Additional Table S1- S9. Additional Figure S1 and S6

Supplementary Table 1. Physical studies and analytical data of ligand, ML^1 & ML^1L^2

Compound	Colour	Molecular formula	Molecular weight	Elemental Analysis Found(cal.)%				Molar conductance Ω^{-1} cm^2 Mol^{-1}
				C	N	O	M	
Ligand	Light Yellow	$C_{18}H_{16}N_2O_2$	292.12	73.95	9.58	10.95	-	-
CuL^1	Dark Green	$C_{40}H_{40}N_4O_9Cu$	783.21	61.26	7.14	18.36	8.10	12
NiL^1	Light brown	$C_{40}H_{46}N_4O_{12}Ni$	832.25	57.64	6.72	23.03	7.04	13
CoL^1	Orange	$C_{40}H_{46}N_4O_{12}Co$	833.76	57.32	6.72	23.03	8.60	18
ZnL^1	Yellowish Brown	$C_{40}H_{42}N_4O_{10}Zn$	802.22	59.74	6.97	19.89	9.97	15
Cu L^1 L^2	Black	$C_{31}H_{30}N_3O_8Cu$	636.14	58.53	6.61	20.12	9.99	23
Ni L^1 L^2	Brown	$C_{31}H_{36}N_3O_{11}Ni$	684.17	54.33	6.13	25.68	8.56	19
Co L^1 L^2	Red brown	$C_{31}H_{36}N_3O_{11}Co$	685.17	54.31	6.13	25.67	7.07	11
Zn L^1 L^2	Dirty white	$C_{31}H_{32}N_3O_9Zn$	654.14	56.76	6.41	21.95	8.13	15

Supplementary Table 2. FT-IR absorption data of L, ML^1 & ML^1L^2

Compound	Lattic Water Molecule (cm^{-1})	ν(CH=N) (cm^{-1})	ν(-OCH_3) (cm^{-1})	ν(CH_2=CH_2) (cm^{-1})	8 Hydroxy quinoline		ν(M-N) (cm^{-1})
					ν(M-N) (cm^{-1})	ν(M-O) (cm^{-1})	
Ligand	-	1581	2833	2946	-	-	-
CuL^1	-	1577	2828	2927	-	-	473
NiL^1	3300	1576	2828	2927	-	-	473
CoL^1	3404	1577	2829	2895	-	-	495
ZnL^1	3394	1575	2829	2900	-	-	472
Cu L^1 L^2	3442	1580	2832	2944	495	519	483
Ni L^1 L^2	3435	1574	2829	2950	497	493	472
Co L^1 L^2	3381	1573	2828	2952	496	519	493
Zn L^1 L^2	-	1573	2828	2949	491	533	472

Supplementary Table 3. The Absorption spectrum and magnetic moment data analysis of the L, ML^1 & ML^1L^2

Compounds	Absorption(nm)	Band assignment	Geometry	μ_{eff} (BM)
Ligand(L)	270 369	INCT INCT	---	---
[Cu(L)]	270 302 439	INCT INCT $^2T_{2g} \rightarrow {}^2E_g$	Square planar	1.95
[Co(L)]	264 382 450 510	INCT INCT $^4T_{1g}(F) — {}^4T_{1g}(P)$ $^4T_{1g}(F) — {}^4A_{2g}(F)$	Tetrahedral	4.41
[Ni(L)]	260 342 381 470	INCT INCT $^3A_{2g}(F) — {}^3T_{1g}(P)$ $^3A_{2g}(F) -- {}^3T_{1g}(F)$	Square planar	3.81
[Zn(L)]	264 307 392	INCT INCT LMCT	Square planar	----
[Cu L^1 L^2]	261 317 440	INCT INCT $^2B_{1g} \rightarrow {}^2A_{1g}$	Distorted square planar	1.81
[Ni L^1 L^2]	263 393 457 511	INCT INCT $^4T_{1g}(F) — {}^4T_{1g}(P)$ $^4T_{1g}(F) — {}^4A_{2g}(F)$	Tetrahedral	4.83
[Co L^1 L^2]	268 309 392 550	INCT INCT $^3A_{2g}(F) — {}^3T_{1g}(P)$ $^3A_{2g}(F) -- {}^3T_{1g}(F)$	Square planar	3.05
[Zn L^1 L^2]	261 312 482	INCT INCT LMCT	Square planar	----

Supplementary Table 4. Mass spectral data of the L, ML^1 & ML^1L^2

Compound	Cal.Mass (m/z)	Obt. Mass(m/z)
Ligand	292.12	294.05
CuL^1	783.21	781.99
NiL^1	832.25	833.28
CoL^1	833.76	835.03
ZnL^1	802.22	802.84
Cu L^1 L^2	636.14	636.14
Ni L^1 L^2	684.17	678.48
Co L^1 L^2	685.17	683.43

Zn L^1 L^2	654.14	647.24

Supplementary Table 5. Crystalline size of the compounds

Compound	2θ of the maximum intensity peak (Degrees)	θ (Degrees)	Cos θ	β	Crystalline Size in (Å) $t = 0.9\lambda/\beta cos\theta$
Ligand	16.6283	8.31415	0.9894	0.001391	100.7488
CuL^1	16.723	8.3615	0.9893	0.00281	49.87665
NiL^1	16.723	8.3615	0.9893	0.001882	74.45885
CoL^1	16.4863	8.24315	0.9896	0.001796	78.0251
ZnL^1	11.8465	5.92325	0.9946	0.002163	64.44712
Cu L^1 L^2	16.84626	8.42313	0.9892	0.002159	64.92777
Ni L^1 L^2	16.94653	8.47326	0.9890	0.002938	47.72123
Co L^1 L^2	16.8964	8.4482	0.9891	0.004728	29.65052
Zn L^1 L^2	16.8964	8.4482	0.9890	0.003416	41.03534

Supplementary Table 6. Inhibition indices of Schiff base ligand, ML^1 and ML^1L^2 complexes against *E. coli, S. aureus,* and *Candida albicans*

