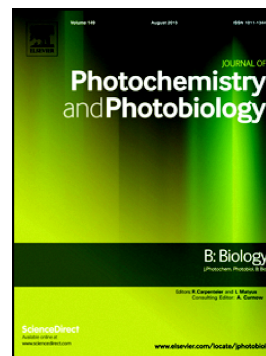


Accepted Manuscript

pH Dependent synthesis of two isomeric dinuclear Cerium(II) complexes: Structures, DNA interactions, cytotoxic activity and apoptotic study

En-Jun Gao, Jun-Qi Su, Hai-Tao Jin, Si-Jia Liu, Fu-Chen Zhao, Yang Meng, Xiao-Yu Ma, Jing Ge, Ya-Guang Sun, Wanzhong Zhang, Ming-Chang Zhu



PII: S1011-1344(16)30048-3

DOI: doi: [10.1016/j.jphotobiol.2017.04.010](https://doi.org/10.1016/j.jphotobiol.2017.04.010)

Reference: JPB 10789

To appear in: *Journal of Photochemistry & Photobiology, B: Biology*

Received date: 22 January 2016

Accepted date: 10 April 2017

Please cite this article as: En-Jun Gao, Jun-Qi Su, Hai-Tao Jin, Si-Jia Liu, Fu-Chen Zhao, Yang Meng, Xiao-Yu Ma, Jing Ge, Ya-Guang Sun, Wanzhong Zhang, Ming-Chang Zhu, pH Dependent synthesis of two isomeric dinuclear Cerium(II) complexes: Structures, DNA interactions, cytotoxic activity and apoptotic study. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Jpb(2017), doi: [10.1016/j.jphotobiol.2017.04.010](https://doi.org/10.1016/j.jphotobiol.2017.04.010)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

pH dependent synthesis of two isomeric dinuclear cerium(II) complexes: structures, DNA interactions, cytotoxic activity and apoptotic study

En-Jun Gao*, Jun-Qi Su, Hai-Tao Jin, Si-Jia Liu, Fu-Chen Zhao, Yang Meng, Xiao-Yu Ma, Jing Ge, Ya-Guang Sun, Wanzhong Zhang, Ming-Chang Zhu*

The key Laboratory of the Inorganic Molecule-Based chemistry of Liaoning Province and Department of Coordination Chemistry, Shenyang University of Chemical Technology, Shenyang 110142, China

Abstract

Two isomeric dinuclear Cerium(II) complexes 1 and 2, formulated as $\text{Ce}_2(\text{phen})_2(\text{NO}_3)_2(\text{L})_4$ [L=phenylacetic acid, phen=1,10-phenanthroline] was synthesized under solvothermal conditions at different pH values. The two complexes were characterized by elemental analysis, IR and single crystal X-ray diffraction. Complexes 1 and 2 were studied the binding with DNA and against cytotoxic activity. Fluorescence analysis indicated that the two complexes can bind to DNA. The changes with different gradient concentration of DNA added into the complexes in absorption spectra show a strong π -stacking interaction between the complexes and DNA base pairs. The Cerium(II) complexes showed good cytotoxic activity against cancer cell lines, being 2 the most potent complex. Apoptotic studies of the two novel dinuclear complexes showed significant inhibitory rate on cancer cell growth line KB.

[Insert Running title of <72 characters]

Download English Version:

<https://daneshyari.com/en/article/4754477>

Download Persian Version:

<https://daneshyari.com/article/4754477>

[Daneshyari.com](https://daneshyari.com)