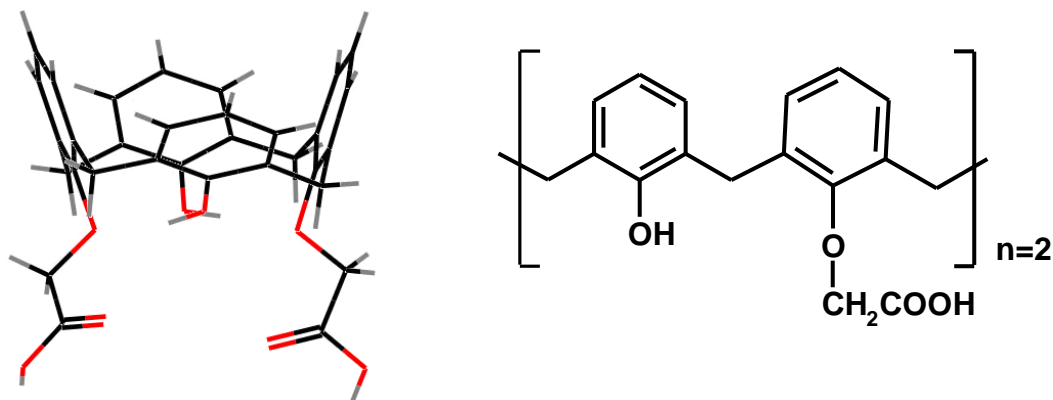


Fig.1: Calix[4]arene dimethoxycarboxylic acid in cone conformation.

We present here for the first time solid state complexes of calix[4]arene dimethoxycarboxylic acid¹ (Fig.1) with biomolecules: tamoxifen, tolmetin and streptidine.

The field of biopharmaceutical application of anionic calixarenes by their complexation to cationic groups present in biomacromolecules is just starting, but it can be expected to be of great importance in the future.

1. A. N. Lazar, N. Dupont, A. Navaza and A. W. Coleman, *Chem. Commun.*, 2006, 1076–1078.