Sample Marking	Sample Concentration (µg/ml)	Zone of inhibition in (mm)		Sample Concentration (µg/ml)	Zone of inhibition in (mm)
		S. aureus	***E. coli***		***Candida albicans***
Standard	Tetracyclin	13	12	Fluconazole	12
Ligand	100	NA	10	100	2
CuL^1		5	8		5
NiL^1		NA	7		4
CoL^1		7	9		8
ZnL^1		6	6		9
Cu L^1 L^2		12	12		10
Ni L^1 L^2		10	9		6
Co L^1 L^2		8	9		11
Zn L^1 L^2		7	5		8

Supplementary Table 7. Anti-Inflammatory activity of Schiff base ligand, CuL^1 $L^2$and CuL^1complexes

Compounds	Concentration (µg/ml)					IC_{50} (µg/ml)
	20	40	60	80	100	
	% of inhibition at 560 nm					
Standard	56.28	60.14	67.49	72.78	78.69	0.592
Ligand	32.23	45.86	49.62	66.91	71.42	53.58
CuL^1L^2	42.53	56.77	69.79	71	79.51	28.50
CuL^1	38.34	43.6	59.39	61.65	72.93	48.14

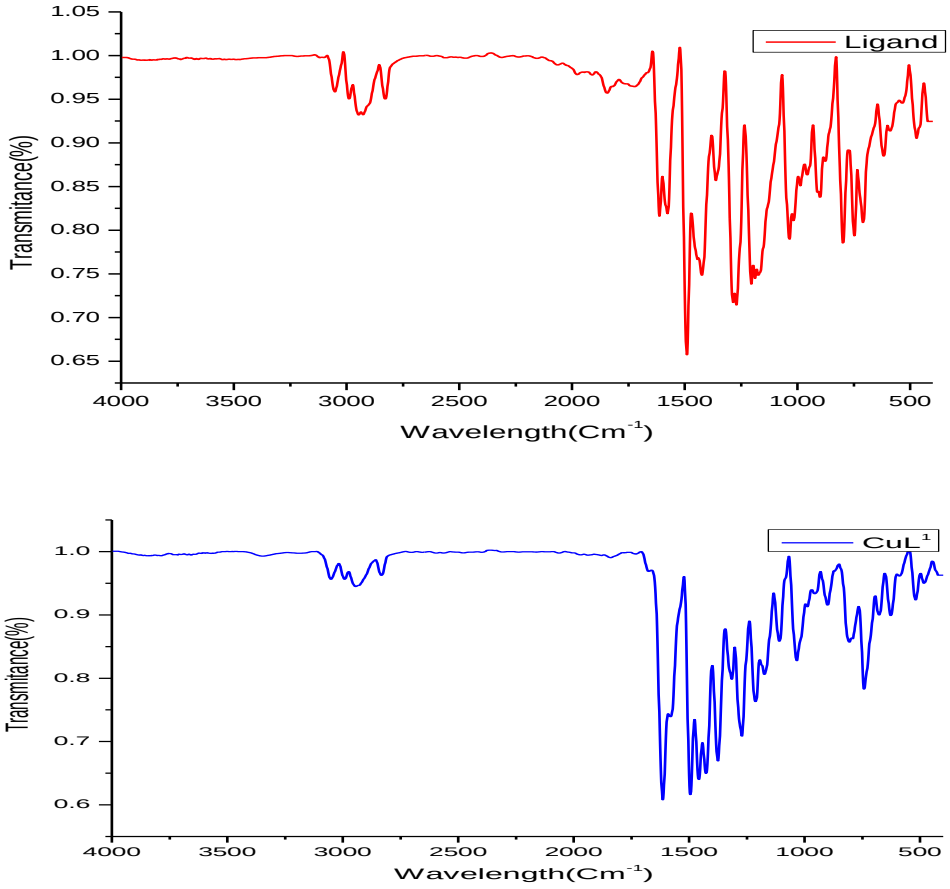
Supplementary Table 8. Anti-diabetic activity data of Schiff base ligand, CuL^1 $L^2$and CuL^1 complexes

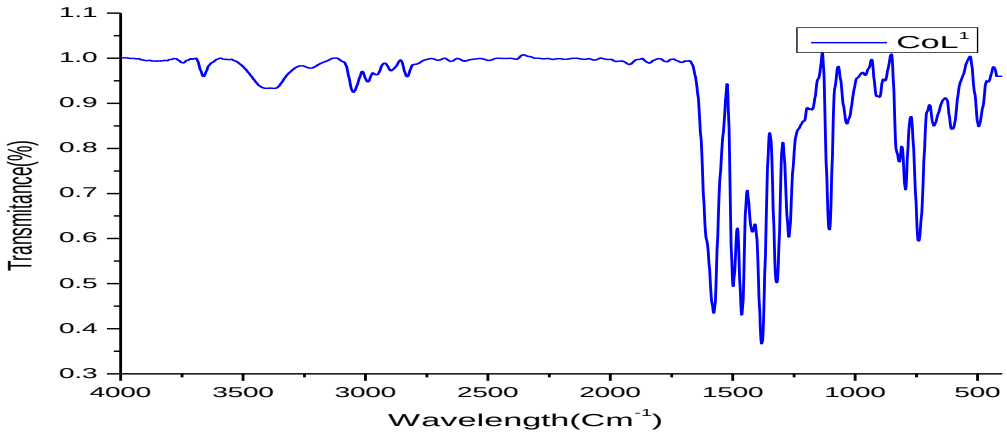
Compounds	Concentration (µg/ml)					IC_{50} (µg/ml)
	10	20	30	40	50	
	% of inhibition at 540 nm					
Ligand	**37.33**	**42.80**	**43.16**	**45.54**	**48.98**	**54.80**
CuL^1L^2	**47.08**	**65.51**	**68.25**	**71.34**	**72.88**	**3.86**
CuL^1	**53.62**	**61.59**	**62.66**	**63.85**	**66.34**	**11.91**

