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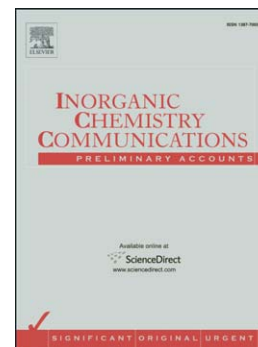
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Synthesis and relaxation properties of two non-ion complexes of gadolinium(III) and manganese(II) with derivatives from diethylene triamine pentaacetic acid and isoniazid

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Abstract

In this paper, two novel ligands (H_3L^1 , H_2L^2) have been synthesized from diethylene triamine pentaacetic acid (DTPA) and isoniazid in different conditions. H_3L^1 has three carboxylic groups, and H_2L^2 has two carboxylic groups. Their non-ion complexes of GdL^1 and MnL^2 holding promise of magnetic resonance imaging(MRI) are synthesized, and relaxivity of complexes are determined, respectively. The relaxivity of GdL^1 ($R_1=6.07\text{ L}\cdot\text{mmol}^{-1}\cdot\text{s}^{-1}$) and MnL^2 ($R_1=6.94\text{ L}\cdot\text{mmol}^{-1}\cdot\text{s}^{-1}$) are larger than that of $Gd(DTPA)^{2-}$ ($R_1=4.34\text{ L}\cdot\text{mmol}^{-1}\cdot\text{s}^{-1}$). It is more significant that relaxivity of MnL^2 is larger than that of GdL^1 . The results showed that two non-ion complexes are prospective MRI contrast agent.

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