Table S1. Crystal data and structure refinement for Eu(OAc)2Cl_x_3H2O.

Identification code	Ha2019_37_0m_a
Empirical formula	C4 H12 Cl Eu O7
Formula weight	359.55
Temperature	100(2) K
Wavelength	0.71073 A
Crystal system, space group	Monoclinic, P2(1)/n
Unit cell dimensions	a = 7.8412(2) A b = 7.8769(2) A ß = 98.354(1) deg. c = 17.4901(5) A
Volume	1068.80(5) A^3
Z, Calculated density	4, 2.234 Mg/m^3
Absorption coefficient	6.122 mm^-1
F(000)	688
Crystal size	0.462 x 0.163 x 0.034 mm
Theta range for data collection	2.717 to 28.000 deg.
Limiting indices	-10<=h<=10, -10<=k<=10, -23<=l<=23
Reflections collected / unique	79828 / 2587 [R(int) = 0.0399]
Completeness to theta = 25.242	99.9 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.781 and 0.436
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	2587 / 0 / 125
Goodness-of-fit on F^2	1.099
Final R indices [I>2sigma(I)]	R1 = 0.0131, wR2 = 0.0327
R indices (all data)	R1 = 0.0137, wR2 = 0.0330
Extinction coefficient	n/a
Largest diff. peak and hole	0.470 and -0.703 e.A^-3

Table S2. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters (A^2 x 10^3) for Eu(OAc)2Cl_x_3H2O. U(eq) is defined as one third of the trace of the orthogonalized Uij tensor.

	x	y	z	U(eq)
Eu(1)	2641(1)	4609(1)	5374(1)	9(1)
Cl(1)	3836(1)	9708(1)	6902(1)	15(1)
O(11)	-80(2)	3376(2)	5358(1)	14(1)
O(12)	-2784(2)	2634(2)	5262(1)	15(1)
C(11)	-1222(2)	2314(2)	5492(1)	11(1)
C(12)	-720(3)	703(3)	5918(1)	21(1)
O(21)	5480(2)	5611(2)	5740(1)	12(1)
O(22)	8204(2)	6287(2)	5977(1)	14(1)
C(21)	6807(2)	5986(2)	6228(1)	11(1)
C(22)	6689(3)	6065(3)	7069(1)	19(1)
O(1W)	3918(2)	1779(2)	5376(1)	14(1)
O(2W)	1686(2)	6612(2)	6261(1)	14(1)
O(3W)	2995(2)	3508(2)	6683(1)	17(1)

Table S3. Bond lengths [A] and angles [deg] for Eu(OAc)2Cl_x_3H2O.

Eu(1)-O(11)	2.341(1)
Eu(1)-O(21)	2.362(1)
Eu(1)-O(2W)	2.407(1)
Eu(1)-O(3W)	2.427(1)
Eu(1)-O(1W)	2.444(1)
Eu(1)-O(12)#1	2.450(1)
Eu(1)-O(22)#2	2.462(1)
Eu(1)-O(21)#2	2.613(1)
Eu(1)-O(11)#1	2.728(1)
Eu(1)-Eu(1)#2	4.1455(2)
Eu(1)-Eu(1)#1	4.2027(2)
O(11)-C(11)	1.272(2)
O(12)-C(11)	1.258(2)
C(11)-C(12)	1.495(3)
O(21)-C(21)	1.281(2)
O(22)-C(21)	1.260(2)
C(21)-C(22)	1.489(3)
O(11)-Eu(1)-O(21)	164.54(5)
O(11)-Eu(1)-O(2W)	84.91(5)
O(21)-Eu(1)-O(2W)	88.59(5)
O(11)-Eu(1)-O(3W)	80.90(5)
O(21)-Eu(1)-O(3W)	83.67(5)
O(2W)-Eu(1)-O(3W)	68.25(5)
O(11)-Eu(1)-O(1W)	89.68(5)
O(21)-Eu(1)-O(1W)	86.23(5)
O(2W)-Eu(1)-O(1W)	139.69(5)
O(3W)-Eu(1)-O(1W)	71.45(5)
O(11)-Eu(1)-O(12)#1	117.68(5)
O(21)-Eu(1)-O(12)#1	73.91(5)
O(2W)-Eu(1)-O(12)#1	75.58(5)
O(3W)-Eu(1)-O(12)#1	137.63(5)
O(1W)-Eu(1)-O(12)#1	139.76(5)
O(11)-Eu(1)-O(22)#2	75.65(5)
O(21)-Eu(1)-O(22)#2	117.87(5)
O(2W)-Eu(1)-O(22)#2	137.81(5)
O(3W)-Eu(1)-O(22)#2	141.34(5)
O(1W)-Eu(1)-O(22)#2	78.05(5)
O(12)#1-Eu(1)-O(22)#2	80.92(5)
O(11)-Eu(1)-O(21)#2	125.13(5)
O(21)-Eu(1)-O(21)#2	67.20(5)
O(2W)-Eu(1)-O(21)#2	141.80(4)
O(3W)-Eu(1)-O(21)#2	132.84(5)
O(1W)-Eu(1)-O(21)#2	70.42(4)
O(12)#1-Eu(1)-O(21)#2	69.66(4)
O(22)#2-Eu(1)-O(21)#2	50.82(4)
O(11)-Eu(1)-O(11)#1	68.19(5)
O(21)-Eu(1)-O(11)#1	122.24(4)
O(2W)-Eu(1)-O(11)#1	69.19(4)
O(3W)-Eu(1)-O(11)#1	128.77(4)
O(1W)-Eu(1)-O(11)#1	143.61(4)
O(12)#1-Eu(1)-O(11)#1	49.50(4)
O(22)#2-Eu(1)-O(11)#1	68.87(4)
O(21)#2-Eu(1)-O(11)#1	98.35(4)
Eu(1)#2-Eu(1)-Eu(1)#1	139.857(5)