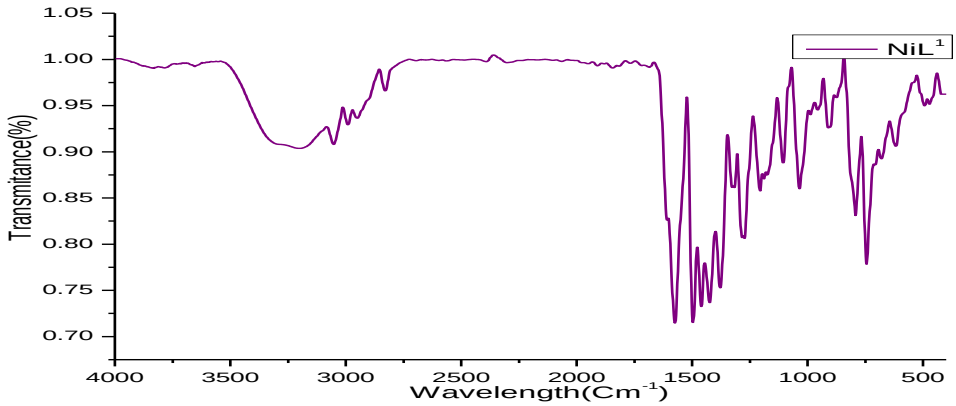
Supplementary Table 9. Anti-Cancer activity data of the Schiff base ligand, CuL^1 L^2 and CuL^1complexes

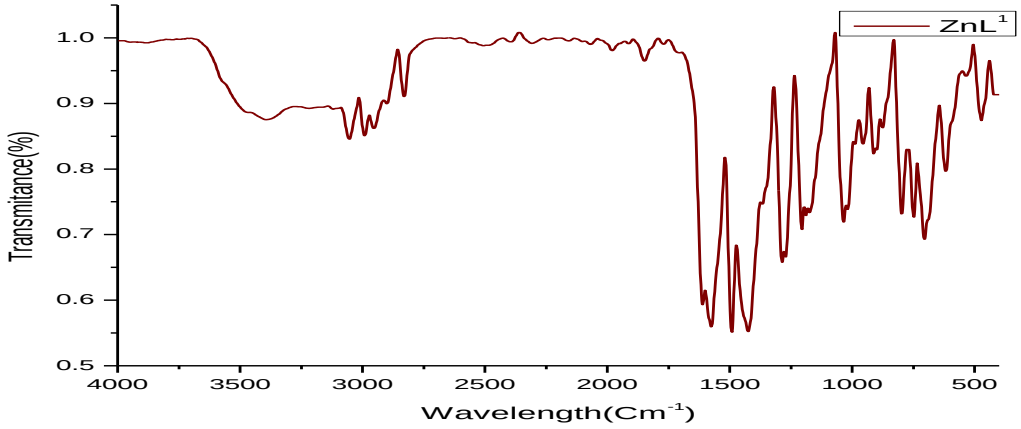
Ligand Concentration (µg / ml)	Ligand Cell Viability %	IC_{50} (µg / ml)	CuL^1L^2 Cell Viability %	IC_{50} (µg / ml)	CuL^1 Cell Viability %	IC_{50} (µg / ml)
3.125	97.8545888	32.63	89.91646778	24.92	97.09697344	30.55
6.25	90.40524434		74.46300716		87.3996294	
12.5	71.81168057		59.78520286		70.84620136	
25	46.72228844		37.58949881		48.98085238	
50	33.49225268		24.34367542		26.93020383	

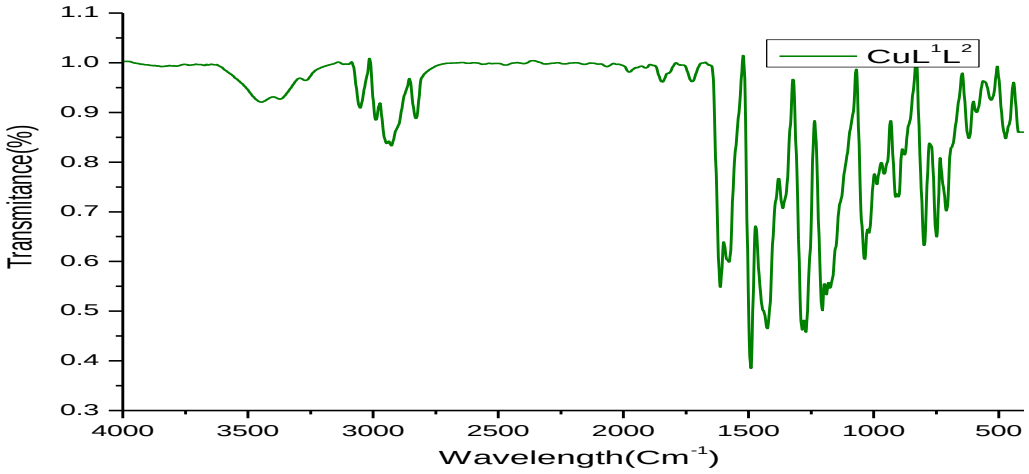
Supplementary Figure 1. FT-IR spectra of L, ML^1 & ML^1L^2

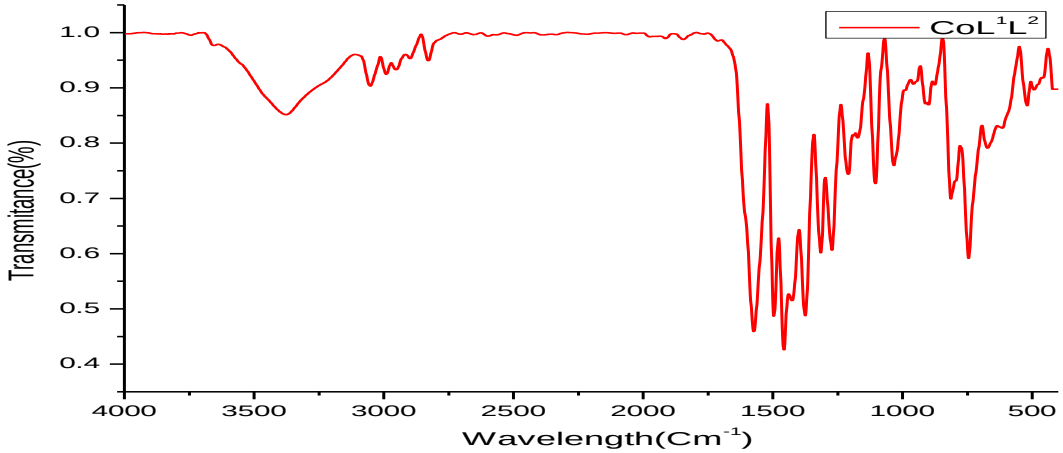



CoL¹
Transmitance(%)
Wavelength(Cm⁻¹)


