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Synthetic receptors based on calix[4]arene functionalized at the lower rim in molecular recognition of dicarboxylic, α-hydroxycarboxylic, and α-amino acids

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Abstract

New calix[4]arenes, di- and tetrasubstituted at the lower rim, with different functional groups were synthesized. They were studied as carriers of a series of dicarboxylic and α-hydroxycarboxylic acids through a liquid impregnated membrane. The calix[4]arenes under study are capable of molecular recognition of oxalic acid in the series of structurally similar dicarboxylic and α-hydroxycarboxylic acids. The regularities found make it possible to change purposefully the receptor ability of 1,3-disubstituted calix[4]arenes by variation of the nature of substituents.

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Keywords

α-hydroxycarboxylic acids, calix[4]arene, carboxylate anions, dicarboxylic acids, membrane transport, molecular recognition, synthetic receptors, thiacalix[4]arene