C(11)-O(11)-Eu(1)	159.3(1)
C(11)-O(11)-Eu(1)#1	88.8(1)
Eu(1)-O(11)-Eu(1)#1	111.8(1)
C(11)-O(12)-Eu(1)#1	102.5(1)

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O(12)-C(11)-O(11)	119.2(2)
O(12)-C(11)-C(12)	120.2(2)
O(11)-C(11)-C(12)	120.6(2)
C(21)-O(21)-Eu(1)	154.2(1)
C(21)-O(21)-Eu(1)#2	91.2(1)
Eu(1)-O(21)-Eu(1)#2	112.8(1)
C(21)-O(22)-Eu(1)#2	98.9(1)
O(22)-C(21)-O(21)	118.3(2)
O(22)-C(21)-C(22)	121.2(2)
O(21)-C(21)-C(22)	120.5(2)

Symmetry transformations used to generate equivalent atoms:
#1 -x,-y+1,-z+1 #2 -x+1,-y+1,-z+1

Table S4. Anisotropic displacement parameters (A^2 x 10^3) for Eu(OAc)2Cl_x_3H2O.

The anisotropic displacement factor exponent takes the form:

-2 pi^2 [h^2 a*^2 U11 + ... + 2 h k a* b* U12]

	U11	U22	U33	U23	U13	U12
Eu(1)	6(1)	10(1)	11(1)	0(1)	2(1)	-1(1)
Cl(1)	17(1)	12(1)	15(1)	2(1)	2(1)	-2(1)
O(11)	10(1)	15(1)	18(1)	0(1)	4(1)	-3(1)
O(12)	8(1)	16(1)	22(1)	5(1)	3(1)	0(1)
C(11)	11(1)	12(1)	13(1)	-1(1)	4(1)	1(1)
C(12)	21(1)	17(1)	24(1)	8(1)	1(1)	2(1)
O(21)	9(1)	15(1)	13(1)	-1(1)	2(1)	-2(1)
O(22)	8(1)	19(1)	16(1)	-2(1)	2(1)	-2(1)
C(21)	10(1)	10(1)	13(1)	-1(1)	0(1)	1(1)
C(22)	14(1)	31(1)	10(1)	0(1)	0(1)	2(1)
O(1W)	11(1)	13(1)	17(1)	2(1)	4(1)	1(1)
O(2W)	10(1)	14(1)	18(1)	-4(1)	2(1)	0(1)
O(3W)	24(1)	14(1)	15(1)	2(1)	6(1)	4(1)

Table S5. Hydrogen coordinates (x 10^4) and isotropic displacement parameters (A^2 x 10^3) for Eu(OAc)2Cl_x_3H2O.

	x	y	z	U(eq)
H(12A)	-1550	-190	5736	85(8)
H(12B)	-714	885	6473	85(8)
H(12C)	433	360	5825	85(8)
H(22A)	7840	5921	7365	53(6)
H(22B)	5931	5157	7203	53(6)
H(22C)	6219	7168	7192	53(6)
H(11W)	3884	958	5779	41(6)
H(12W)	5097	1794	5286	41(6)
H(21W)	501	6743	6329	41(6)
H(22W)	2240	7639	6462	41(6)
H(31W)	2517	4026	7101	52(7)
H(32W)	3263	2366	6851	52(7)

Table S6. Hydrogen bonds for Eu(OAc)2Cl_x_3H2O [A and deg.].

D-H...A	d(D-H)	d(H...A)	d(D...A)	<(DHA)
O(1W)-H(11W)...Cl(1)#3	0.96	2.20	3.137(1)	164.2
O(1W)-H(12W)...O(12)#4	0.96	1.79	2.707(2)	157.7
O(2W)-H(21W)...O(22)#5	0.96	1.85	2.715(2)	148.3
O(2W)-H(22W)...Cl(1)	0.96	2.13	3.081(1)	171.0
O(3W)-H(31W)...Cl(1)#6	0.96	2.23	3.180(2)	168.2
O(3W)-H(32W)...Cl(1)#3	0.96	2.14	3.077(2)	164.7

Symmetry transformations used to generate equivalent atoms:
#1 -x,-y+1,-z+1 #2 -x+1,-y+1,-z+1 #3 x,y-1,z
#4 x+1,y,z #5 x-1,y,z #6 -x+1/2,y-1/2,-z+3/2