NiL¹
Transmitance(%)
Wavelength(Cm⁻¹)


ZnL¹
Transmitance(%)
Wavelength(Cm⁻¹)


CuL¹L²
Transmitance(%)
Wavelength(Cm⁻¹)
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
4000
3500
3000
2500
2000
1500
1000
500


CoL¹L²
Transmitance(%)
Wavelength(Cm⁻¹)
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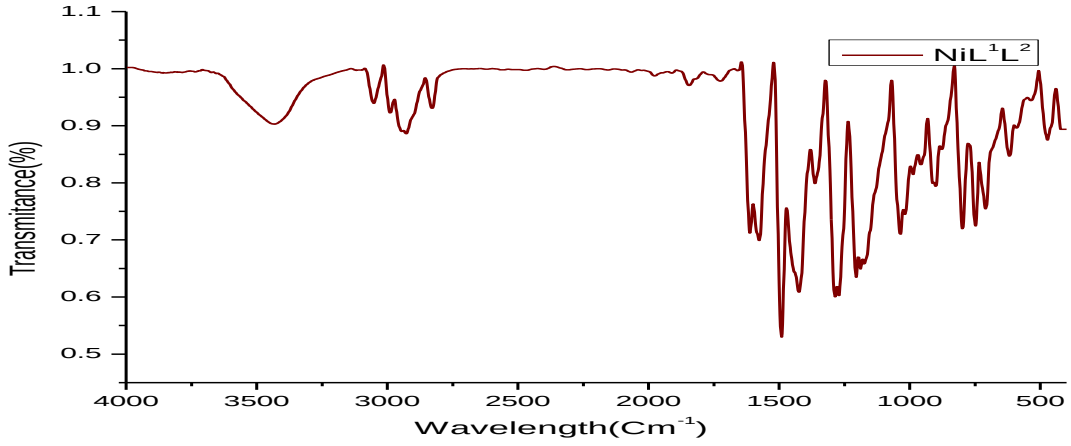
0.8
0.7
0.6
0.5
0.4
4000
3500
3000
2500
2000
1500
1000
500


NiL¹L²
Transmitance(%)
Wavelength(Cm⁻¹)
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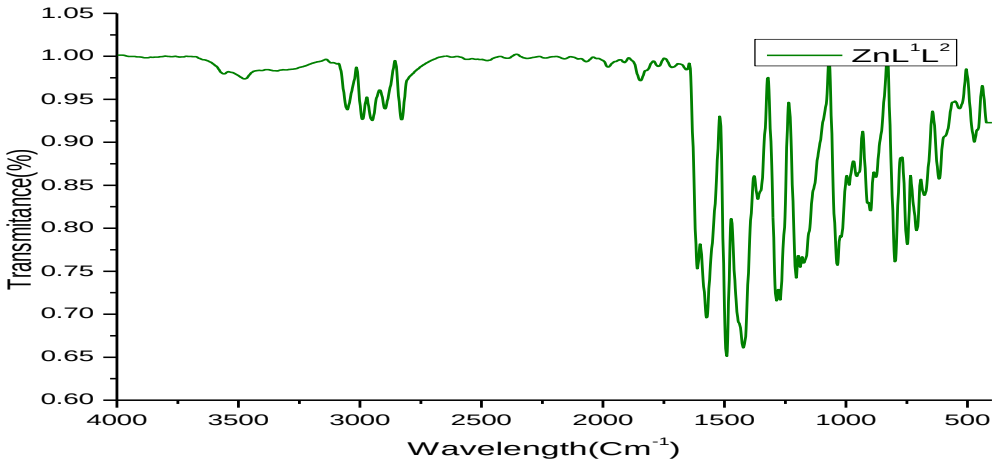
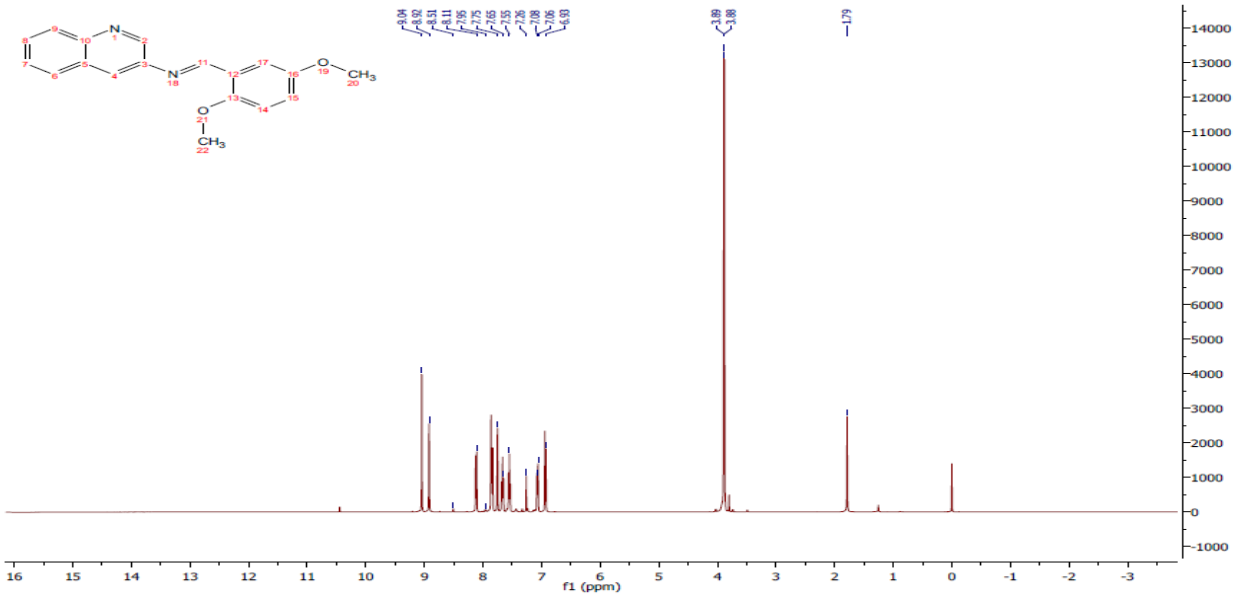
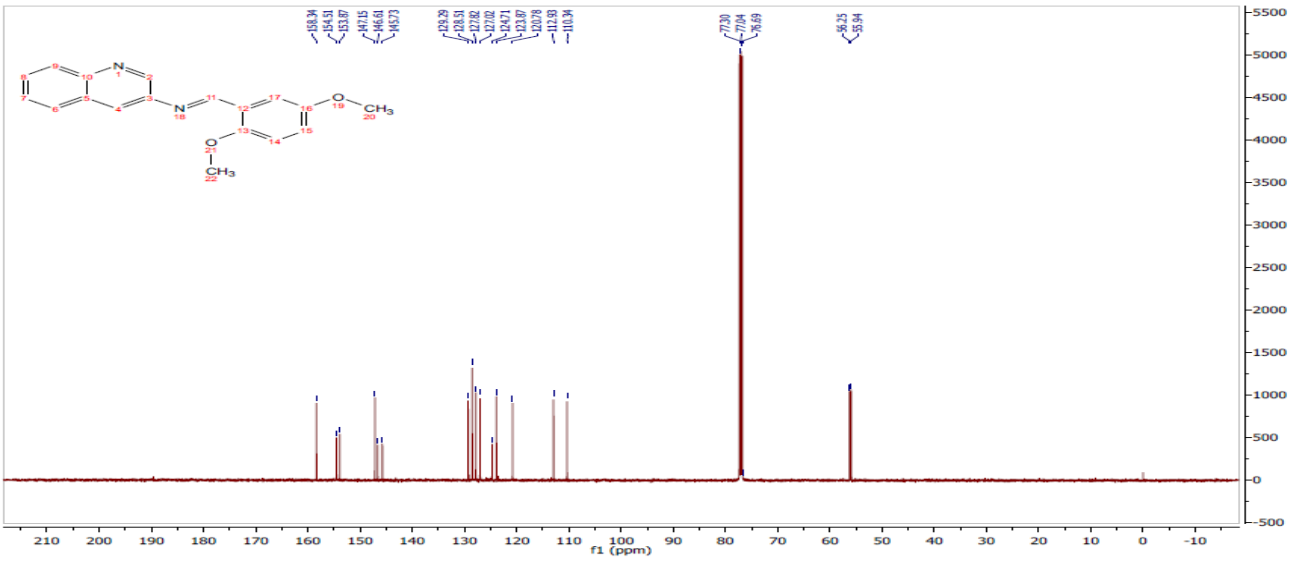
1.0
0.9
0.8
0.7
0.6
0.5
4000
3500
3000
2500
2000
1500
1000
500



