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Table S1. Atomic coordinates ($\cdot 10^4$) and Equivalent Isotropic Displacement Parameters ($\cdot 10^3$, Å^2)[a] for $(HL^1)ClO_4$.

Atom	x	y	z	U(eq)[a]
Cl	1389(1)	6891(1)	611(1)	20(1)
O(1)	1019(1)	7446(1)	1165(1)	33(1)
O(2)	1798(1)	7504(1)	104(1)	45(1)
O(3)	648(1)	6348(1)	303(1)	32(1)
O(4)	2080(1)	6242(2)	868(1)	46(1)
N(1)	3567(1)	4829(1)	335(1)	17(1)
N(2)	3484(1)	4428(1)	1813(1)	17(1)
N(3)	4878(1)	5123(2)	1883(1)	20(1)
N(4)	3351(1)	4432(2)	-1449(1)	20(1)
N(5)	2186(1)	4180(1)	-745(1)	18(1)
C(1)	4055(2)	5338(2)	790(2)	17(1)
C(2)	4488(2)	6210(2)	631(2)	19(1)
C(3)	4426(2)	6549(2)	-31(2)	24(1)
C(4)	3938(2)	6025(2)	-519(2)	21(1)
C(5)	3528(2)	5172(2)	-307(2)	17(1)
C(6)	4144(2)	4962(2)	1485(2)	18(1)
C(7)	3805(2)	4240(2)	2467(2)	19(1)
C(8)	3423(2)	3757(2)	3015(2)	24(1)
C(9)	3927(2)	3725(2)	3613(2)	30(1)
C(10)	4800(2)	4186(2)	3663(2)	33(1)
C(11)	5179(2)	4670(2)	3115(2)	29(1)
C(12)	4680(2)	4688(2)	2505(2)	20(1)
C(13)	2565(2)	4141(2)	1559(2)	23(1)
C(14)	3032(2)	4592(2)	-818(2)	18(1)
C(15)	2686(2)	3903(2)	-1815(2)	18(1)
C(16)	2660(2)	3590(2)	-2483(2)	23(1)
C(17)	1850(2)	3121(2)	-2682(2)	24(1)
C(18)	1117(2)	2967(2)	-2231(2)	25(1)
C(19)	1146(2)	3272(2)	-1561(2)	22(1)
C(20)	1951(2)	3755(2)	-1358(2)	17(1)
C(21)	1595(2)	4207(2)	-133(2)	24(1)

a) U(eq) is defined as one third of the trace of the orthogonalized *Uij* tensor

Table S2. Anisotropic displacement parameters ($Å^2 \cdot 10^3$) for $(HL^1)ClO_4$. The anisotropic displacement factor exponent is : $-2\pi^2 [(h a^*)^2 U_{11} + ... + 2 h k a^* b^* U_{12}]$.

Atom	U_{11}	U_{22}	U_{33}	U_{23}	U_{13}	U_{12}
Cl	20(1)	20(1)	19(1)	-2(1)	-2(1)	0(1)
O(1)	31(1)	37(1)	32(2)	-18(1)	7(1)	-1(1)
O(2)	62(1)	36(1)	38(2)	2(1)	17(1)	-19(1)
O(3)	22(1)	38(1)	37(2)	-14(1)	-4(1)	-9(1)
O(4)	41(1)	55(1)	43(2)	-10(1)	-20(1)	29(1)
N(1)	16(1)	18(1)	15(2)	-1(1)	1(1)	3(1)
N(2)	18(1)	18(1)	14(2)	1(1)	1(1)	-1(1)
N(3)	17(1)	30(1)	14(2)	-2(1)	0(1)	0(1)
N(4)	19(1)	27(1)	13(2)	0(1)	1(1)	-1(1)
N(5)	18(1)	22(1)	14(2)	2(1)	3(1)	1(1)
C(1)	14(1)	20(1)	15(2)	-1(1)	2(1)	5(1)
C(2)	17(1)	22(2)	18(2)	-1(1)	1(1)	-2(1)
C(3)	20(1)	23(2)	28(2)	3(2)	3(1)	-3(1)
C(4)	21(1)	26(2)	17(2)	5(2)	4(1)	0(1)
C(5)	15(1)	19(1)	17(2)	-1(1)	2(1)	3(1)
C(6)	17(1)	18(1)	18(2)	-3(1)	4(1)	3(1)
C(7)	24(1)	18(1)	15(2)	-2(1)	0(1)	2(1)
C(8)	29(1)	26(2)	19(2)	2(2)	-1(1)	-2(1)
C(9)	39(2)	34(2)	16(2)	4(2)	2(2)	0(1)
C(10)	33(2)	47(2)	20(2)	4(2)	-6(2)	3(1)
C(11)	24(1)	42(2)	21(2)	3(2)	-2(1)	2(1)
C(12)	18(1)	25(2)	17(2)	1(1)	1(1)	2(1)
C(13)	16(1)	30(2)	23(2)	4(2)	-7(1)	-5(1)
C(14)	17(1)	18(1)	18(2)	4(1)	0(1)	2(1)
C(15)	21(1)	17(1)	15(2)	2(1)	-2(1)	3(1)
C(16)	29(1)	22(1)	18(2)	0(1)	2(1)	4(1)
C(17)	36(2)	21(2)	16(2)	-2(2)	-6(2)	5(1)
C(18)	24(1)	22(1)	30(2)	0(2)	-8(1)	0(1)
C(19)	23(1)	21(1)	22(2)	3(2)	-3(1)	1(1)
C(20)	20(1)	19(1)	13(2)	1(1)	0(1)	4(1)
C(21)	20(1)	35(2)	18(2)	-2(2)	6(1)	-2(1)

Table S3. Atomic coordinates ($\cdot 10^4$) and Equivalent Isotropic Displacement Parameters ($\cdot 10^3$, Å^2)[a] of the Non-hydrogen Atoms in $[Eu(NO_3)_3(L^7)(MeCN)]2.5MeCN$.

