

**Table 4.** IR spectral bands (cm<sup>-1</sup>) of SalBzGH and its complexes and their assignments<sup>a</sup>.

Complexes	Hydrazide moiety		<i>n</i> (CN)	<i>n</i> <sub>sym</sub> (CO)	<i>n</i> (NN)	<i>n</i> (MO)
	Amide I	Amide II				
SalBzGH	1700	1565	1600	1275	965	
[Mn(SalBzGH-H) <sub>2</sub> ]	1680	1535	1580	1300	1000	380
<i>n</i> (NCO <sup>-</sup> )						
[VO(SalBzGH-2H)(H <sub>2</sub> O)]	1500	1330	1570	1290	980	400
[Co(SalBzGH-2H)(H <sub>2</sub> O) <sub>3</sub> ]	1550	1320	1570	1285	995	380
[Ni(SalBzGH-2H)(H <sub>2</sub> O) <sub>3</sub> ]	1545	1330	1575	1300	1000	385
[Cu(SalBzGH-2H)(H <sub>2</sub> O)]	1545	1300	1575	1280	995	380
[Zn(SalBzGH-2H)(H <sub>2</sub> O)]	1570	1335	1590	1290	1005	405
[Hg(SalBzGH-2H)(H <sub>2</sub> O)]	1550	1345	1570	1280	990	425
K <sub>2</sub> [Cd(SalBzGH-2H) <sub>2</sub> ]	1545	1310	1590	1280	990	405

<sup>a</sup>The spectra are recorded as nujol mull**Table 5.** <sup>1</sup>H NMR spectral data (*d*) of SalBzGH and its Zn(II) and Hg(II) complexes<sup>a</sup>.

Proton(s)	SalBzGH		[M(SalBzGH-2H)(H <sub>2</sub> O)]	
	(298 K)	(368 K)	Zn(II) (298 K)	Hg(II) (298 K)
-C <sub>6</sub> H <sub>4</sub> OH	11.45 <sup>s</sup> , 11.71 <sup>s</sup>	11.30 <sup>s</sup>	-	-
-N-NHCO-	10.05 <sup>s</sup> , 11.12 <sup>s</sup>	10.71 <sup>s</sup>	-	-
C <sub>6</sub> H <sub>5</sub> CONH-	8.66 <sup>t</sup> , 8.88 <sup>t</sup>	8.48 <sup>t</sup>	8.93 <sup>t</sup>	8.98 <sup>t</sup>
-NCH-	8.28 <sup>s</sup> , 8.42 <sup>s</sup>	8.43 <sup>s</sup>	8.64 <sup>s</sup>	8.57 <sup>s</sup>
-CH <sub>2</sub> -	4.05 <sup>d</sup> , 4.43 <sup>d</sup>	4.19 <sup>d</sup>	4.10 <sup>d</sup>	4.48 <sup>d</sup>
Ring protons	7.90 <sup>m</sup>	7.90 <sup>m</sup>	7.91 <sup>m</sup>	7.83 <sup>m</sup>
	7.52 <sup>m</sup>	7.52 <sup>d</sup>	7.55 <sup>m</sup>	7.52 <sup>m</sup>
	7.19 <sup>m</sup>	7.24 <sup>d</sup>	7.07 <sup>m</sup>	7.17 <sup>s</sup>
	6.95 <sup>s</sup>	6.95 <sup>s</sup>	6.91 <sup>s</sup>	6.98 <sup>s</sup>
	6.86 <sup>s</sup>	6.86 <sup>s</sup>	6.52 <sup>s</sup>	6.88 <sup>s</sup>

<sup>a</sup>The spectra are recorded in DMSO-*d*<sub>6</sub>  
*s* – singlet; *d* – doublet; *t* – triplet; *m* – multiplet**Table 6.** <sup>13</sup>C NMR spectral data (ppm) of SalBzGH and its Zn(II) and Hg(II) complexes<sup>a</sup>.

Carbon atoms	SalBzGH		[M(SalBzGH-2H)(H <sub>2</sub> O)]	
	298 K	368 K	Zn(II) (298 K)	Hg(II) (298 K)
-CONH-N=	168.8		173.59	175.17
C <sub>6</sub> H <sub>5</sub> CONH-	166.54, 165.51	166.59	166.50	166.53
-H <sub>2</sub> C-	42.26, 41.34	41.23	-	-
-NCH-	147.25	-	143.47	142.52
C(1)	131.27	130.68	131.11	131.40
C(2)	128.29	127.75	128.26	128.57
C(3)	127.31	126.78	126.99	127.31
C(4)	133.84	133.98	134.28, 133.33	134.28, 133.33
C(1')	126.45	-	-	-
C(2')	157.28, 156.35	156.72	154.57	156.47
C(3')	118.59, 116.32	115.34	114.94	113.21
C(4')	141.19	-	-	140.30
C(5')	120.06, 119.30	118.87	119.38	119.70
C(6')	129.38	128.56	-	128.89

<sup>a</sup>The spectra are recorded in DMSO-*d*<sub>6</sub>