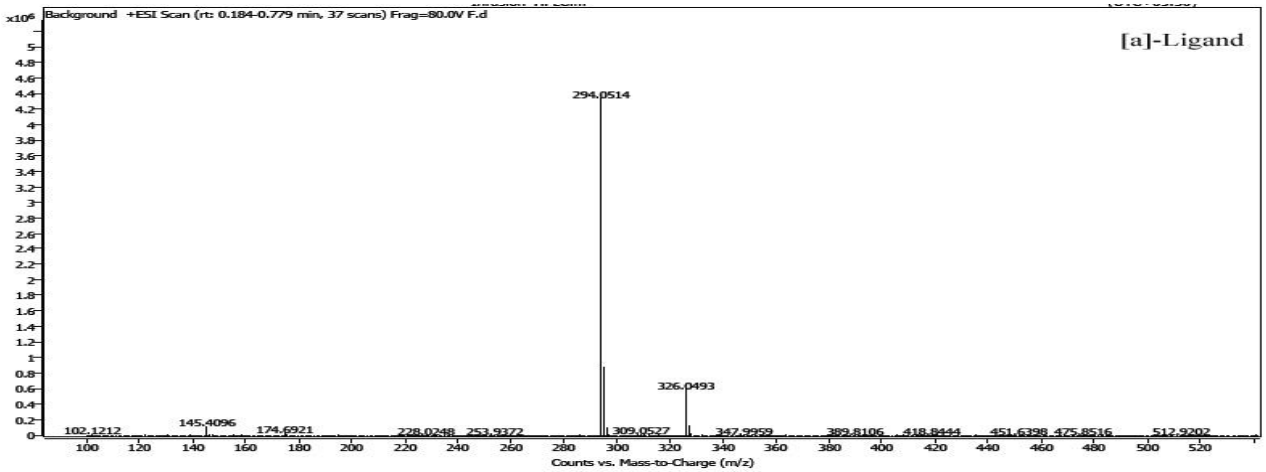
Supplementary Figure 2. ^{1}H NMR of Schiff base ligand (L)

