**TERNARY COMPLEXES OF *cis*-(NH₃)₂PtCl₂ (*cis*-DDP) WITH
GUANOSINE (guo), CYTIDINE (cyd) AND THE AMINOACIDS
GLYCINE (gly), L-ALANINE (ala), L-2-AMINOBUTYRIC ACID (2-aba),
L-NORVALINE (nval) AND L-NORLEUCINE (nleu)**

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Pages 57-63. The first six tables were omitted. They are given below.

Table I: $^1\text{H-NMR}$ Chemical Shifts of the Compounds in D_2O (ppm)

Compounds	ρD	H_α	H_β	H_γ	$\alpha\text{-CH}$	$\beta\text{-CH}$	$\gamma\text{-CH}$	$\delta\text{-CH}$	$\varepsilon\text{-CH}$
$cis\text{-(NH}_3)_2\text{Pt(gly)NO}_3$	5.5				3.642(s)				
$cis\text{-(NH}_3)_2\text{Pt(ala)NO}_3$	5.5				3.778(q)	1.475(t)			
$cis\text{-(NH}_3)_2\text{Pt(2-aba)NO}_3$	5.5				3.649(t)	1.902(m)	1.093(t)		
$cis\text{-(NH}_3)_2\text{Pt(nval)NO}_3$	5.5				3.733(t)	1.865(m)	1.573(m)	1.003(t)	
$cis\text{-(NH}_3)_2\text{Pt(nleu)NO}_3$	5.5				3.704(t)	1.893(m)	1.588(m)	1.427(m)	0.968(t)
$cis\text{-(NH}_3)_2\text{Pt(guo)(gly)NO}_3$	5.6	8.604(s)			3.145(s)				
$cis\text{-(NH}_3)_2\text{Pt(guo)(ala)NO}_3$	5.6	8.573(s)			3.128(q)	1.311(d)			
$cis\text{-(NH}_3)_2\text{Pt(guo)(2-aba)NO}_3$	5.6	8.574(s)			2.999(s,br)	1.663(m)	0.818(t)		
$cis\text{-(NH}_3)_2\text{Pt(guo)(nval)NO}_3$	5.6	8.589(s)			3.036(t)	1.560(m)	1.156(m)	0.796(t)	
$cis\text{-(NH}_3)_2\text{Pt(guo)(nleu)NO}_3$	5.6	8.599(s)			3.025(s,br)	1.552(m)	1.035(m)	1.035(m)	0.757(t)
guo		7.987(s)							
$cis\text{-(NH}_3)_2\text{Pt(cyd)(gly)NO}_3$	5.5		7.966, 7.953, 7.937(t)		3.258(t)				
$cis\text{-(NH}_3)_2\text{Pt(cyd)(ala)NO}_3$	5.5		7.953, 7.944, 7.940, 7.931(dd)		3.378(q)	1.348(d)			
$cis\text{-(NH}_3)_2\text{Pt(cyd)(2-aba)NO}_3$	5.5		7.957, 7.948, 7.945, 7.936(dd)		3.314(t)	1.692(m)	0.909(t)		
$cis\text{-(NH}_3)_2\text{Pt(cyd)(nval)NO}_3$	5.5		7.965, 7.955, 7.953, 7.943(dd)		3.334(t)	1.637(m)	1.237(m)	0.876(t)	
$cis\text{-(NH}_3)_2\text{Pt(cyd)(nleu)NO}_3$	5.5		7.974, 7.967, 7.955, 7.948(dd)		3.327(t)	1.673(m)	1.250(m)	1.250(m)	0.842(t)
cyd	5.5		7.864(d)		6.073(d)				

Table II: ^{13}C -NMR Chemical Shifts of the Compounds in D_2O (ppm)

