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Antifungal Studies Of Different Complexes Of Pd(Ii) And Th(Iv) With 1-Para And 1-Ortho – Substituted Tetrazoline-5-Thione Ligands In Acidic Medium

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Abstract-*Some Pd(II) and Th(with 1-para and 1-ortho substituted tetrazoline -5-thione at P^H <7have used as antifungal agents.*

Antifungal activities are evaluated against Aspergillus niger (An)and Fusarium heterosporium (Fh) with Pd and Th complexes .

(1a)	$[Pd(1\text{-o-cl-PT5TH})_2Cl_2]H_2O$	P^H range=5-6
(1b)	$[Th(1\text{-o-cl-PT5TH})_2Cl_2(H_2O)_2]$	P^H range=5-6
(1c)	$[Pd(1\text{-p-cl-PT5TH})_2Cl_2]4H_2O$	P^H range=1-2
(1d)	$[Th\ (1\text{-p-cl-PT5TH})_2Cl_4]$	P^H range=2-3

$[Pd(1\text{-p-cl-PT5TH})_2Cl_2]4H_2O$ and $[Th\ (1\text{-p-cl-PT5TH})_2Cl_4]$ show MIC against An(ppm)80 to 91.3% complexes while $[Pd(1\text{-o-cl-PT5TH})_2Cl_2]H_2O$ and $[Th(1\text{-o-cl-PT5TH})2Cl_2(H_2O)_2]$ show MIC against Fh(ppm) 60%

Key words:- *Pd(II), Th(IV) ,1-ortho,1-para,1-substituted tetrazoline-5-thione,antifungal activity,PT5TH(phenyltetrazoline-5-thione), MIC(maximum inhibition concentration).*

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I. Introduction

Complexes of Pd(II) and Th(IV) with 1-substitutedtetrazoline-5-thione[1] are very important against **An** and **Fh** . They show strong inhibition against fungi which were being supported by MIC values.

II. Experimental

20microlitre of each four(1a to 1d) complexes[2] in different disc against **An** and **Fh** were taken and potato dextrose agar(PDA) medium was used.

The antifungal activities were measured on cup plate methods reported in literature[3]

Results and discussion:- Complexes of Pd(II) and Th(IV) at different P^H with 1-substituted phenyltetrazoline-5-thione were screened for their antifungal activities against A.niger species at 1000(ppm) ,100(ppm) and 10(ppm) concentration for about 96hrsinhibition[4]. The solvent used was DMSO.The inhibition zone formed around each filter paper were measured after inoculation for 96hrs.at room temperature. $[Pd(1\text{-p-cl-PT5TH})_2Cl_2]4H_2O$ and$[Th\ (1\text{-p-cl-PT5TH})_2Cl_4]$

Showed 80 to91.3% activities against **An** while $[Pd(1\text{-o-cl-PT5TH})_2Cl_2]H_2O$ and $[Th(1\text{-o-cl-PT5TH})_2Cl_2(H_2O)_2]$ showed 60% activities against **Fh**.

III. TABLE- Antifugal activity

Sl.no	complexes	Fungicital Activity av.(%)inhibition						
		An(ppm)				Fh(ppm)		
		1000	100	10		1000	100	10
1	$[Pd(1\text{-o-cl-PT5TH})_2Cl_2]H_2O$	91.3	74.2	49.2		-	-	-
2	$[Th(1\text{-o-cl-PT5TH})_2Cl_2(H_2O)_2]$	80.0	72.2	49.1		-	-	-
3	$[Pd(1\text{-p-cl-PT5TH})_2Cl_2]4H_2O$	-	-	-		60.0	54.0	52.3
4	$[Th\ (1\text{-p-cl-PT5TH})_2Cl_4]$	-	-	-		59.3	53.2	49.2

IV. Conclusion

Para substituted complexes of Pd and Th are more effective against fungus Aspergillus niger(An) while ortho substituted complexes of Pd and Th are comparatively less effective.These above mention complexes of Pd and Th are very much effective not only to the An and Fh fungi but they are effective to other

fungi also.These complexes are effective more in acidic medium and their effects decreases in neutral and basic medium.We can use this experimental idea to resolve the problems due to fungal activity.

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