Supplementary Material

A self-assembling lanthanide molecular nanoparticle for optical imaging

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1. Tables S1, S2: Crystallographic details and bond lengths and angles for **1**
2. Figures S1- S3 and Table S3: XPS data for polystyrene beads loaded with **1**
3. Figure S4: Polystyrene beads loaded with H_2L imaged by two-photon fluorescence microscopy.
4. Figure S5: Cytotoxicity data for 1 with AGS gastric cancer cells.

Table S1. Crystal data and structure refinement for $[Eu_8Cd_{24}L_{12}(OAc)_{48}]$ (**1**).

	$[Eu_8Cd_{24}L_{12}(OAc)_{48}]$ (**1**).
Formula	$C_{360}H_{464}N_{24}Eu_8Cd_{24}O_{144}$
Fw	11344.83
Crystal system	Orthorhombic
Space group	Fddd
a [Å]	55.192(11)
b [Å]	62.235(12)
c [Å]	80.147(16)
α [deg]	90
β [deg]	90
γ [deg]	90
V / [Å^3]	275294(95)
d / [g/cm^3]	1.095
Z	16
T [K]	223(1)
F(000)	89600
μ, mm^{-1}	1.494
θ rang, deg	2.95-24.83
reflns meads	58357
reflns used	58357
params	2521
R1^a, wR2^a [$I > 2\sigma(I)$]	0.0862, 0.2309
R1, wR2 (all data)	0.1500, 0.2713
Quality of fit	1.048

^{a} R1 = $\Sigma|F_o| - |F_c|\Sigma|F_o|$. wR2 = $[\Sigma w[(F_o{}^2 - F_c{}^2)^2]/\Sigma|[w(F_o{}^2)^2]]^{1/2}$. w=1/[$\sigma^2(F_o{}^2)+(0.075P)^2$], where $P = [\max(F_o{}^2,0)+2F_c{}^2]/3$.

Table S2. Selected Bond Lengths (Å) and Angles (°) for **1**.

Eu(1)-O(67)	2.303(7)	Cd(4)-O(57)	2.321(8)
Eu(1)-O(65)	2.345(8)	Cd(4)-O(58)	2.341(8)
Eu(1)-O(15)	2.379(9)	Cd(4)-O(8)	2.591(10)
Eu(1)-O(19)	2.386(7)	Cd(5)-O(10)	2.276(8)
Eu(1)-O(68)	2.418(7)	Cd(5)-O(37)	2.279(8)
Eu(1)-O(50)#1	2.463(8)	Cd(5)-O(38)	2.301(8)
Eu(1)-N(10)	2.573(8)	Cd(5)-O(42)	2.351(7)
Eu(1)-O(16)	2.624(7)	Cd(5)-O(36)	2.470(8)
Eu(2)-O(46)	2.312(7)	Cd(5)-O(9)	2.488(8)
Eu(2)-O(18)	2.349(7)	Cd(5)-O(39)	2.528(8)
Eu(2)-O(14)	2.378(7)	Cd(6)-O(22)#1	2.252(8)
