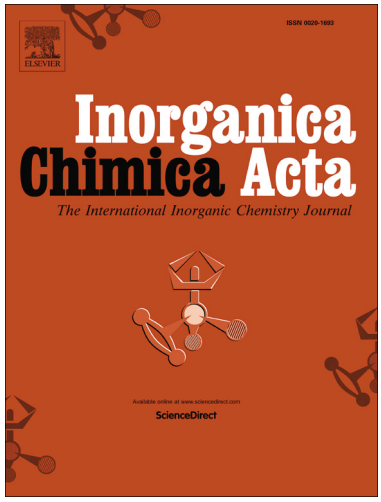

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Abstract

In this research, synthesis and characterization of a novel unsymmetric water-soluble porphyrin having three *N*-methylpyridinium and one lipoic acid-based *meso*-substituents were described. Effects of incorporation between a lipoic acid unit and a pyridinium-substituted porphyrin macrocycle, and the presence of Mn(II) as a metal center of the porphyrin ring on cytotoxicity of the compounds in Human keratinocyte (HaCaT) and Human dermal fibroblast, adult (HDFa) cells, and on mitochondria-targeting activity in the HaCaT cells were investigated. The biological studies revealed that the target lipoic acid-containing Mn(II)-porphyrin had low cytotoxicity with IC_{50} values bigger than 115 μM and of 87 μM in the HaCaT and HDFa cells,