

FULL PAPERS

[Gd(C₁₀H₉N₂O₄)(C₁₀H₈N₂O₄)(H₂O)₃]₂·phen·4H₂O的晶体结构和生物活性

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摘要 在水乙醇混合溶剂中, 首次得到了2-羧基丙酸水杨酰肼、1, 10-菲啰啉与硝酸钆形成的配合物[Gd(C₁₀H₉N₂O₄)(C₁₀H₈N₂O₄)(H₂O)₃]₂·phen·4H₂O, 并测试了其单晶结构。该配合物属三斜晶系, 空间群为*P*-1。每个配合物分子中有两个九配位的钆的结构单元, 每个钆离子与两个三齿配体2-羧基丙酸水杨酰肼(分别以负一价和负二价形式)

和三个水分子配位。每个钆单元在空间呈扭曲的单帽四方反棱柱。同时还有一个游离的1, 10-菲啰啉存在于晶格中, 通过氢键与配位水作用。生物活性试验表明该配合物对三种病原菌有一定的抑菌活性。

关键词 [钆配合物](#), [2-羧基丙酸水杨酰肼](#), [1,10-菲啰啉](#), [晶体结构](#), [生物活性](#)

分类号

Crystal Structure and Bioactivity of Complex [Gd(C₁₀H₉N₂O₄)(C₁₀H₈N₂O₄)(H₂O)₃]₂·phen·4H₂O

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Abstract A novel gadolinium(III) complex with *N*-(2-propionic acid)-salicyloyl hydrazone (C₁₀H₁₀N₂O₄, H₃L) and 1,10-phenanthroline (C₁₂H₈N₂, phen) was prepared and characterized. The crystal structure of [Gd(H₂L)(HL)-(H₂O)₃]₂·phen·4H₂O was determined by X-ray single crystal diffractometry. The crystal complex crystallizes in the triclinic system with space group *P*-1. There are two 9-coordinated structure units in every complex molecule, in which Gd(III) is coordinated by two tridentate ligands (H₂L and HL forms) and three water molecules and both the structural units take a distorted monocapped square antiprism. There is a free 1,10-phenanthroline connecting with coordinated water by hydrogen bonds in the crystal. The bioactivity tests indicate that the complex is an inhibitor against three bacteria.

Key words [gadolinium\(III\) complex](#), [N-\(2-propionic acid\)-salicyloyl hydrazone](#), [1, 10-phenanthroline](#), [crystal structure](#), [bioactivity](#)

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