Eu(2)-O(43)	2.378(7)	Cd(6)-N(11)#1	2.271(9)
Eu(2)-O(44)	2.379(9)	Cd(6)-O(28)	2.296(8)
Eu(2)-O(41)	2.470(8)	Cd(6)-O(2)	2.341(9)
Eu(2)-O(17)	2.615(7)	Cd(6)-O(31)	2.342(8)
Eu(2)-N(7)	2.618(9)	Cd(6)-O(1)	2.570(8)
Eu(3)-O(53)	2.330(7)	Cd(7)-O(28)	2.275(9)
Eu(3)-O(3)	2.357(7)	Cd(7)-O(22)#1	2.294(7)
Eu(3)-O(7)	2.359(8)	Cd(7)-O(25)	2.306(11)
Eu(3)-O(55)	2.387(10)	Cd(7)-O(27)	2.316(9)
Eu(3)-O(56)	2.401(8)	Cd(7)-O(21)#1	2.392(10)
Eu(3)-O(58)	2.468(8)	Cd(7)-O(48)#1	2.419(9)
Eu(3)-N(4)	2.579(11)	Cd(7)-O(26)	2.616(10)
Eu(3)-O(4)	2.589(7)	Cd(8)-N(5)	2.276(10)
Eu(4)-O(32)	2.299(8)	Cd(8)-O(10)	2.280(8)
Eu(4)-O(2)	2.330(8)	Cd(8)-O(42)	2.291(7)
Eu(4)-O(6)	2.362(8)	Cd(8)-O(14)	2.330(7)
Eu(4)-O(34)	2.379(8)	Cd(8)-O(41)	2.361(8)
Eu(4)-O(29)	2.409(8)	Cd(8)-O(13)	2.531(8)
Eu(4)-O(31)	2.434(9)	Cd(9)-O(23)	2.287(7)
Eu(4)-O(5)	2.589(8)	Cd(9)-O(69)	2.295(7)
Eu(4)-N(1)	2.601(10)	Cd(9)-N(12)	2.305(10)
Cd(1)-O(35)	2.263(9)	Cd(9)-O(19)	2.325(7)
Cd(1)-O(6)	2.324(8)	Cd(9)-O(50)#1	2.351(8)
Cd(1)-O(33)	2.332(8)	Cd(9)-O(20)	2.553(7)
Cd(1)-N(3)	2.336(10)	Cd(10)-O(64)	2.270(8)
Cd(1)-O(40)	2.387(8)	Cd(10)-O(15)	2.276(7)
Cd(1)-O(36)	2.414(7)	Cd(10)-O(66)	2.319(8)
Cd(2)-O(54)	2.289(9)	Cd(10)-N(8)	2.354(10)
Cd(2)-O(52)	2.322(8)	Cd(10)-O(59)	2.395(8)
Cd(2)-O(3)	2.322(7)	Cd(10)-O(63)	2.449(8)
Cd(2)-N(2)	2.364(9)	Cd(11)-O(23)	2.297(7)
Cd(2)-O(49)	2.376(7)	Cd(11)-O(71)	2.298(8)
Cd(2)-O(51)	2.413(7)	Cd(11)-O(69)	2.329(7)
Cd(3)-O(45)	2.286(10)	Cd(11)-O(72)	2.340(8)
Cd(3)-O(18)	2.322(8)	Cd(11)-O(51)#1	2.426(7)
Cd(3)-N(9)	2.329(9)	Cd(11)-O(24)	2.475(8)
Cd(3)-O(47)	2.337(9)	Cd(11)-O(70)	2.581(9)
Cd(3)-O(30)#1	2.349(8)	Cd(12)-O(11)	2.289(8)
Cd(3)-O(48)	2.417(9)	Cd(12)-O(62)	2.292(9)
Cd(4)-O(11)	2.243(8)	Cd(12)-O(57)	2.302(8)
Cd(4)-N(6)	2.284(10)	Cd(12)-O(60)	2.303(10)
Cd(4)-O(7)	2.318(8)	Cd(12)-O(63)	2.421(10)

