Zinc(II) complexes derived from imidazo[1,2-a]pyridin-2-ylacetic acid (H*IP*-2-*ac*): [Zn(*IP*-2-*ac*)$_2$(H$_2$O)] and unexpectedly, [Zn$_3$(*IP*-2-*ac*)$_6$(H$_2$O)]·11H$_2$O.

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Rok wydania

2015

Czasopismo

Journal of Coordination Chemistry

Numer woluminu

68

Strony

2208-2224

DOI

10.1080/00958972.2015.1048241

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Two zinc(II) complexes based on imidazo[1,2-a]pyridin-2-ylacetate (*IP*-2-*ac*), [Zn(*IP*-2-*ac*)$_2$(H$_2$O)] (**1**) and [Zn$_3$(*IP*-2-*ac*)$_6$(H$_2$O)]·11H$_2$O (**2**), were synthesized and characterized by single-crystal X-ray diffraction. In both **1** and **2,** zinc(II) ions are five-coordinate with N$_2$O$_3$ donor set, best described as a distorted trigonal-bipyramidal geometry. In **1**, two *IP*-2-*ac* ligands chelate zinc(II) through a *N,O* donor set, whereas in **2,** both bidentate and μ-bridging binding modes of *IP*-2-*ac* are observed. The crystal of **1** comprises discrete Zn(*IP*-2-*ac*)$_2$(H$_2$O) coordination entities combined into layers by hydrogen bonds. Inter-layer stabilization of the 3-D crystal lattice is provided by weak C–H···O contacts and $\pi\cdots\pi$ interactions. The structure of **2** consists of discrete trinuclear Zn$_3$(*IP*-2-*ac*)$_6$(H$_2$O) coordination entities joined into crystal lattice by multiple water molecules.

Compound **1** was characterized by FTIR and FT-Raman spectroscopy, and in terms of thermal stability. Furthermore, its antibacterial activity was tested against selected gram-positive, gram-negative bacteria, and *Candida albicans* yeast and compared with activity of previously reported [M(*IP*-2-*ac*)$_2$(H$_2$O)$_2$]·2H$_2$O (M = Co, Ni, Mn, Cd) complexes.

Słowa kluczowe

imidazo[1,2-a]pyridine, Zinc(II) complexes, X-ray structures, Vibrational spectra, Thermal stability, Antibacterial activity

Adres publiczny

http://dx.doi.org/10.1080/00958972.2015.1048241