

SENSING OF CITRATE WITH A SYNTHETIC HOST

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Abstract: Binding and sensing of small biological relevant anions by synthetic receptors is of considerable interest because of the significant roles played by anions in biochemical reactions. In particular, a citrate anion is known as an important intermediate during the metabolic process in human body. Low urinary citrate excretion has been shown to be important in the pathogenesis of nephrocalcinosis and nephrolithiasis. Citrate has also been identified as an *in vivo* marker for the discrimination of prostate cancer. Thus, the development of artificial receptors for citrate sensing is important in the field of supramolecular chemistry. In our work, we synthesized a thiophene-based hexamine macrocycle and converted to dinuclear copper(II) complex. The structure of the metal complex was characterized by single crystal X-ray diffraction technique. This copper(II) complex was used for different biological anions, showing high selectivity for citrate anion in water at physiological pH.

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