Atom	x	y	z	U(eq)[a]
Eu	1323(1)	1867(1)	3205(1)	38(1)
N(1)	3215(4)	976(4)	3233(4)	59(1)
O(11)	3405(3)	1921(3)	3423(3)	52(1)
O(12)	2161(3)	424(3)	3052(3)	54(1)
O(13)	4024(5)	637(5)	3232(6)	114(2)
N(2)	-338(4)	2987(4)	3426(4)	57(1)
O(21)	-62(3)	2613(3)	3945(3)	54(1)
O(22)	189(3)	2870(3)	2806(3)	51(1)
O(23)	-1049(5)	3437(5)	3521(5)	95(2)
N(3)	-1001(4)	264(3)	2721(3)	48(1)
O(31)	-778(3)	761(3)	2283(2)	50(1)
O(32)	-125(3)	393(3)	3308(3)	58(1)
O(33)	-1988(3)	-312(3)	2575(3)	66(1)
N(4)	1846(4)	1849(4)	4715(3)	54(1)
C(90)	1803(5)	1434(5)	5158(4)	62(1)
C(91)	1743(7)	880(7)	5684(6)	91(2)
N(41)	1377(3)	874(3)	1595(3)	40(1)
C(11)	924(4)	-177(4)	989(3)	41(1)
C(16)	208(4)	-1025(4)	1045(3)	45(1)
C(15)	-124(4)	-1998(4)	307(4)	48(1)
C(14)	228(4)	-2140(4)	-483(4)	48(1)
C(13)	944(4)	-1317(4)	-547(3)	45(1)
C(12)	1280(4)	-340(4)	203(3)	40(1)
N(42)	1969(3)	625(3)	351(3)	40(1)
C(1)	1977(4)	1333(3)	1200(3)	39(1)
N(21)	2538(3)	2923(3)	2520(3)	40(1)
C(22)	3086(4)	3954(4)	3010(3)	42(1)
C(23)	3661(4)	4561(4)	2659(3)	43(1)
C(24)	3759(4)	4082(4)	1789(3)	44(1)
C(25)	3190(4)	3011(4)	1279(3)	42(1)

C(26)	2583(4)	2456(3)	1658(3)	40(1)
N(51)	2423(3)	3803(3)	4258(3)	42(1)
C(31)	2648(4)	4437(4)	5182(3)	42(1)
C(32)	2211(5)	4248(4)	5839(4)	50(1)
C(33)	2668(5)	5020(5)	6719(4)	56(1)
C(34)	3515(5)	5974(4)	6957(4)	55(1)
C(35)	3956(5)	6181(4)	6326(3)	50(1)
C(36)	3502(4)	5395(4)	5435(3)	43(1)
N(52)	3772(3)	5344(3)	4653(3)	43(1)
C(3)	3092(4)	4377(4)	3973(3)	41(1)
C(4)	2517(4)	777(4)	-315(3)	44(1)
C(41)	3864(4)	1144(4)	-58(3)	42(1)
C(42)	4543(4)	1106(4)	662(3)	46(1)
C(43)	5765(5)	1431(4)	821(4)	50(1)
C(44)	6300(5)	1789(4)	288(4)	51(1)
C(45)	5623(4)	1811(4)	-413(4)	50(1)
C(46)	4385(4)	1489(4)	-591(3)	46(1)
O(47)	6043(3)	2162(3)	-978(3)	63(1)
C(48)	7270(6)	2353(7)	-929(6)	87(2)
O(49)	6528(3)	1424(3)	1492(3)	61(1)
C(410)	6046(6)	1114(5)	2103(4)	63(1)
C(51)	4560(4)	4674(4)	1459(3)	45(1)
C(52)	4678(5)	5705(4)	1677(4)	50(1)
C(53)	5540(5)	6276(4)	1457(4)	52(1)
C(54)	6287(4)	5811(4)	1028(3)	49(1)
C(55)	6176(5)	4783(4)	783(4)	50(1)
C(56)	5314(5)	4225(4)	1006(3)	49(1)
N(7)	7221(4)	6415(4)	813(4)	60(1)
O(71)	7350(4)	7322(4)	1047(4)	80(1)
O(72)	7846(6)	5978(4)	406(5)	100(2)
C(6)	4762(4)	6150(4)	4673(3)	46(1)
C(61)	4432(4)	6939(4)	4440(3)	45(1)
C(62)	3527(5)	7307(4)	4711(4)	48(1)
C(63)	3319(5)	8073(4)	4531(4)	50(1)

