

Study of antibacterial activity of some complexes of Ni and Co with 14- membered tetraaza-macrocylicligands using one pot template synthesis.

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ABSTRACT: Some complexes of Ni and Co with 14-membered tetraaza-macrocylicligands using one pot template synthesis are taken to know its antibacterial activity. They have been tested against bacteria E.coli and S.aureus. Complexes of Co is most active and complexes of Ni is least active against bacteria E.coli and S.aures.

Key Words : MIC (Maximum Inhibition Constant), 14- membered tetraaza-macrocylicligands, L² (Ligand), Streptomycin – Standard drug against bacteria.

I. INTRODUCTION

Bacteria E.oli and S.aureus are treated against the Ni and Co with 14-membered tetraaza-macrocylicligands. They show strong inhibition against bacteria which were being supported by MIC values³⁻⁴. They show different types of elevated shapes against different bacteria.

II. EXPERIMENTAL

Following Ni and Co with 14- membered tetraaza-macrocylicligands are being used as antibacterial agents⁵ against bacteria E.coli and S.aureus are formed.

1. $[\text{Ni L}^2(\text{H}_2\text{O})_2](\text{Ac})_2$
 2. $[\text{Co L}^2(\text{H}_2\text{O})_2](\text{Ac})_2$
- Where L² is R=C₆H₅, R¹= CH₃

Above mentioned complexes, each of volume 20µL in different discs against bacteria were tested.

III. RESULTS AND DISCUSSION

Complexes of Ni and Co with 14- membered tetraaza-macrocylicligands were screened against E.coli and S.aureus⁶.

E.coli and S.aureus species are studied. The inhibitory concentration (x 10⁻³ mol) values of complexes of Ni and Co are given in the table -1. After inoculation for 96hrs, the inhibition zone formed around each filter paper were measured at room temperature.

Table - 1

(Antibacterial Activity)

Complexes	E.coli	S.aures
	100ppm	100ppm
1. $[\text{Ni L}^2(\text{H}_2\text{O})_2](\text{Ac})_2$	++	++
2. $[\text{Co L}^2(\text{H}_2\text{O})_2](\text{Ac})_2$	+++	+++
3. Streptomycin	++++	++++

SM = Streptomycin (Standard Drug); Inhibition diameter in in mm; (-) Not effected or nil; (++) 5-12mm ;(+++) 20-24mm ;(++++) 24-30mm.

IV. CONCLUSION

Complexes of Ni and Co with 14 - membered tetraaza-macrocyclic ligands show antibacterial activities⁶ which show different activity against different bacteria. Above complexes treated against bacteria and they are closer to activity of the standard drug Streptomycin against the E.coli and S. aureus. Complexes of Co is the most active while that of Ni is least active against bacteria E.coli and S.aureus.

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