

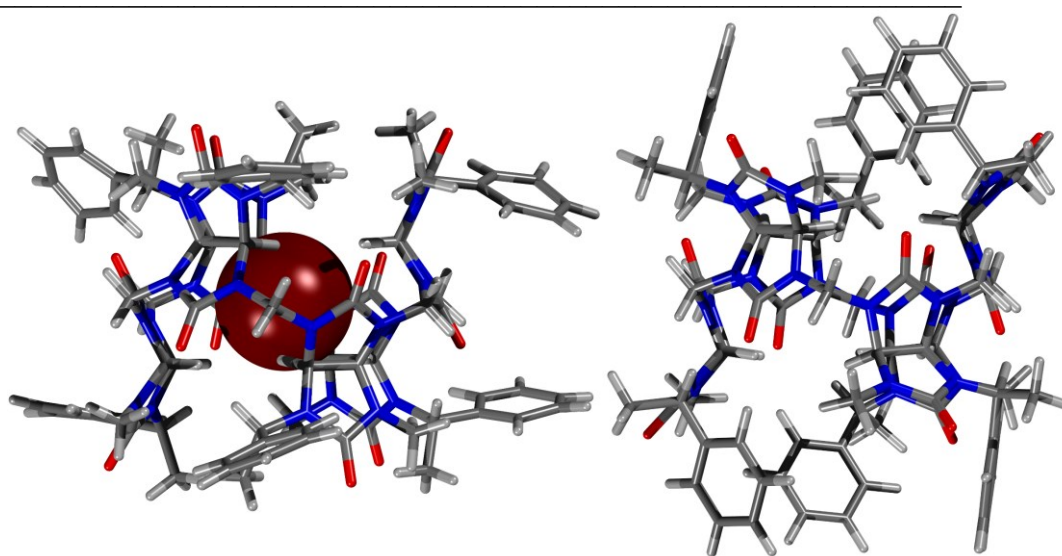
# Chiral Bambusurils

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Bambusurils are a group of macrocyclic compounds that are composed of repeating glycoluril units connected by a row of methylene bridges.<sup>1</sup> Bambusurils are potent anion receptors. They can bind anions inside their cavity with high affinity in organic solvents as well as in aqueous media.<sup>2,3</sup> Most bambusurils are achiral compounds and achiral inorganic are mainly applied as guests for complexation. This work focuses on synthesis of novel chiral bambusuril derivatives and investigation of their supramolecular properties.<sup>4,5</sup> These compounds could serve as receptors for discrimination of anions derived from chiral organic acids. The project starts with synthesis of enantiomerically pure chiral glycoluril building blocks. These glycolurils were then subjected to macrocyclization reactions with paraformaldehyde in the presence of an acid catalyst and an anionic template yielding the desired chiral macrocycles. Supramolecular complexes of the macrocycles and chiral carboxylate anions were studied by means of NMR. The complexation was slow on the NMR time scale. Association constants of the complexes were determined from the concentrations of the free and complexed form of the macrocycles that were calculated from integrals of corresponding NMR signals. Enantioselective binding of chiral anions was observed.



**Figure 1.** Structures of chiral bambusuril macrocycles.

## References

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