Cd(12)-O(12)	2.450(8)
O(67)-Eu(1)-O(65)	74.4(3)
O(67)-Eu(1)-O(15)	86.0(3)
O(65)-Eu(1)-O(15)	77.8(3)
O(67)-Eu(1)-O(19)	118.6(3)
O(65)-Eu(1)-O(19)	148.9(3)
O(15)-Eu(1)-O(19)	128.4(2)
O(67)-Eu(1)-O(68)	139.8(3)
O(65)-Eu(1)-O(68)	72.5(3)
O(15)-Eu(1)-O(68)	108.1(3)
O(19)-Eu(1)-O(68)	82.3(2)
O(67)-Eu(1)-O(50)#1	80.2(3)
O(65)-Eu(1)-O(50)#1	87.7(3)
O(15)-Eu(1)-O(50)#1	162.3(2)
O(19)-Eu(1)-O(50)#1	68.7(2)
O(68)-Eu(1)-O(50)#1	76.4(3)
O(67)-Eu(1)-N(10)	76.4(3)
O(65)-Eu(1)-N(10)	139.2(3)
O(15)-Eu(1)-N(10)	72.4(3)
O(19)-Eu(1)-N(10)	71.2(3)
O(68)-Eu(1)-N(10)	143.4(3)
O(50)#1-Eu(1)-N(10)	114.6(3)
O(67)-Eu(1)-O(16)	144.8(3)
O(65)-Eu(1)-O(16)	111.6(3)
O(15)-Eu(1)-O(16)	62.9(2)
O(19)-Eu(1)-O(16)	75.0(2)
O(68)-Eu(1)-O(16)	70.3(3)
O(50)#1-Eu(1)-O(16)	133.2(2)
N(10)-Eu(1)-O(16)	78.6(2)
O(46)-Eu(2)-O(18)	85.4(3)
O(46)-Eu(2)-O(14)	116.0(3)
O(18)-Eu(2)-O(14)	128.4(3)
O(46)-Eu(2)-O(43)	141.4(3)
O(18)-Eu(2)-O(43)	109.7(3)
O(14)-Eu(2)-O(43)	82.8(3)
O(46)-Eu(2)-O(44)	76.7(3)
O(18)-Eu(2)-O(44)	76.9(3)
O(14)-Eu(2)-O(44)	150.4(3)
O(43)-Eu(2)-O(44)	72.9(3)
O(46)-Eu(2)-O(41)	79.2(3)
O(18)-Eu(2)-O(41)	160.2(3)
O(14)-Eu(2)-O(41)	70.3(3)
O(43)-Eu(2)-O(41)	76.3(3)
O(44)-Eu(2)-O(41)	87.4(3)
O(46)-Eu(2)-O(17)	144.2(3)
O(18)-Eu(2)-O(17)	62.9(2)
O(14)-Eu(2)-O(17)	76.9(2)
O(43)-Eu(2)-O(17)	70.0(3)
O(44)-Eu(2)-O(17)	109.1(3)
O(41)-Eu(2)-O(17)	135.2(2)
O(46)-Eu(2)-N(7)	77.0(3)
O(18)-Eu(2)-N(7)	72.3(3)
O(14)-Eu(2)-N(7)	68.6(3)
O(43)-Eu(2)-N(7)	140.9(3)
O(44)-Eu(2)-N(7)	140.6(3)
O(41)-Eu(2)-N(7)	115.6(3)
O(17)-Eu(2)-N(7)	77.7(3)
O(53)-Eu(3)-O(3)	86.8(3)
O(53)-Eu(3)-O(7)	117.8(3)
O(3)-Eu(3)-O(7)	129.2(3)
O(53)-Eu(3)-O(55)	73.9(3)
O(3)-Eu(3)-O(55)	78.1(3)
O(7)-Eu(3)-O(55)	148.3(3)
O(53)-Eu(3)-O(56)	141.6(3)
O(3)-Eu(3)-O(56)	106.3(3)
O(7)-Eu(3)-O(56)	82.0(3)
O(55)-Eu(3)-O(56)	73.9(3)
O(53)-Eu(3)-O(58)	79.1(3)
O(3)-Eu(3)-O(58)	160.2(3)
O(7)-Eu(3)-O(58)	70.2(3)
O(55)-Eu(3)-O(58)	84.7(3)
O(56)-Eu(3)-O(58)	77.8(3)
O(53)-Eu(3)-N(4)	76.9(3)
O(3)-Eu(3)-N(4)	74.1(3)
O(7)-Eu(3)-N(4)	70.2(3)
O(55)-Eu(3)-N(4)	140.4(3)
O(56)-Eu(3)-N(4)	141.1(3)
O(58)-Eu(3)-N(4)	115.3(3)
O(53)-Eu(3)-O(4)	144.7(3)
O(3)-Eu(3)-O(4)	62.9(2)
O(7)-Eu(3)-O(4)	74.8(3)
O(55)-Eu(3)-O(4)	113.7(3)
O(56)-Eu(3)-O(4)	69.2(3)
O(58)-Eu(3)-O(4)	134.5(2)
N(4)-Eu(3)-O(4)	77.5(3)
O(32)-Eu(4)-O(2)	116.6(3)
O(32)-Eu(4)-O(6)	86.1(3)
O(2)-Eu(4)-O(6)	127.3(3)
O(32)-Eu(4)-O(34)	75.8(3)
O(2)-Eu(4)-O(34)	149.7(3)
O(6)-Eu(4)-O(34)	78.8(3)
O(32)-Eu(4)-O(29)	141.7(3)
O(2)-Eu(4)-O(29)	82.9(3)
O(6)-Eu(4)-O(29)	108.7(3)
O(34)-Eu(4)-O(29)	72.9(3)
O(32)-Eu(4)-O(31)	80.0(3)
O(2)-Eu(4)-O(31)	72.0(3)
O(6)-Eu(4)-O(31)	160.2(3)
O(34)-Eu(4)-O(31)	84.2(3)
O(29)-Eu(4)-O(31)	75.3(3)
O(32)-Eu(4)-O(5)	143.7(3)
O(2)-Eu(4)-O(5)	75.1(3)
O(6)-Eu(4)-O(5)	62.4(3)
O(34)-Eu(4)-O(5)	112.2(3)
O(29)-Eu(4)-O(5)	70.5(3)
O(31)-Eu(4)-O(5)	134.8(3)
O(32)-Eu(4)-N(1)	75.7(3)
O(2)-Eu(4)-N(1)	69.8(3)
O(6)-Eu(4)-N(1)	71.5(3)
O(34)-Eu(4)-N(1)	139.8(3)