C(64)	3997(5)	8493(4)	4077(4)	52(1)
C(65)	4875(5)	8096(4)	3802(4)	49(1)
C(66)	5100(4)	7332(4)	3986(4)	48(1)
O(67)	5576(4)	8418(3)	3346(3)	60(1)
C(68)	5432(6)	9257(5)	3194(5)	60(1)
O(69)	2461(4)	8505(3)	4757(3)	63(1)
C(610)	1751(6)	8141(5)	5239(5)	63(2)
N(92)	-903(11)	-2951(11)	3022(12)	185(6)
C(93)	-150(9)	-2544(7)	2865(8)	99(3)
C(94)	819(9)	-1990(8)	2683(7)	107(3)
N(95)	1735(18)	5614(15)	1594(15)	122(4)
C(96)	1072(20)	5354(19)	928(15)	122(4)
C(97)	70(30)	4951(29)	99(21)	122(4)
N(98)	-1187(15)	4350(13)	1492(11)	108(3)
C(99)	-488(17)	4727(15)	2193(13)	108(3)
C(100)	500(27)	5224(42)	3046(21)	108(3)
N(101)	1877(14)	5877(12)	2142(12)	100(3)
C(102)	1285(17)	5536(15)	2499(13)	100(3)
C(103)	586(26)	5225(39)	3042(21)	100(3)

a) U(eq) is defined as one third of the trace of the orthogonalized *Uij* tensor

Table S4. Anisotropic displacement parameters ($Å^2 \cdot 10^3$) for $[Eu(NO_3)_3(L^7)(MeCN)]\cdot 2.5MeCN$. The anisotropic displacement factor exponent takes the form: $-2\pi^2 [(h a^*)^2 U_{11} + ... + 2 h k a^* b^* U_{12}]$

Atom	U_{11}	U_{22}	U_{33}	U_{23}	U_{13}	U_{12}
Eu	33(1)	42(1)	40(1)	21(1)	11(1)	13(1)
N(1)	49(3)	58(3)	83(3)	38(3)	19(2)	28(2)
O(11)	34(2)	59(2)	68(2)	34(2)	10(2)	17(2)
O(12)	52(2)	50(2)	60(2)	28(2)	11(2)	17(2)
O(13)	71(3)	97(4)	203(8)	81(5)	43(4)	55(3)
N(2)	43(2)	64(3)	79(3)	38(3)	23(2)	29(2)
O(21)	46(2)	61(2)	61(2)	29(2)	24(2)	22(2)
O(22)	43(2)	63(2)	58(2)	34(2)	17(2)	24(2)
O(23)	84(3)	117(4)	130(5)	73(4)	54(3)	69(3)
N(3)	39(2)	51(2)	50(2)	21(2)	13(2)	11(2)
O(31)	43(2)	56(2)	47(2)	25(2)	11(2)	9(2)
O(32)	46(2)	64(2)	65(2)	38(2)	7(2)	10(2)
O(33)	43(2)	77(3)	69(2)	36(2)	14(2)	2(2)
N(4)	61(3)	60(3)	44(2)	27(2)	11(2)	24(2)
C(90)	52(3)	64(4)	64(3)	31(3)	9(3)	16(3)
C(91)	76(5)	113(6)	113(6)	86(6)	21(4)	25(4)
N(41)	32(2)	48(2)	46(2)	24(2)	15(2)	17(2)
C(11)	33(2)	44(2)	46(2)	19(2)	10(2)	15(2)
C(16)	35(2)	51(3)	51(3)	26(2)	14(2)	15(2)
C(15)	39(2)	44(3)	61(3)	26(2)	13(2)	12(2)
C(14)	40(3)	46(3)	54(3)	20(2)	9(2)	15(2)
C(13)	37(2)	50(3)	44(2)	20(2)	10(2)	15(2)
C(12)	31(2)	45(3)	46(2)	22(2)	9(2)	14(2)
N(42)	36(2)	43(2)	41(2)	19(2)	12(2)	12(2)
C(1)	31(2)	44(2)	42(2)	20(2)	10(2)	13(2)
N(21)	37(2)	45(2)	40(2)	21(2)	11(2)	14(2)
C(22)	35(2)	47(3)	45(2)	22(2)	12(2)	15(2)
C(23)	43(2)	41(2)	49(3)	22(2)	17(2)	15(2)
C(24)	42(2)	43(3)	50(3)	24(2)	15(2)	16(2)

