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SYNTHESIS OF INDOLINE DITHIOCARBAMATE METAL COMPLEXES

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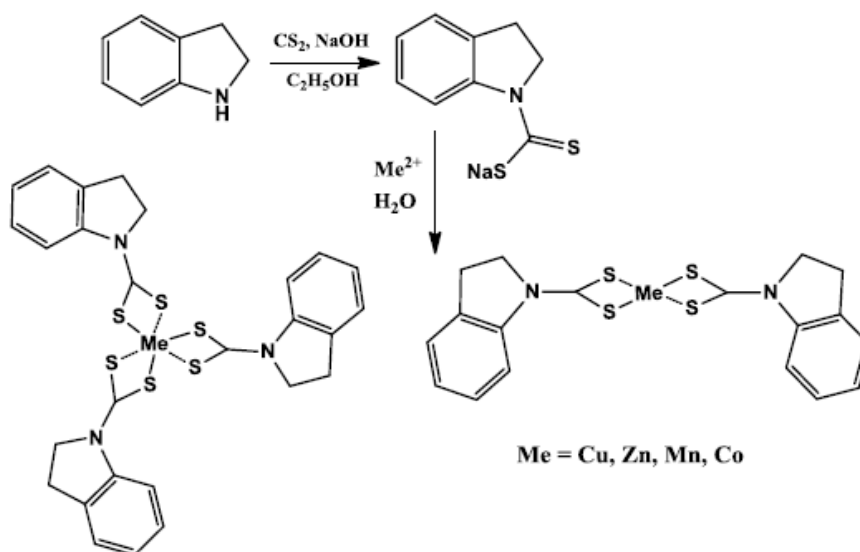
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Dithiocarbamates are worthy of attention organosulfur compounds that find application in several fields from agriculture and to medicine. Dithiocarbamates are well known metal complexing agents. They can form complexes containing a wide variety of transition metal ions (Cu, Zn, Mn, Pt etc.) and commonly used as chelating ligands. This chelating capability allows them to be used as antidotes against metal poisoning or in waste water treatment of heavy metals. Metal complexes with dithioligands, as dithiocarbamates, dithiophosphates, as well as thiol derivatives have shown relevant antitumor, antibacterial, antifungal and against cancer activities.

A series of indoline dithiocarbamate complexes with different metals (Co, Mn, Cu, Zn) were synthesized as shown in scheme 1. Dithiocarbamates were prepared using indoline and carbon disulfide in the presence of alkali. Then, salt of the corresponding metal was added to a water solution of sodium indoline-1-carbodithioate to produce complexes.



This protocol shows quiet good yields of resulting metal complexes (44 - 88 %). Structure of sodium indoline-1-carbodithioate was confirmed by ¹H and ¹³C NMR spectroscopic method and content of the corresponding metals in the complexes was determined by atomic adsorption spectrometry. Analysis of spectrometric data agree with the proposed structures of indoline dithiocarbamate metal complexes.