

Accepted Manuscript

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PII: S0277-5387(17)30793-3
DOI: <https://doi.org/10.1016/j.poly.2017.12.011>
Reference: POLY 12967

To appear in: *Polyhedron*

Received Date: 20 October 2017
Accepted Date: 7 December 2017

Please cite this article as: V. Stefanou, D. Matiadis, D. Tsironis, O. Igglessi-Markopoulou, V. McKee, J. Markopoulos, Synthesis and Single Crystal X-Ray Diffraction Studies of Coumarin-based Zn(II) and Mn(II) Complexes, involving Supramolecular Interactions, *Polyhedron* (2017), doi: <https://doi.org/10.1016/j.poly.2017.12.011>

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Synthesis and Single Crystal X-Ray Diffraction Studies of Coumarin-based Zn(II) and Mn(II) Complexes, involving Supramolecular Interactions

Valentina Stefanou ^a, Dimitrios Matiadis ^a, Dimitrios Tsironis ^a, Olga Igglessi-Markopoulou ^a, Vickie McKee ^b, John Markopoulos ^{c*}

a National Technical University of Athens, School of Chemical Engineering, Laboratory of Organic Chemistry, Zografou Campus, Athens 15773, Greece. Fax: +30 210 772 3072; Tel: +30 210 772 3259

b School of Chemical Sciences, Dublin City University, Glasnevin, Dublin 9, Ireland.

c Laboratory of Inorganic Chemistry, Department of Chemistry, University of Athens, Panepistimiopolis, 15771 Athens, Greece. Fax: +30 210 772 3072; Tel: +30 210 727 4450

Abstract

In this work we describe the synthesis and characterization of two supramolecular coordination complexes, namely [Zn(Cuma)₂(MeOH)₂] **2** and [Mn(Cuma)₂(MeOH)₂] **3**, obtained from the self-assembly of Zn(II) and Mn(II) acceptors with the 3-benzoyl-4-hydroxycoumarin ligand donor (**1**) possessing the β,β'-diketonate moiety. The coordination mode of the ligand, incorporating intra- and intermolecular hydrogen bonds with the metal atoms, was established by single crystal X-ray diffraction. The Zn(II) and Mn(II) complexes each show a 1D structural motif which is further assembled into 3D supramolecular architecture by hydrogen bonds and π-stacking interactions.

Keywords

Coumarin; Mn(II) complex; Cu(II) complex; X-ray structure; β,β'-dicarbonyl compound

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