C(25)	38(2)	48(3)	44(2)	21(2)	16(2)	16(2)
C(26)	33(2)	43(2)	45(2)	21(2)	10(2)	14(2)
N(51)	40(2)	43(2)	41(2)	19(2)	11(2)	12(2)
C(31)	40(2)	44(3)	43(2)	19(2)	14(2)	18(2)
C(32)	51(3)	55(3)	47(3)	24(2)	18(2)	19(2)
C(33)	66(3)	64(3)	47(3)	28(3)	21(3)	29(3)
C(34)	62(3)	55(3)	44(3)	17(2)	12(2)	24(3)
C(35)	51(3)	46(3)	47(3)	17(2)	9(2)	18(2)
C(36)	45(3)	49(3)	43(2)	24(2)	14(2)	22(2)
N(52)	39(2)	41(2)	47(2)	20(2)	12(2)	13(2)
C(3)	39(2)	45(3)	42(2)	21(2)	11(2)	18(2)
C(4)	37(2)	50(3)	37(2)	17(2)	11(2)	10(2)
C(41)	35(2)	46(2)	42(2)	17(2)	12(2)	16(2)
C(42)	41(3)	47(3)	46(2)	18(2)	13(2)	16(2)
C(43)	43(3)	49(3)	51(3)	19(2)	9(2)	19(2)
C(44)	36(3)	53(3)	61(3)	21(2)	14(2)	17(2)
C(45)	42(3)	53(3)	56(3)	23(2)	18(2)	19(2)
C(46)	38(2)	51(3)	48(3)	22(2)	14(2)	14(2)
O(47)	41(2)	86(3)	73(2)	45(2)	27(2)	19(2)
C(48)	45(3)	129(6)	102(5)	66(5)	33(4)	25(4)
O(49)	48(2)	74(3)	61(2)	33(2)	7(2)	23(2)
C(410)	64(4)	71(4)	52(3)	27(3)	8(3)	30(3)
C(51)	42(3)	43(2)	47(3)	21(2)	12(2)	12(2)
C(52)	49(3)	54(3)	58(3)	31(2)	23(2)	21(2)
C(53)	52(3)	46(3)	61(3)	29(2)	16(2)	15(2)
C(54)	46(3)	52(3)	49(3)	26(2)	16(2)	11(2)
C(55)	52(3)	54(3)	53(3)	30(2)	26(2)	20(2)
C(56)	53(3)	44(3)	51(3)	20(2)	19(2)	17(2)
N(7)	56(3)	60(3)	74(3)	39(2)	26(2)	16(2)
O(71)	70(3)	67(3)	130(4)	61(3)	51(3)	27(2)
O(72)	101(4)	77(3)	153(6)	61(4)	92(4)	37(3)
C(6)	41(2)	46(3)	50(3)	24(2)	9(2)	12(2)
C(61)	42(2)	40(2)	45(2)	16(2)	10(2)	9(2)
C(62)	49(3)	50(3)	51(3)	26(2)	18(2)	18(2)

C(63)	46(3)	52(3)	59(3)	28(2)	21(2)	23(2)
C(64)	53(3)	53(3)	61(3)	31(3)	24(3)	22(2)
C(65)	45(3)	50(3)	55(3)	26(2)	18(2)	18(2)
C(66)	40(3)	48(3)	56(3)	24(2)	16(2)	17(2)
O(67)	58(2)	63(2)	89(3)	50(2)	40(2)	30(2)
C(68)	64(4)	62(3)	78(4)	46(3)	30(3)	28(3)
O(69)	67(2)	76(2)	82(3)	51(2)	47(2)	44(2)
C(610)	66(4)	71(4)	78(4)	44(3)	45(3)	38(3)
N(92)	145(9)	192(12)	305(19)	179(14)	113(12)	58(9)
C(93)	96(6)	96(6)	132(7)	74(6)	39(5)	32(5)
C(94)	96(6)	135(8)	120(7)	91(7)	30(5)	29(6)

Table S5. Least-Squares Planes Data for $[Eu(NO_3)_3(L^7)(MeCN)]\cdot 2.5MeCN$.

	Description	Deviations (Å) Max.	Atom
1	benzimidazol #1, N(51), N(52)	0.023	C(32)
2	pyridine, N(21)	0.030	C(23)
3	benzimidazol #2, N(41); N(42)	0.024	C(1)
4	phenyl	0.004	C(54)
5	nitro	0.000	------
6	3,5-dimethoxybenzyl #1, O(67), O(69)	0.058	C(68)
7	3,5-dimethoxybenzyl #2, O(47), O(49)	0.149	C(48)
8	nitrate, O(11)	0.005	N(1)
9	nitrate, O(21)	0.007	N(2)
10	nitrate, O(31)	0.016	N(3)
11	Eu, N(21), N(41), N(51), O(32)	0.083	N(21)

Interplane Angles [°]

	2	3	4	5	6	7	8	9	10	11
1	13.10(0.04)	14.64(0.03)	54.37(0.04)	51.94(0.08)	73.27(0.03)	120.81(0.3)	79.92(0.07)	81.56(0.06)	126.58(0.04)	10.44(0.03)
2		4.31(0.04)	43.90(0.04)	41.8(0.1)	60.56(0.04)	107.79(0.04)	72.93(0.07)	68.71(0.06)	115.01(0.05)	5.63(0.03)
3			40.51(0.04)	38.3(0.1)	58.65(0.27)	106.37(0.03)	68.85(0.07)	68.68(0.05)	112.26(0.04)	4.53(0.02)
4				2.80(0.08)	26.08(0.04)	71.15(0.04)	32.90(0.07)	48.75(0.05)	72.29(0.05)	44.08(0.04)
5					28.7(0.1)	73.94(0.07)	33.8(0.2)	51.0(0.1)	74.81(0.08)	41.72(0.09)
6						48.00(0.03)	42.29(0.04)	25.05(0.04)	55.53(0.04)	63.04(0.03)
7							62.94(0.05)	42.62(0.06)	20.22(0.04)	110.84(0.03)
8								66.29(0.05)	52.92(0.07)	71.12(0.07)
9									59.02(0.06)	73.12(0.05)
10										116.18(0.04)