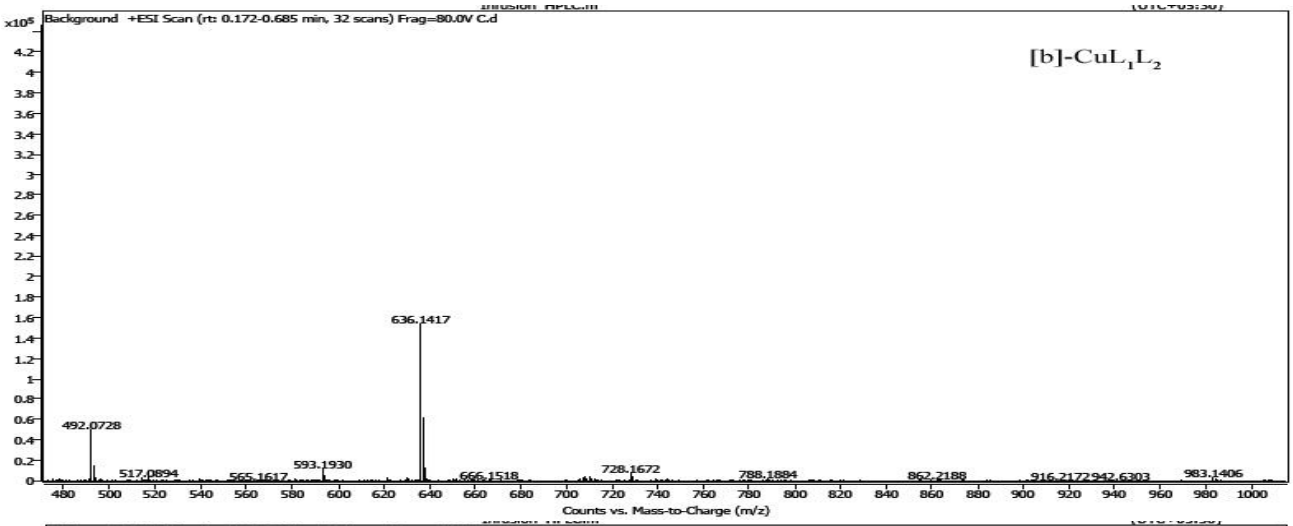


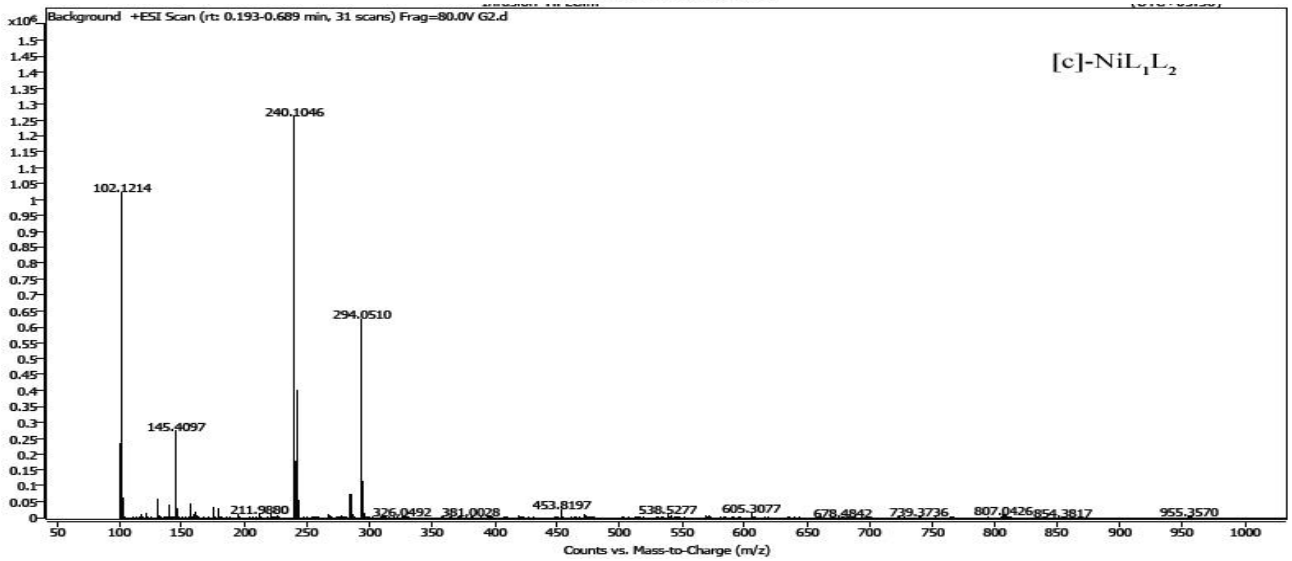
Supplementary Figure 3. ^{13}C NMR for Schiff base ligand(L)



Supplementary Figure 4. Mass spectra of L, ML^1 & ML^1L^2




Background +ESI Scan (rt: 0.172-0.685 min, 32 scans) Frag=80.0V C.d
[b]-CuL1L2
636.1417
492.0728
517.0894
565.1617
593.1930
666.1518
728.1672
788.1884
862.2188
916.2172
942.6303
983.1406
Counts vs. Mass-to-Charge (m/z)


