

Accepted Manuscript

Research paper

Coordination-driven self-assembly and anticancer studies of thiophene-derived donor and arene ruthenium acceptors

Taegeun Kim, Hae Seong Song, Jatinder Singh, Donghyuk Kim, Hyunuk Kim, Se Chan Kang, Ki-Whan Chi

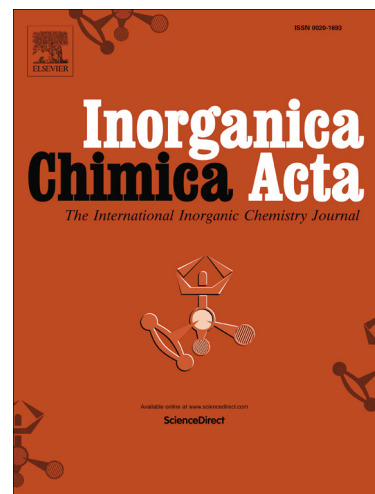
PII: S0020-1693(18)30422-5
DOI: <https://doi.org/10.1016/j.ica.2018.05.035>
Reference: ICA 18286

To appear in: *Inorganica Chimica Acta*

Received Date: 21 March 2018
Revised Date: 20 May 2018
Accepted Date: 26 May 2018

Please cite this article as: T. Kim, H.S. Song, J. Singh, D. Kim, H. Kim, S.C. Kang, K-W. Chi, Coordination-driven self-assembly and anticancer studies of thiophene-derived donor and arene ruthenium acceptors, *Inorganica Chimica Acta* (2018), doi: <https://doi.org/10.1016/j.ica.2018.05.035>

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.



Coordination-driven self-assembly and anticancer studies of thiophene-derived donor and arene ruthenium acceptors

Taegeun Kim,^{#a} Hae Seong Song,^{#b} Jatinder Singh,^a Donghyuk Kim,^b Hyunuk Kim,^{*c} Se Chan Kang,^{*b} Ki-Whan Chi^{*a}

ABSTRACT

New metallomacrocycles, **5-8**, were synthesized by the coordination-driven self-assembly of thiophene-derived donor and arene ruthenium acceptors. Metallomacrocycles, **5-8**, were fully characterized by ¹H, ¹³C NMR spectroscopy, ESI-MS and elemental analysis. The molecular structure of macrocycle **8** was determined by single-crystal X-ray diffraction analysis. In addition, the anticancer activities of metallomacrocycles **5-8** were evaluated. The cytotoxic potential of macrocycle **7** was assessed using several cancer cells with different origins using the Tali assay and by quantitative western blotting. The results obtained support the notion that macrocycle **7** induces apoptotic cell death by activating intrinsic and extrinsic apoptosis pathways.

KEYWORDS: Coordination-driven self-assembly, thiophene, anticancer, metallomacrocycles.

^aDepartment of Chemistry, University of Ulsan, Ulsan 44610, Republic of Korea. E-mail: kwchi@ulsan.ac.kr

^bDepartment of Oriental Biotechnology, College of Life Sciences, Kyung Hee University, Yongin 17104, Republic of Korea. E-mail: sckang@khu.ac.kr

^cEnergy Materials Laboratory, Korea Institute of Energy Research, Daejeon 34129, Republic of Korea. E-mail: hyunuk@kier.re.kr

[#]These authors contributed equally to this work.

Download English Version:

<https://daneshyari.com/en/article/7750215>

Download Persian Version:

<https://daneshyari.com/article/7750215>

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