Table S6. Intermolecular CH····O Interactions Found in $[Eu(NO_3)_3(L^7)(MeCN)]\cdot 2.5MeCN$

Atoms	Distance (Å)	Angle (°)
O(21)····C(610) [a)]	2.90	95.8, O(21)-H(61)-C(610)
O(13)·····C(68) [b)]	2.97	110.0, O(13)-H(68)-C(68)
O(67)····C(91) [c)]	3.13	135.2, O(67)-H(91)-C(91)
O(31)····C(4) [d)]	3.18	141.7, O(31)-H(4)-C(4)
O(71)····C(46) [e)]	3.27	128.9, O(71)-H(46)-C(46)
O(11)····C(6) [c)]	3.28	103.8, O(11)-H(6)-C(6)
O(31)····C(13) [d)]	3.36	132.1, O(31)-H(13)-C(13)
O(47)····C(68) [f)]	3.37	121.3, O(47)-H(68)-C(68)
O(33)····C(68) [g)]	3.44	152.8, O(33)-H(68)-C(68)
O(72)····C(15) [h)]	3.50	170.5, O(72)-H(15)-C(15)
O(71)····C(15) [h)]	3.56	125.6, O(71)-H(15)-C(15)
O(49)····C(13) [k)]	3.66	133.1, O(49)-H(13)-C(13)

a) $-x, 1-y, 1-z$
b) $x, y-1, z$
c) $1-x, 1-y, 1-z$
d $-x, -y, -z$
e) $1-x, 1-y, -z$
f) $1-x, 1-y, -z$
g) $x-1, y-1, z$
h) $1+x, 1+y, z$
k) $1-x, -y, -z$