Compounds	C_2	C_4	C_5	C_6	C_8	$\text{C}_{1'}$	C_7	C_4	C_5	C_α	C_β	C_γ	C_δ	C_ϵ	C_θ
gly										44.32					175.28
ala										53.50	19.03				178.61
2-aba										58.73	26.52	11.37			177.65
nval										57.54	35.37	20.68	15.76		177.90
nleu										57.62	32.87	29.18	24.46	15.77	177.89
<i>cis</i> -[(NH_3) $_2$ Pt(gly)] NO_3										49.03					191.71
<i>cis</i> -[(NH_3) $_2$ Pt(ala)] NO_3										56.64	21.01				192.00
<i>cis</i> -[(NH_3) $_2$ Pt(2-aba)] NO_3										61.73	28.53	11.66			192.11
<i>cis</i> -[(NH_3) $_2$ Pt(nval)] NO_3										60.33	37.31	20.74	15.70		192.41
<i>cis</i> -[(NH_3) $_2$ Pt(nleu)] NO_3										60.51	34.90	29.39	24.48	15.88	187.67
<i>cis</i> -[(NH_3) $_2$ Pt(guo)] NO_3	157.40	153.50	117.44	159.72	142.83	91.64	72.78	88.35	63.80	51.22					178.22
<i>cis</i> -[(NH_3) $_2$ Pt(guo)(ala)] NO_3	157.42	153.51	117.36	159.72	142.82	91.63	72.72	88.31	63.74	59.15	22.42				181.53
<i>cis</i> -[(NH_3) $_2$ Pt(guo)(2-aba)] NO_3	157.48	153.57	117.21	159.78	142.78	91.52	72.72	88.37	63.78	64.94	29.75	11.66			180.46
<i>cis</i> -[(NH_3) $_2$ Pt(guo)(nval)] NO_3	157.50	153.60	118.85	159.77	142.88	91.56	72.86	88.44	63.82	63.57	38.67	20.97	15.68		180.73
<i>cis</i> -[(NH_3) $_2$ Pt(guo)(nleu)] NO_3	157.52	153.61	118.80	159.79	142.94	91.63	72.87	88.45	63.86	63.69	36.15	29.43	15.86	12.96	180.74
guo ^[20]	153.57	151.23	116.57	156.70	135.54	86.28	70.28	73.62	85.12	61.67					
<i>cis</i> -[(NH_3) $_2$ Pt(cyd)] NO_3	157.04	168.23	98.05	145.32	94.28	94.28	72.00	86.96	63.43	51.89					178.64
				144.99	93.94	93.94	76.80								178.22
<i>cis</i> -[(NH_3) $_2$ Pt(cyd)(ala)] NO_3	157.00	168.24	98.11	145.32	94.33	94.33	72.04	87.03	63.46	59.79	22.68				181.45
	156.88	168.13	98.04	145.06	93.90	93.90	71.98	86.85	86.92	59.53					
<i>cis</i> -[(NH_3) $_2$ Pt(cyd)(2-aba)] NO_3	157.01	168.22	98.16	145.38	94.37	94.37	72.10	87.11	63.48	65.55	29.99	11.76			180.22
	156.86	168.09		145.07	93.71	93.71	71.99	86.96		65.18	29.65	11.65			
<i>cis</i> -[(NH_3) $_2$ Pt(cyd)(nval)] NO_3	157.00	168.23	98.14	145.39	94.38	94.38	72.09	87.09	63.47	64.25	38.91	21.06	15.91		180.50
	156.87	168.09	98.02	145.07	93.80	93.80	71.99	86.96		63.95	38.85		15.86		
<i>cis</i> -[(NH_3) $_2$ Pt(cyd)(nleu)] NO_3	157.01	168.22	98.13	145.40	94.36	94.36	72.07	87.08	63.44	64.43	36.44	29.85	24.65	15.95	180.51
	156.80	168.08	98.02	145.08	93.82	93.82	71.98	86.96		64.10	36.36	29.78	24.59		
cyd	159.85	168.57	98.92	144.60	93.17	93.17	72.12	86.63	63.57						

Table III: Characteristic IR bands of the complexes (cm^{-1})

Compounds	$\nu(\text{C}=\text{O})_{\text{nucl}} + \nu(\text{COO})_{\text{amac}}$	$\delta\text{NH}(\text{NH}_2, \text{NH}_3)$	$\nu(\text{C}=\text{C}, \text{C}=\text{N})$	ring breathing	sugar conformation
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{guo})(\text{gly})/\text{NO}_3$	1695(s, br)	1625(s, br)	1585(s), 1495(m)	690(m)	822(m), 795(w)
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{guo})(\text{ala})/\text{NO}_3$	1714(s)	1634(s)	1585(s), 1505(m)	699(m)	825(m), 802(w)
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{guo})(2\text{-aba})/\text{NO}_3$	1696(s, br)	1634(s)	1588(s), 1498(m)	692(m)	825(m), 804(w)
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{guo})(\text{nval})/\text{NO}_3$	1686(s, br)	1633(s)	1591(s), 1502(m)	701(m)	825(m), 802(w)
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{guo})(\text{nleu})/\text{NO}_3$	1691(s)	1636(s)	1588(s), 1501(m)	701(m)	825(m), 802(w)
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{cyd})(\text{gly})/\text{NO}_3$	1651(s)	1635(s), 1538(s)	1622(m), 1505(m)	791(w), 777(m)	
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{cyd})(\text{ala})/\text{NO}_3$	1652(m)	1645(m), 1540(sh)	1621(s), 1505(m)	791(w), 772(m)	
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{cyd})(2\text{-aba})/\text{NO}_3$	1656(s)	1649(s), 1537(m)	1618(m), 1504(m)	793(m), 776(m)	
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{cyd})(\text{nval})/\text{NO}_3$	1657(s)	1645(s), 1538(m)	1615(m), 1505(m)	791(m), 774(m)	
$\text{cis}-(\text{NH}_3)_2\text{Pt}(\text{cyd})(\text{nleu})/\text{NO}_3$	1657(s)	1646(s), 1537(m)	1617(m), 1505(m)	791(m), 775(m)	

Table IV: Difference in chemical shifts $\Delta\delta$ (ppm) of the protons of the zwitterionic forms of the aminoacids and the ternary complexes coordinated ones

