

NODAHep: a new triaza dicarboxylic chelator for manganese(II)

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Gd(III) is the paramagnetic metal ion most used for the preparation of contrast agents for magnetic resonance imaging, nevertheless Mn(II) can also be used [1]. So far there is only one FDA approved manganese-based contrast agent (Telascan) [2], in which the Mn(II) ion is slowly released in the tissues and the contrast observed is due to biomolecules-associated Mn(II).

In this work we present a new ligand (NODAHep = 1,4,7-triazacyclononane-*N,N'*-acetic acid-*N''*-heptane) for Mn(II). NODAHep is pentadentate, leaving one coordination site in the Mn(II) inner-sphere for a water molecule, and displays an alkylic side chain designed to make the chelate amphiphilic, increasing the rotational correlation time and consequently enhancing the chelate relaxivity [3]. The cmc of the chelate was determined by fluorescence using ANS (8-Anilino-naphthalene-1-sulfonate) as probe. The relaxivity of the chelate was measured at 20 MHz in the presence and absence of bovine serum albumin. The pH and temperature dependence of the relaxivity was also studied. The stability of the chelate in the presence of Zn(II) was investigated through relaxivity measurements.

References:

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