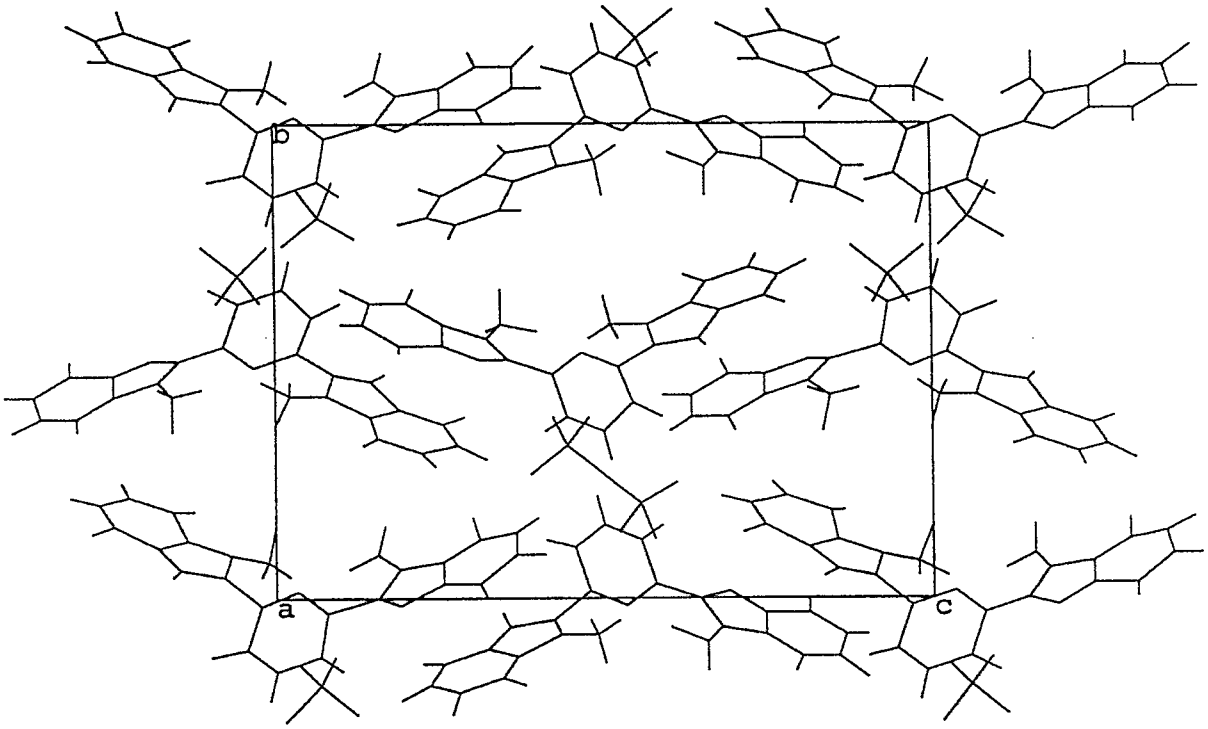

Figure F1. Crystal packing in $(HL^1)ClO_4$ along the c-axis

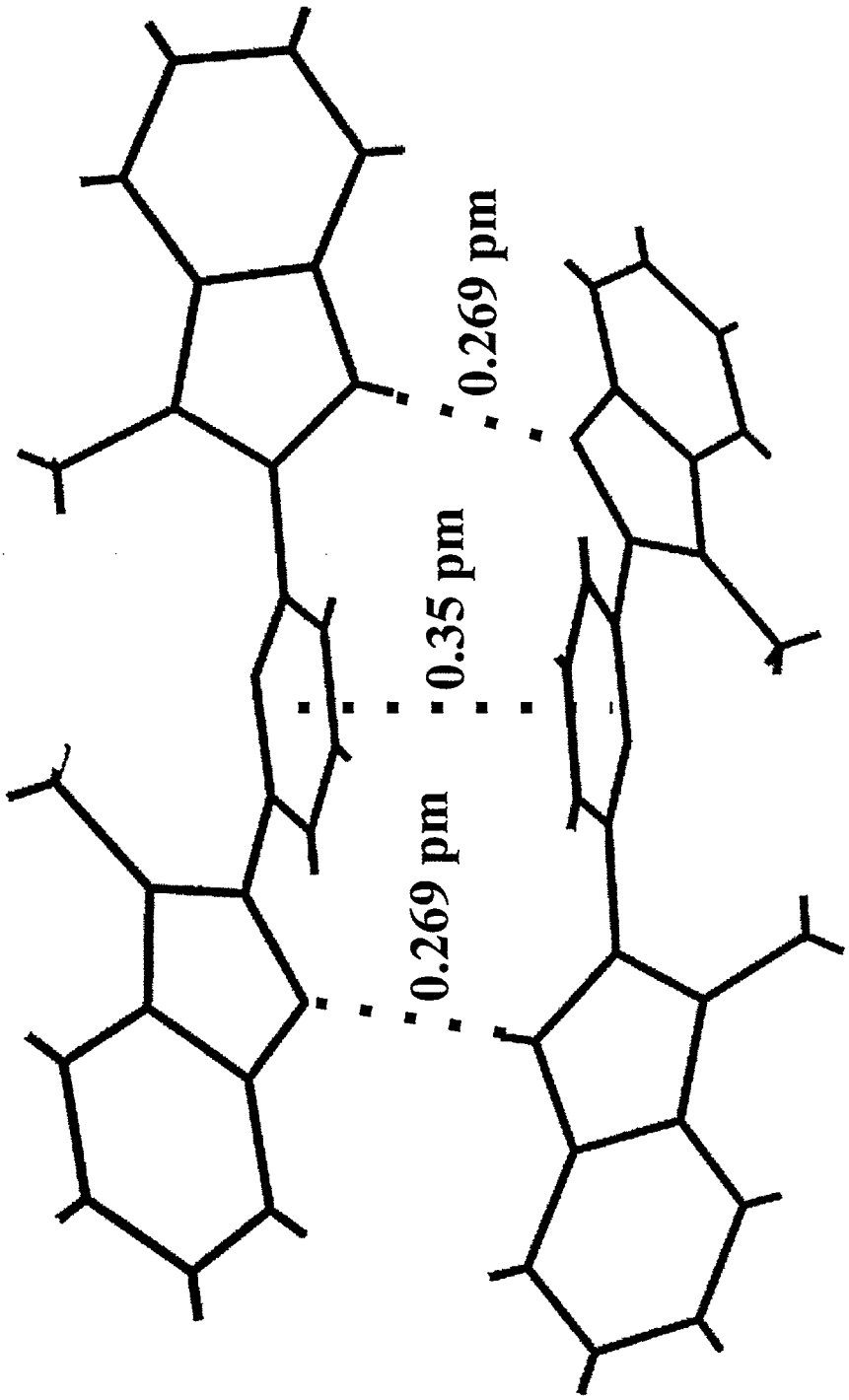

Figure F2. Intermolecular interactions between two $(HL^1)ClO_4$ molecules. View along the *b*-axis.

