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Study of biological activity of some complexes of Pd(II) and Ni(II) with 1 – substituted phenyltetrazoline – 5 – thione in acidic medium

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Abstract : *Some complexes of Pd(II) , Ni(II) , Hg(II) ,Cu(II) and Pb(II) with 1 – substituted phenyltetrazoline – 5 – thione in acidic medium are taken to know its biological activity in acidic medium have been tested against bacteria E.coli and S.aureus.*

Key Words:*Pd(II) , 1-subsyituted phenyltetrazoline – thione ,1-p-EPT5TH(1-para-ethoxyphenyltetrazolinne-5-thione) , P^H , MIC (Maximum Inhibition Constant) , SM(Streptomycin – Standard drug against bacteria)*

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I. Introduction

Complexes of Pd(II) and Ni(II) with 1-substituted phenyltetrazoline – 5-thione[1] are very important against bacteria E.oli and S.aureus. They show strong inhibition against bacteria which were being supported by MIC values[2] . They show different types of elevated shapes[3] against different bacteria.

II. Experimental

Following Pd(II) complexes[4] and Ni(II) complexes[5]with 1-substituted phenyltetrazoline -5-thione are being used as antibacterial agents[6] formed at P^H=1-2 .

1. $[Pd(1\text{-}p\text{-}EPT5TH)_2Cl_2] .2H_2O$
2. $[Ni(1\text{-}p\text{-}EPT5TH)_2Cl_2] .2H_2O$

20µL of each above mentioned Pd(II) and Ni(II) complexes in different discs against bacterial test as antibiotic was taken.

III. Results and Discussion

Complexes of Pd(II) at P^H=1-2 with 1-substituted phenyltetrazoline-5-thione were screened against E.coli and S.aureus[7] .

E.coli and S.aureus species are studied at 25ppm and 50ppm respectively for about about 96hrs. inhibition[5]. The inhibition zone[8] formed around each filter paper were measured after inoculation for 96hrs.at room temperature. The result shown in the Table -1.

Table -- 1
(Antibacterial Activity)

Complexes	E.coli	E.coli	S.aures	S.aures
	25ppm	50ppm	25ppm	50ppm
$[Pd(1\text{-}p\text{-}EPT5TH)_2Cl_2] .2H_2O$	+++	++++	++	++++
$[Ni(1\text{-}p\text{-}EPT5TH)_2Cl_2] .2H_2O$	++	++++	-	++++
SM	+++	++++	+++	++++

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

IV. Conclusion

The antibacterial activities[9] for Pd(II) and Ni(II) complexes increases with increase in concentration. At higher concentration the activity of both the complexes are very much similar to the standard drug Streptomycin[10] against the E.coli and S.aureus .

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