

## CONCLUSIONS

In this study, new Schiff bases of 5-phenyl-1,3,4-thiadiazol-2-amine were synthesized. IR, MASS, NMR and elemental analysis data were used to characterize synthesized compounds. The antimicrobial activities of the target compounds were less than the reference compounds.

## REFERENCES

1. Pandey, A.; Dewangan, D.; Verma, S.; Mishra, A.; Dubey, R.D. Synthesis of Schiff bases of 2-amino-5-aryl-1,3,4-thiadiazole and its analgesic, anti-inflammatory, antibacterial and anti-tubercular activity. *International Journal of ChemTech Research*, **2011**, 3(1), 178-184.
2. Silva, C.M.; Silva, D.L.; Modolo, L.V.; Alves, R.B.; Resende, M.A.; Martins, C.V.B.; Fatima, A. Schiff bases: A short review of their antimicrobial activities. *Journal of Advanced Research*, **2011**, 2, 1-8.
3. Miniyar, P.B.; Mahajan, A.A.; Mokale, S.N.; Shah, M.U.; Kumar, A.S.; Chaturbhuj, G.U. Triazole Hybrids as New Type of Anti-fungal Agents. *Arabian Journal of Chemistry*, **2013**.
4. Wayne, PA. Clinical and Laboratory Standards Institute, Reference Method for Broth Dilution Antifungal Susceptibility Testing of Yeasts, CLSI Document M27-A3, **2008**.
5. Wayne, PA. Clinical and Laboratory Standards Institute, Methods for Dilution Antimicrobial Susceptibility Testing, 17th Informational Supplement, CLSI Document M100-S17, **2007**.

## P-187: SYNTHESIS AND ANTIMYCOBACTERIAL ACTIVITY OF CO(III) COMPLEXES OF N-BENZOYL-4,6-DIOXO-HEXAHYDROPYRROLO[3,4-C]PYRROLE-2(1H)-CARBOTHIOAMIDE DERIVATIVES

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## INTRODUCTION

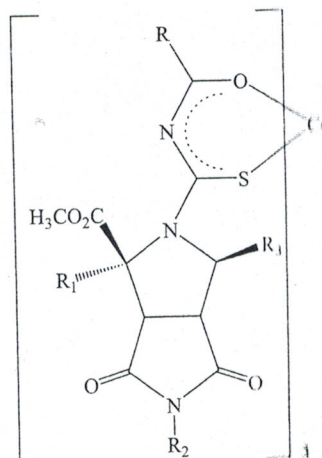
Cobalt complexes, containing monobasic bidentate (O, S) ligands, play an important role in drug research studies and it has been reported that some of Co(III) complexes show antimycobacterial, antimicrobial, antiviral and other biological activities [1]. Likewise, *N*-aryl/acyl thiourea derivatives have been intensively studied in many chemistry disciplines due to their significant complexation and biological properties [2]. One of the other important classes of drug research studies is heterocyclic compounds containing nitrogen atom as pyrrolidine and its derivatives [3].

## MATERIALS AND METHODS

The *N*-benzoyl-4,6-dioxo-hexahydropyrrolo[3,4-c]pyrrole-2(1H)-carbothioamide derivative ligands were synthesized according to literature method [4]. Co(III) complexes were synthesized from reaction of these ligands with Co(Ac)<sub>2</sub>·4H<sub>2</sub>O dissolved in methanol. Structure of the Co(III) complexes were characterized by various analytical methods. Antimycobacterial activity studies of the Co(III) complexes were performed against *M. tuberculosis H37Rv* strain by using Microplate Alamar Blue assay.

## RESULTS AND DISCUSSION

In our previous studies, we reported some novel aminocarbo-*N*-thiol pyrrolidine derivatives and their complexes with transitional metals such as Cu(II) and Pd(II) [4]. In this study, synthesized Co(III) complexes of *N*-benzoyl-4,6-dioxo-hexahydropyrrolo[3,4-c]pyrrole-2(1H)-carbothioamide derivatives, having pyrrolidine and pyrrolidinedione rings as monobasic bidentate ligands, were characterized by various analytical methods such as IR, UV-vis, magnetic susceptibility measurements.



According to result of the antimycobacterial studies, in vitro, which were carried out against *tuberculosis H37Rv* strain by using Microplate Alamar Blue assay, the prepared Co(III) complexes showed antimycobacterial activity with a range of MIC - 125 µg/mL.

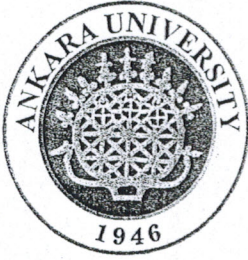
## CONCLUSIONS

Novel Co(III) complexes of *N*-benzoyl-4,6-dioxo-hexahydropyrrolo[3,4-c]pyrrole-2(1H)-carbothioamide derivatives, having pyrrolidine and pyrrolidinedione rings synthesized and the Co(III) complexes showed moderate antimycobacterial activity against *tuberculosis H37Rv* strain.

## REFERENCES

1. a) Saeed, A.; Flörke, U.; Erbenc, M. *Journal of Chemistry* **2014**, 35(3), 318-355. b) Chandra, S.





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