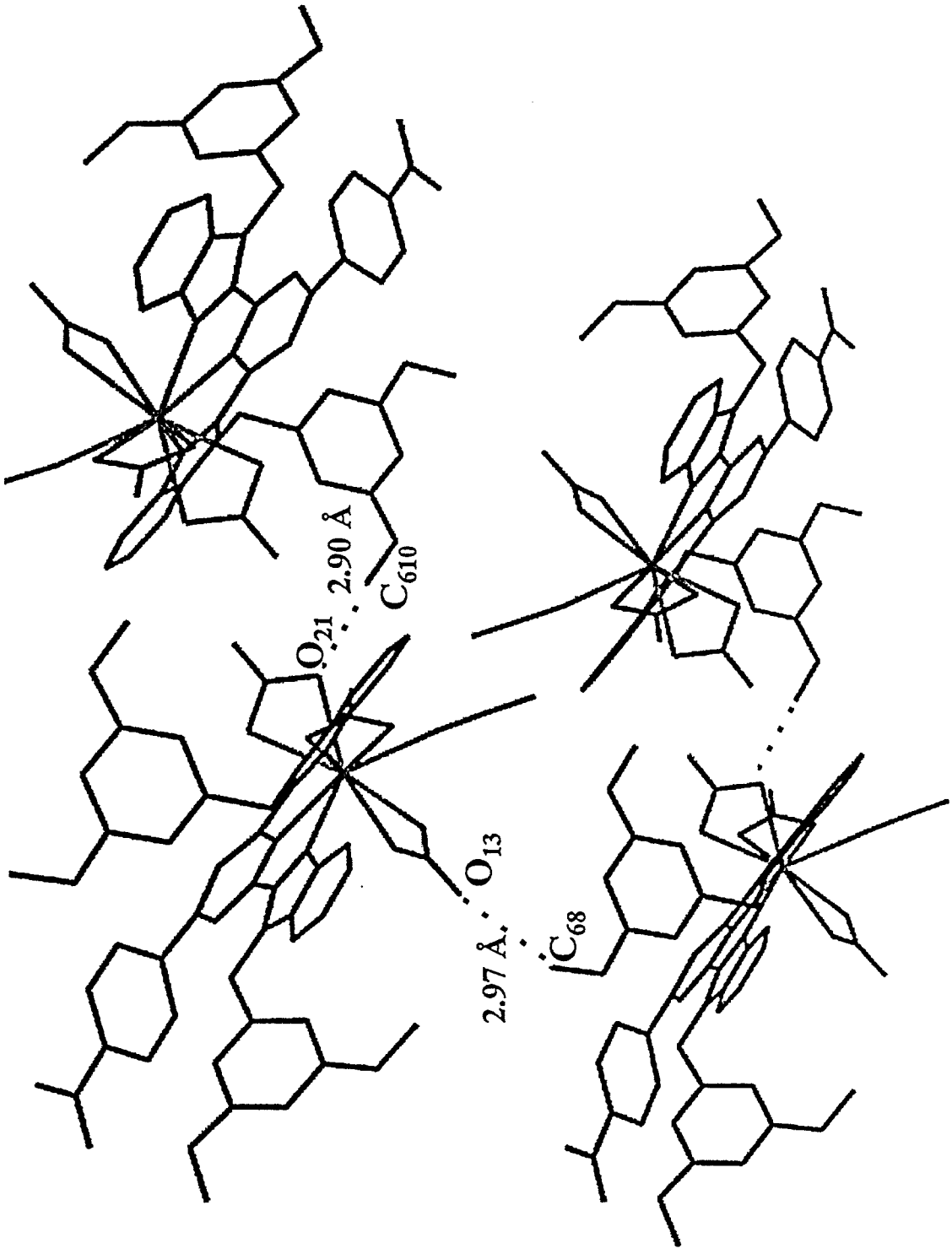

Figure F3. Largest intermolecular interactions in $[Eu(NO_3)_3(L^7)(MeCN)]$ 2.5MeCN

