

ABSTRACT

Fourteen novel Zn(II) complexes, $[\text{Zn}_2(\text{diclo})_2(\text{H}_2\text{O})_2]$ (**1**), $[\text{Zn}_2(\text{Indo})_4]$ (**2**), $[\text{Zn}(\text{diclo})_4(\text{pico})_2]$ (**3**), $[\text{Zn}_2(\text{indo})_4(\text{pico})_2]$ (**4**), $[\text{Zn}(\text{diclo})_2(\text{apy})_2]$ (**5**), $[\text{Zn}(\text{indo})_2(\text{apy})_2]$ (**6**), $[\text{Zn}(\text{diclo})_2(\text{ampy})]$ (**7**), $[\text{Zn}(\text{indo})_2(\text{ampy})]$ (**8**), $[\text{Zn}(\text{diclo})_2(\text{phen})]$ (**9**), $[\text{Zn}(\text{diclo})_2(\text{phen})]$ (**9**), $[\text{Zn}(\text{indo})_2(\text{phen})]$ (**10**), $[\text{Zn}(\text{diclo})_2(\text{dmph})]$ (**11**), $[\text{Zn}(\text{indo})_2(\text{dmph})]$ (**12**), $[\text{Zn}(\text{diclo})_2(\text{admp})_2]$ (**13**), $[\text{Zn}(\text{indo})_2(\text{admp})_2]$ (**14**), were synthesized and characterized by means of IR, ^1H -NMR, $^{13}\text{C}\{\text{H}\}$ -NMR and UV-Vis spectrometry. The crystal structures of complexes (**1**), (**4**), (**5**), (**11**) were determined by single crystal X-ray diffraction. Melting point and solubility of the synthesized complexes were determined.

The *in-vitro* anti-bacterial activity of the synthesized complexes was screened using agar diffusion assay against two strains of Gram-negative bacteria (*Escherichia coli*, *Pseudomonas aeruginosa*), and two strains of Gram-positive bacteria (*Staphylococcus aureus*, *Listeria monocytogenes*), the results showed higher activity against *Pseudomonas aeruginosa* and *Staphylococcus aureus*, in comparison with diclofenac, indomethacin and free nitrogen ligands.