



Ain Shams University  
Faculty of Science  
Chemistry Department



**Novel study of some drugs and their complexes with certain  
transition metals “synthesis, characterization and biological  
activity”**

**Thesis submitted for the degree of PhD  
In  
Inorganic chemistry**

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To

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### **A Thesis Title**

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metals “synthesis, characterization and biological activity”**

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# *Dedication*

To my first tutor ever, to my Mom, my inspiration  
and my continuous support

To my biggest support system ever, my Dad

To my husband and my beloved sons who are always  
supports me

To my Sister who is always a guide and a support

To my colleagues who witnessed the journey, and  
without whom I would not have been able to finish  
the work.

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***Hoda Ahmed Elsayy***



## Abstract

**Candidate Name:** Hoda Ahmed Mohamed Elsayy

**Title of Thesis:** Novel study of some drugs and their complexes with certain transition metals “synthesis, characterization and biological activity”

**Degree: (Ph.D):** The Ph.D of Science in Inorganic Chemistry, Faculty of Science, Ain Shams University, 2017.

Two novel Schiff bases of (trans-4-[(2-(2-hydroxybenzimidino)-3,5-dibromobenzyl)amino]cyclohexanol) ( $H_2L^1$ ) and (trans-4-[(2-(2-quinolinoimino)-3,5-dibromobenzyl)amino]cyclohexanol) ( $HL^2$ ) with their complexes with Cr(III), Mn(II), Fe(III), Co(II), Ni(II), Cu(II), Zn(II), Cd(II), La(III), Er(III) and Yb(III) were synthesized and characterized by using many analytical techniques including elemental analyses, mass spectroscopy, IR,  $^1H$  NMR, magnetic moment, molar conductance and thermal analyses. The prepared complexes were found to have octahedral geometry. The biological activity (antimicrobial and anticancer activities) of the ligands and their complexes were also screened.

**Key Words:** Schiff base complexes, Elemental analysis, IR,  $^1H$  NMR, Thermal analyses, mass spectroscopy, and Biological activity.

## Table of Contents

1. Chapter I: Literature survey .....	1
1.1 Metal ions in our life .....	1
1.2 Metal complexes in the biological system .....	2
1.3 Coordination chemistry of the metal complexes.....	3
1.3.1 Application of some of metal complexes.....	4
1.4 Literature survey on Schiff bases .....	8
1.5 Synthesis of Schiff bases.....	9
1.6 Schiff base metal complexes .....	9
1.7 Coordination of the Schiff base to the transition metal ions .....	10
1.7.1 Applications of Schiff base complexes.....	11
1.7.2 Catalysis.....	11
1.7.3 Dyes .....	11
1.7.4 Plant growth regulator.....	12
1.7.5 Medical application.....	12
1.7.6 Biological activity .....	12
1.7.6.1 Antibacterial activity .....	13
1.7.6.2 Antifungal activity.....	13
1.7.6.3 Antiviral activity.....	14
1.7.6.4 Antimalarial activity.....	14
1.7.6.5 Anticancer activity.....	15
1.7.7 Applications in modern Sciences.....	15

1.7.8	Application in synthesis and chemical analysis.....	16
1.7.9	Schiff bases as antioxidant.....	17
1.7.10	Using of Schiff bases in aldol reaction .....	19
1.8	Ambroxol Drug .....	20
2	Chapter II: Experimental Work .....	23
2.1	Materials and reagents.....	23
2.2	Solutions.....	23
2.2.1	Solutions of Schiff base ligand ( $H_2L^1$ and $HL^2$ ) and their metal complexes .....	23
2.2.2	Solution for measuring conductivity.....	24
2.2.3	Solution of anticancer study.....	24
2.3	Instrument.....	25
2.4	Procedures .....	26
2.4.1	Absorption spectra of the Schiff base ligands and their metal complexes .....	26
2.5	Synthesis of the Schiff base ( $H_2L^1$ and $HL^2$ ) ligands.....	26
2.6	Synthesis of metal complexes .....	28
2.7	Determination of the metal content of the complexes.....	28
2.8	Biological activity .....	28
2.8.1	Antimicrobial activity .....	28
2.9	Cytotoxic activity .....	30
2.9.1	Components under study.....	30
2.9.2	Human tumor cell lines.....	30