Background +ESI Scan (rt: 0.193-0.689 min, 31 scans) Frag=80.0V G2.d
[c]-NiL1L2
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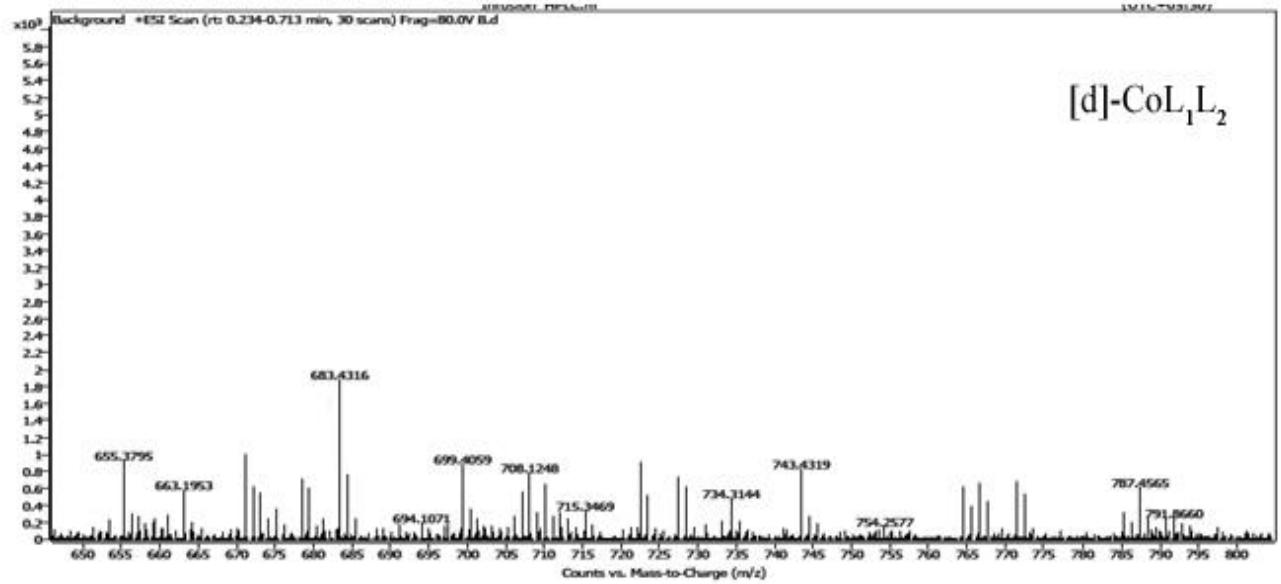
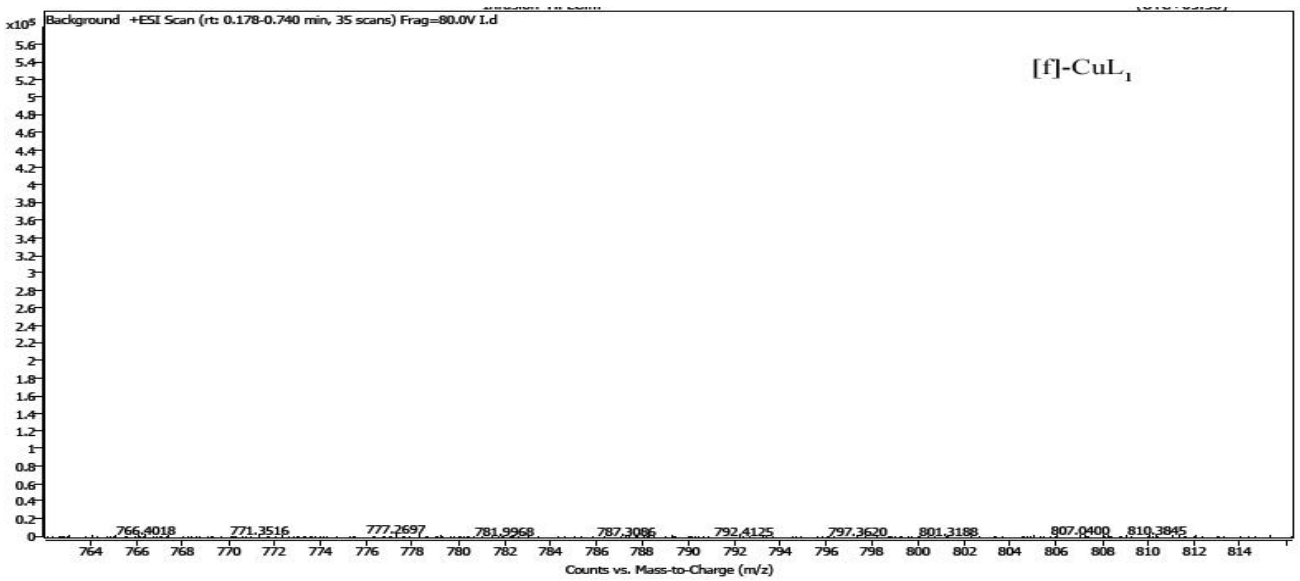
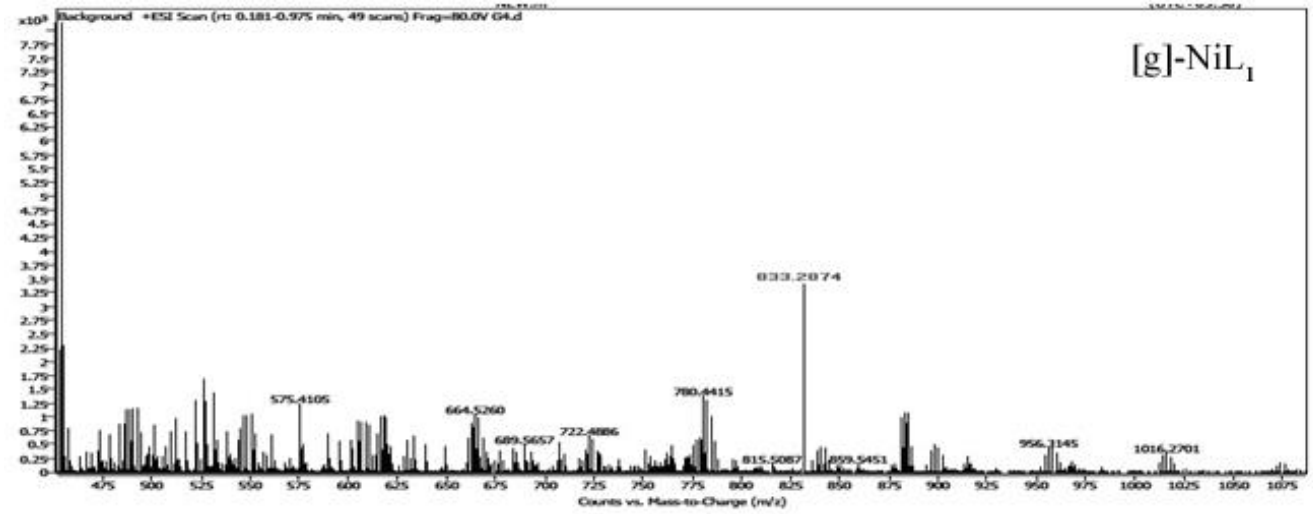
102.1214
294.0510
145.4097
211.9880
326.0492
381.0028
453.8197
538.5277
605.3077
678.4842
739.3736
807.0426
854.3817
955.3570
Counts vs. Mass-to-Charge (m/z)


Background +ESI Scan (rt: 0.234-0.713 min, 30 scans) Frag=80.0V B.d
[d]-CoL1L2
683.4316
655.3795
663.1953
699.4059
708.1248
694.1071
715.3469
734.3144
743.4319
754.2577
787.4565
791.8660
Counts vs. Mass-to-Charge (m/z)


Background +ESI Scan (rt: 0.178-0.740 min, 35 scans) Frag=80.0V I.d
[f]-CuL1
766.4018
771.3516
777.2697
781.9968
787.3086
792.4125
797.3620
801.3188
807.0400
810.3845
Counts vs. Mass-to-Charge (m/z)


