

Cobalt(II) and zinc(II) compounds with benzimidazolic derivatives. A structure-activity study.

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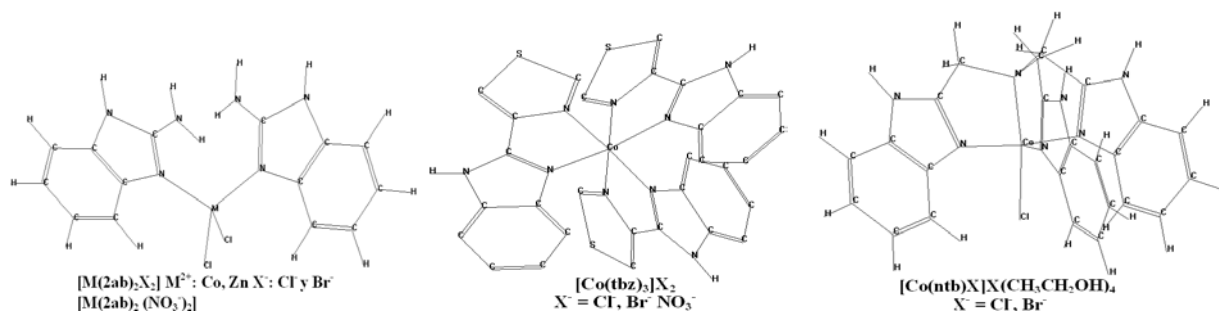
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In this paper, we present our results on the biological activity (in vitro), of compounds with 2-substituted benzimidazole derivatives and cobalt(II) and zinc(II), where R = H, NH₂, carbamate, thiazolyl and [CH₂-(bz)₃]. We investigated the influence of different factors on their activity, as geometry, ligand binding modes, chelates (monochelate, bischelate, trischelate, and tetrachelate), counterions and coordination sites (N, O, S). All coordination compounds were characterized by X-ray crystal diffraction, IR, UV-VIS diffuse reflectance, NMR, and elemental analysis. The compounds were characterized in solid state and solution. Their antibacterial activity was tested on *Gram*(+) *Staphylococcus aureus*, *Micrococcus luteus*, *Bacillus cereus*, and *Gram*(-) *Salmonella tify*, *Pseudomonas aeruginosa*, *Escherichia coli* and *Proteus vulgaris*. [Co(ntb)Br]Br and [Co(ntb)Cl]Cl compounds, were the most active in *Gram*(+) and *Gram*(-) strains, followed by [Co(bz)₂Cl₂], while the complexes [Co(bz)₂Br₂], [Co(2ab)₂Cl₂], and [Co(2ab)₂(NO₃)₂] were selective towards *Proteus vulgaris* and [Zn(2ab)₂Cl₂] showed activity in the *Bacillus cereus* strain. The structure-activity results will be discuss.



We acknowledge DGAPA-UNAM IN-2111803 for financial support.

J. Michel-Grevy, F. Téllez, S. Bernès, H. Nöth, R. Contreras, N. Barba-Behrens, *Inorg.Chim.Acta*, 339, 2002, 532-542.