2.9.3	Chemicals.....	30
2.9.4	Buffers.....	32
2.9.5	Cells and culture conditions.....	32
2.9.6	Sulphorhodamine-B (SRB) assay of cytotoxic activity .....	34
3	CHAPTER III: RESULTS AND DISCUSSION.....	36
3.1	Characterization of the Schiff base $H_2L^1$ ligand .....	36
3.2	Characterization of metal complexes of $H_2L^1$ ligand.....	38
3.2.1	Elemental analyses of complexes .....	38
3.2.2	Molar conductivity measurements.....	38
3.2.3	Spectral studies .....	39
3.2.3.1	IR spectral studies.....	39
3.2.3.2	$^1H$ NMR spectral studies .....	47
3.2.3.3	Mass spectral studies .....	48
3.2.3.4	Electronic spectral studies and magnetic susceptibility measurements.....	49
3.2.4	Thermal analysis studies (TG and DTG) .....	54
3.3	Structural interpretation.....	63
3.4	Biological activity .....	67
3.5	Anticancer activity .....	69
3.6	Conclusion.....	70
3.7	Characterization of the Schiff base ligand ( $HL^2$ ) .....	77
3.8	Characterization of metal complexes .....	79
3.8.1	Elemental analyses of complexes .....	79

3.8.2	Molar conductivity measurements.....	79
3.8.3	Spectral studies .....	80
3.8.3.1	IR spectral studies.....	80
3.8.3.2	<sup>1</sup> H NMR spectral studies .....	88
3.8.3.3	Mass spectral studies .....	89
3.8.3.4	Electronic spectral studies and magnetic susceptibility measurements.....	90
3.8.4	Thermal analysis studies (TG and DTG) .....	95
3.9	Structural interpretation.....	106
3.10	Biological activity.....	107
3.11	Anticancer activity.....	109
3.12	Conclusion .....	109
4	Summary .....	114
5	References .....	116

## List of Tables

Table 1: Different chemical reagents and their sources.....	23
Table 2: Analytical and physical data of Schiff base ( $H_2L^1$ ) ligand and its metal complexes. ....	43
Table 3: IR spectra ( $4000-400\text{ cm}^{-1}$ ) of $H_2L^1$ ligand and its metal complexes. ...	45
Table 4: $^1H$ NMR spectral data of the $H_2L^1$ ligand and its Zn(II) and Cd(II) complexes. ....	53
Table 5: Electronic absorption spectral data of metal complexes.....	54
Table 6: Thermoanalytical results (TG and DTG) of $H_2L^1$ ligand and its metal complexes. ....	65
Table 7: Biological activity of $H_2L^1$ ligand and its metal complexes.....	71
Table 8: Anticancer activity of $H_2L^1$ ligand and its metal complexes.....	72
Table 9: Analytical and physical data of $HL^2$ ligand and its metal complexes. .	84
Table 10: IR spectra ( $4000-400\text{ cm}^{-1}$ ) of $HL^2$ ligand and its metal complexes. .	86
Table 11: $^1H$ NMR spectral data of $HL^2$ ligand and its Zn(II) metal complex. ..	89
Table 12: Electronic absorption spectral data of metal complexes.....	94
Table 13: Thermoanalytical results (TG and DTG) of $HL^2$ ligand and its metal complexes. ....	104
Table 14: Biological activity of $HL^2$ ligand and its metal complexes .....	110

## List of Figures

Figure 1: Structure of heme center in the hemoglobin molecule.....	6
Figure 2: Iron sulfur protein cluster .....	7
Figure 3: Structure showing Co(II) metal ion in the coordination of cobalamine B <sub>12</sub> . ....	7
Figure 4: General scheme for the formation of Schiff base.....	9
Figure 5: Structre of Ambroxol drug. ....	22
Figure 6: Scheme of preparation of the H <sub>2</sub> L <sup>1</sup> ligand.....	27
Figure 7: Scheme of preparation of the HL <sup>2</sup> ligand.....	27
Figure 8: <sup>1</sup> H NMR spectrum of H <sub>2</sub> L <sup>1</sup> ligand.....	37
Figure 9: Mass spectrum of the H <sub>2</sub> L <sup>1</sup> ligand. ....	37
Figure 10: Structure of the H <sub>2</sub> L <sup>1</sup> ligand. ....	37
Figure 11: IR spectra of Schiff base ligand and its metal complexes [(a) H <sub>2</sub> L <sup>1</sup> , (b) Cr(III), (c) Mn(II), (d) Fe(III), (e) Co(II), (f) Ni(II), (g) Cu(II), (h) Zn(II), (i) Cd(II), (j) La(III), (k) Er(III) and (l) Yb(III) complexes]. ....	42
Figure 12: <sup>1</sup> H NMR spectra of (a) Zn(II) and (b) Cd(II) complexes.....	48
Figure 13: Mass spectrum of Ni(II) complex. ....	48
Figure 14: The UV-Vis absorption spectra of Schiff base ligand and its metal complexes [(a) H <sub>2</sub> L <sup>1</sup> , (b) Cr(III), (c) Mn(II), (d) Fe(III), (e) Co(II), (f) Ni(II), (g) Cu(II), (h) Zn(II), (i) Cd(II), (j) La(III), (k) Er(III) and (l) Yb(III) complexes].	52