**Bambusuril Recognition of [Au(CN)2]– in Water**

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Bambusurils are macrocyclic compounds that can strongly bind anions in water. Until now, bambusuril has been investigated as a receptor of different anions including halides, carboxylates, and other biologically relevant oxoanions such as phosphate, sulfate, and nitrate. Herein, we decided to study supramolecular complexes between bambusurils and Au(CN)2– in water. Au(CN)2– has attracted our attention for its unique photochemical properties and its employment in the gold mining industry. Among all bambusurils, we selected PEG-BU1 (Fig. 1) for its good solubility in water. The formation of the complex between PEG-BU and Au(CN)2– was investigated not only by means of 1H NMR and ITC methods but also, through UV-Vis spectroscopy. The high stability of the complex and the photochemical properties of Au(CN)2– gave rise to a novel and accurate assay. Furthermore, the exceptional features of this new complex make bambusurils promising candidates with the application in the gold mining industry.



Fig.1 Schematic representation of bambusuril macrocycle PEG-BU.

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