**Bambusuril analogs based on alternating glycoluril and xylylene units**

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Glycoluril is a urea-based heterocyclic molecule, which is a suitable building block for macrocyclic receptors. These host molecules can interact with cationic, anionic or neutral guests. Bambusurils1 are potent anion receptors that were used to detect and quantify anions in a complex mixture by NMR2. In order to allow anion sensing by UV-VIS spectroscopy, we designed a new bambusuril derivative incorporating aromatic groups in its structure.

Here we present synthesis of the new hybrid macrocycles consisting of glycoluril and aromatic units. Inspired by work of prof. Shimizu3, we employed basic synthetic conditions which afforded us with mixture of macrocyclic of various sizes. The macrocyclic homologues were separated by reverse-phase flash chromatography and characterized by the means of NMR spectroscopy and X-ray crystallography. The conformational behavior of separated isomers was investigated using DFT models and variable-temperature NMR.



**Figure 1.** Xylylene-glycoluril macrocycle.

**References**

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