SENSING OF ANIONS WITH MACROCYCLIC DINUCLEAR COPPER (II) COMPLEXES

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Abstract: The field of anion coordination chemistry continues to expand with new synthetic molecules capable of recognizing anions with environmental and biomedical relevance. Although transition metal complexes with the monocyclic analogues are well documented and a high level of understanding has been achieved on physicochemical and structural aspects, their application as anion receptors is comparatively little known. In our continuing effort in designing anion binding hosts, we synthesized new macrocycle-based compounds (L₁ and L₂) from their macrocyclic precursors. The receptors are shown to recognize and detect anions in solutions. The receptors were studied by UV-Vis/fluorescence titrations and also by colorimetric studies for different anions. L₁ showed strong selectivity for iodide while L₂ for phosphate anion in water. The new receptors are capable of discriminating anions that can be monitored from their wavelength, absorption intensity or visual color change.

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