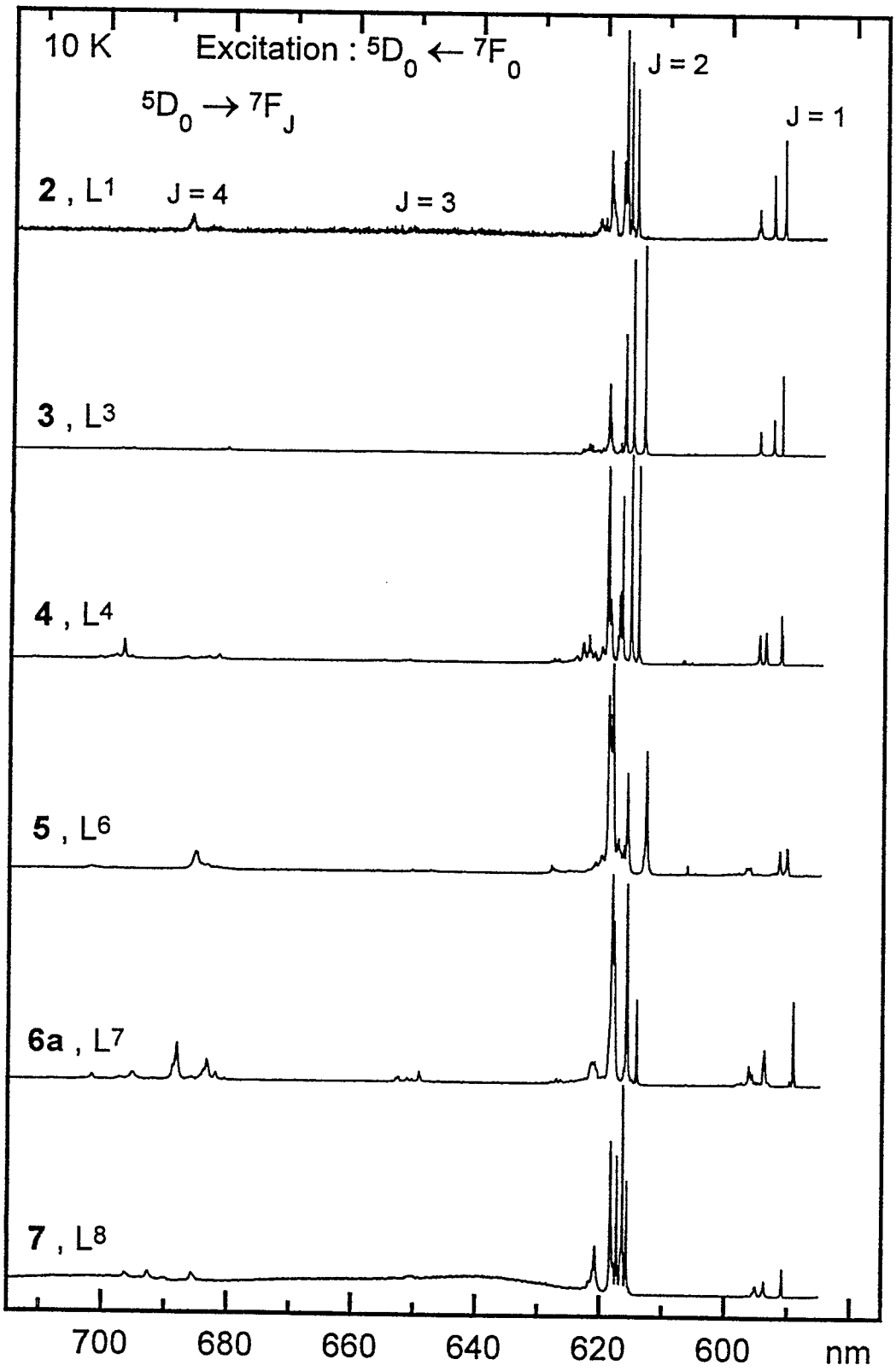

Figure F4. Emission spectra at 10 K

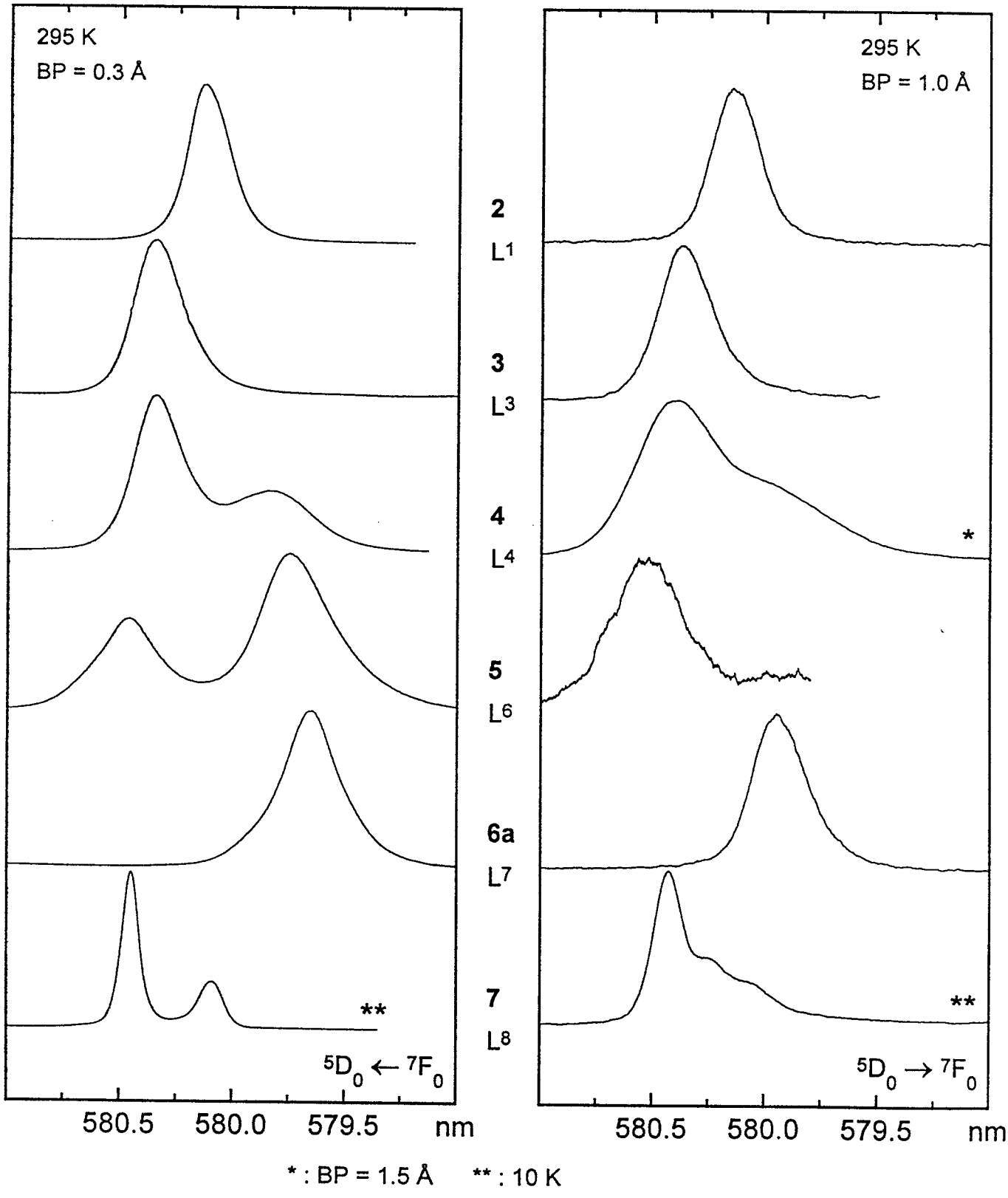

Figure F5. $^5D_0 \leftarrow {}^7F_0$ Excitation spectra at 295 K