$\Delta\delta$	H_α	H_β	H_γ	H_δ	H_ϵ
$\delta_{2\text{-aba}} - \delta_{\text{tern}} \text{ complex}(\text{guo})$	0.711	0.236	0.210		
$\delta_{\text{nval}} - \delta_{\text{tern}} \text{ complex}(\text{guo})$	0.698	0.273	0.239	0.153	
$\delta_{\text{nleu}} - \delta_{\text{tern}} \text{ complex}(\text{guo})$	0.702	0.297	0.270	0.220	0.143
$\delta_{2\text{-aba}} - \delta_{\text{tern}} \text{ complex}(\text{cyd})$	0.537 0.396	0.207	0.139		
$\delta_{\text{nval}} - \delta_{\text{tern}} \text{ complex}(\text{cyd})$	0.535 0.400	0.196	0.158	0.093	
$\delta_{\text{nleu}} - \delta_{\text{tern}} \text{ complex}(\text{cyd})$	0.534 0.400	0.176	0.165	0.105	0.058

Table V: Difference in chemical shifts (ppm) of the terminal methyl groups of the anionic forms of the aminoacids and the ternary complexes coordinated ones

$\Delta\delta$	ala	2-aba	nval	nleu
$\delta_{\text{amac}} - \delta_{\text{tern}} \text{ complex}(\text{guo})$	-0.09	0.094	0.107	0.130
$\delta_{\text{amac}} - \delta_{\text{tern}} \text{ complex}(\text{cyd})$	-0.128	0.003	0.027	0.045

Table VI: ¹H-NMR Chemical Shifts, Coupling Constants and percentages of gg, ³E and anti sugar conformations

Compounds	pD	H ₁ ^a	H ₂	H ₃	H ₄	H ₅ ^a	J ₁₂	J ₂₃	J ₃₄	J ₄₅	J ₄₅ ^a	gg %	³ E %	K _{eq} (³ E/ ² E)	anti %
<i>cis</i> -(NH ₃) ₂ Pt(guo)(gly)]NO ₃	5.6	5.985, 5.973(d)	4.710(t)	4.417(t)	4.253(q)	3.888(m)	4.80	4.86	3.98	2.94	4.12	68	45	0.82	51
<i>cis</i> -(NH ₃) ₂ Pt(guo)(ala)]NO ₃	5.6	5.987 5.979(d)	4.700(t)	4.416(t)	4.259(q)	3.899(m)	5.07	4.88	4.09	2.88	4.07	69	45	0.82	53
<i>cis</i> -(NH ₃) ₂ Pt(guo)(2-aba)]NO ₃	5.6	5.968 5.959(d)	4.706(t)	4.417(t)	4.263(q)	3.893(m)	5.13	4.81	3.92	2.84	4.06	70	43	0.75	52
<i>cis</i> -(NH ₃) ₂ Pt(guo)(nval)]NO ₃	5.6	5.998 5.985(d)	4.702(t)	4.416(t)	4.265(q)	3.895(m)	5.13	4.76	4.04	2.90	4.11	69	44	0.78	53
<i>cis</i> -(NH ₃) ₂ Pt(guo)(nleu)]NO ₃	5.6	5.993 5.984(d)	4.698(t)	4.410(t)	4.261(q)	3.890(m)	5.12	4.82	4.08	2.94	4.11	68	44	0.78	53
guo ^a		5.895(d)	4.712(t)	4.394(t)	4.215(m)	3.845(m)	5.90	5.20	3.70	3.20	3.80	69	38	0.61	51
<i>cis</i> -(NH ₃) ₂ Pt(cyd)(gly)]NO ₃	5.5	5.931 5.925 5.903 5.896(dd)	4.341(q)	4.209(t)	4.161(m)	3.890(m)	3.61		5.05	2.72	4.74	64	58	1.38	
<i>cis</i> -(NH ₃) ₂ Pt(cyd)(ala)]NO ₃	5.5	5.939 5.933 5.897 5.891(dd)	4.352(q)	4.221(q)	4.164(m)	3.888(m)	3.68		5.37	2.73	4.27	69	59	1.44	
<i>cis</i> -(NH ₃) ₂ Pt(cyd)(2-aba)]NO ₃	5.5	5.948 5.942 5.896 5.890(dd)	4.350(m)	4.218(q)	4.165(m)	3.886(m)	3.69			2.75	4.32	68			
<i>cis</i> -(NH ₃) ₂ Pt(cyd)(nval)]NO ₃	5.5	5.944 5.938 5.891 5.885(dd)	4.344(m)	4.215(q)	4.162(m)	3.887(m)	3.66		5.89	2.69	4.32	69	61	1.56	
<i>cis</i> -(NH ₃) ₂ Pt(cyd)(nleu)]NO ₃	5.5	5.947 5.927 5.893 5.884(dd)	4.344(m)	4.219(q)	4.168(m)	3.887(m)	3.72			3.04	4.36	65			
cyd	5.5	5.920(d)	4.331(t)	4.229(t)	4.156(q)	3.898(m)				2.24	4.32	73	60 ^b	1.50	

^aTaken from ref.35, ^bTaken from ref.41.