Background +ESI Scan (rt: 0.181-0.975 min, 49 scans) Frag=80.0V G4.d
[g]-NiL1
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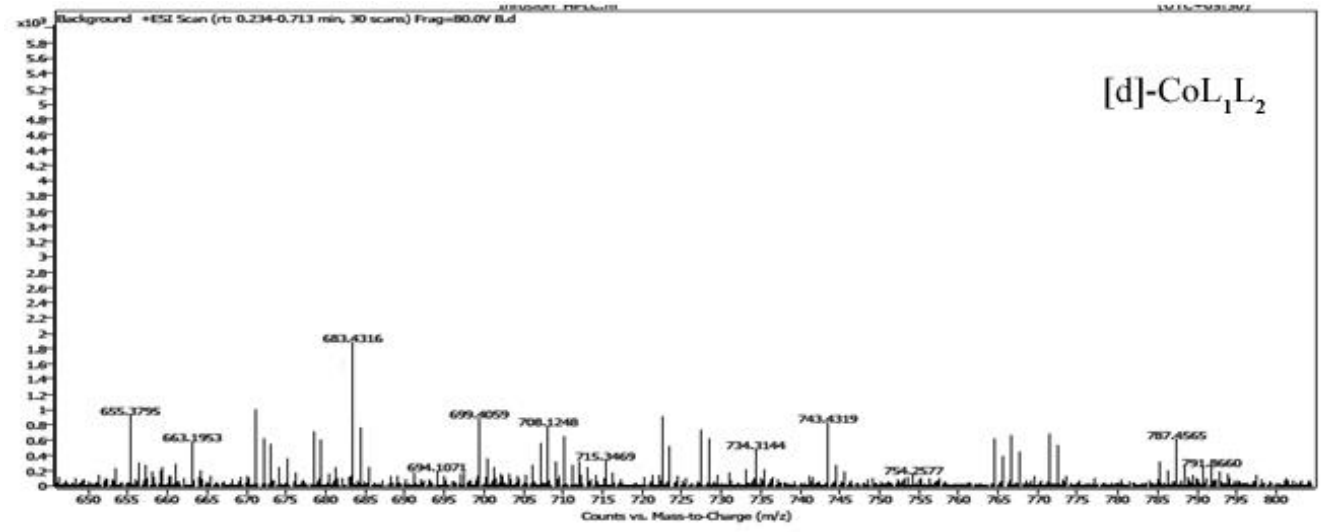
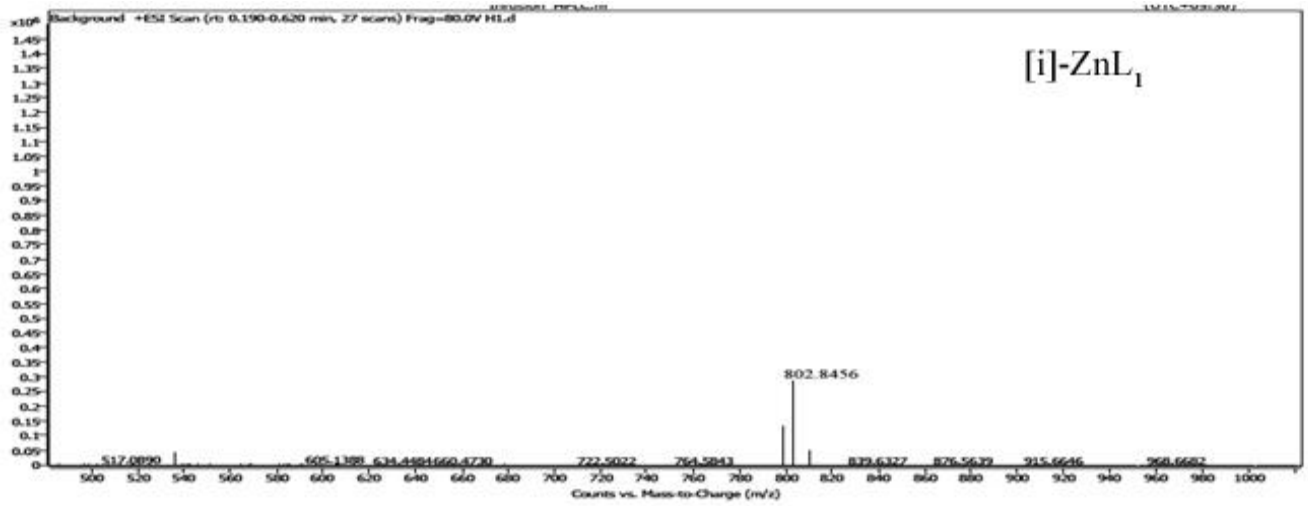
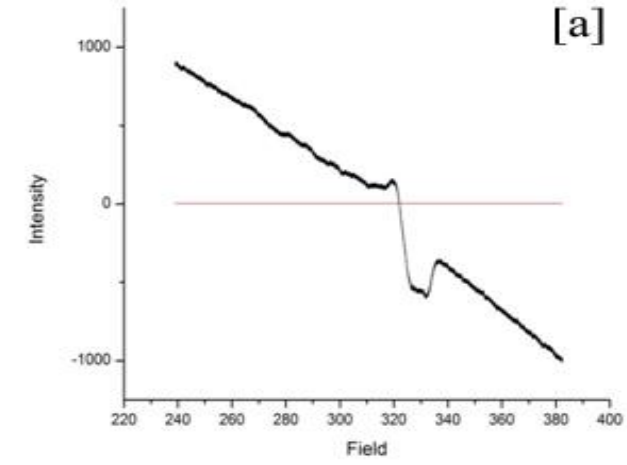
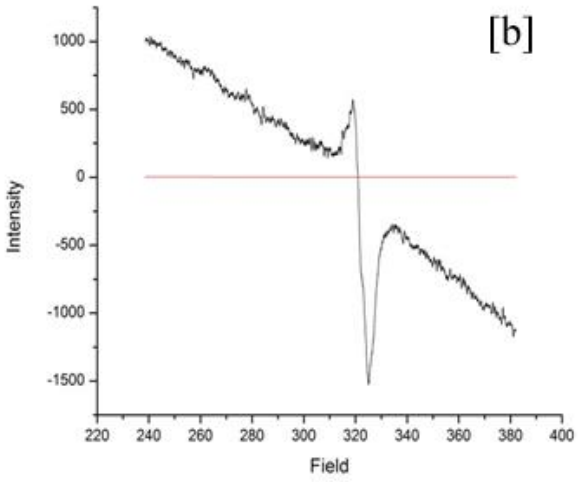
780.4415
575.4105
664.5260
689.5657
722.4886
815.5087
859.5451
956.7145
1016.2701
Counts vs. Mass-to-Charge (m/z)


Background +ESI Scan (rt: 0.234-0.713 min, 30 scans) Frag=80.0V B.d
[d]-CoL1L2
683.4316
655.3795
663.1953
699.4059
708.1248
715.3469
694.1071
734.3144
743.4319
754.2577
787.4565
791.8660
Counts vs. Mass-to-Charge (m/z)



Supplementary Figure 5. EPR spectra for CuL^1 and Cu L^1L^2 complexes





Supplementary Figure 6. XRD analysis of L, ML^1 & ML^1L^2