O(29)-Eu(4)-N(1)	142.2(3)
O(31)-Eu(4)-N(1)	117.8(3)
O(5)-Eu(4)-N(1)	77.3(3)
O(35)-Cd(1)-O(6)	108.6(3)
O(35)-Cd(1)-O(33)	93.8(3)
O(6)-Cd(1)-O(33)	95.6(3)
O(35)-Cd(1)-N(3)	167.7(3)
O(6)-Cd(1)-N(3)	77.6(3)
O(33)-Cd(1)-N(3)	96.2(3)
O(35)-Cd(1)-O(40)	87.2(3)
O(6)-Cd(1)-O(40)	160.0(3)
O(33)-Cd(1)-O(40)	95.5(3)
N(3)-Cd(1)-O(40)	84.7(3)
O(35)-Cd(1)-O(36)	82.9(3)
O(6)-Cd(1)-O(36)	83.1(3)
O(33)-Cd(1)-O(36)	175.7(3)
N(3)-Cd(1)-O(36)	87.4(3)
O(40)-Cd(1)-O(36)	87.0(3)
O(54)-Cd(2)-O(52)	90.7(3)
O(54)-Cd(2)-O(3)	110.8(3)
O(52)-Cd(2)-O(3)	95.1(3)
O(54)-Cd(2)-N(2)	167.8(3)
O(52)-Cd(2)-N(2)	97.2(3)
O(3)-Cd(2)-N(2)	77.9(3)
O(54)-Cd(2)-O(49)	85.5(3)
O(52)-Cd(2)-O(49)	93.1(3)
O(3)-Cd(2)-O(49)	161.7(3)
N(2)-Cd(2)-O(49)	84.7(3)
O(54)-Cd(2)-O(51)	83.5(3)
O(52)-Cd(2)-O(51)	174.0(3)
O(3)-Cd(2)-O(51)	85.6(3)
N(2)-Cd(2)-O(51)	88.8(3)
O(49)-Cd(2)-O(51)	88.0(3)
O(45)-Cd(3)-O(18)	105.4(3)
O(45)-Cd(3)-N(9)	168.5(3)
O(18)-Cd(3)-N(9)	79.9(3)
O(45)-Cd(3)-O(47)	92.7(3)
O(18)-Cd(3)-O(47)	95.9(3)
N(9)-Cd(3)-O(47)	97.0(3)
O(45)-Cd(3)-O(30)#1	88.8(3)
O(18)-Cd(3)-O(30)#1	163.1(3)
N(9)-Cd(3)-O(30)#1	84.6(3)
O(47)-Cd(3)-O(30)#1	92.6(3)
O(45)-Cd(3)-O(48)	84.6(3)
O(18)-Cd(3)-O(48)	86.1(3)
N(9)-Cd(3)-O(48)	85.5(3)
O(47)-Cd(3)-O(48)	177.0(4)
O(30)#1-Cd(3)-O(48)	86.1(3)
O(11)-Cd(4)-N(6)	83.1(3)
O(11)-Cd(4)-O(7)	150.1(3)
N(6)-Cd(4)-O(7)	98.1(3)
O(11)-Cd(4)-O(57)	76.2(3)
N(6)-Cd(4)-O(57)	159.1(3)
O(7)-Cd(4)-O(57)	98.5(3)
O(11)-Cd(4)-O(58)	134.8(3)
N(6)-Cd(4)-O(58)	109.5(3)
O(7)-Cd(4)-O(58)	73.2(3)
O(57)-Cd(4)-O(58)	87.5(3)
O(11)-Cd(4)-O(8)	84.3(3)
N(6)-Cd(4)-O(8)	82.8(3)
O(7)-Cd(4)-O(8)	66.4(3)
O(57)-Cd(4)-O(8)	92.3(3)
O(58)-Cd(4)-O(8)	139.0(3)
O(10)-Cd(5)-O(37)	143.5(3)
O(10)-Cd(5)-O(38)	101.3(3)
O(37)-Cd(5)-O(38)	103.8(3)
O(10)-Cd(5)-O(42)	76.5(3)
O(37)-Cd(5)-O(42)	112.0(3)
O(38)-Cd(5)-O(42)	119.9(3)
O(10)-Cd(5)-O(36)	93.0(3)
O(37)-Cd(5)-O(36)	54.2(2)
O(38)-Cd(5)-O(36)	152.7(3)
O(42)-Cd(5)-O(36)	85.9(3)
O(10)-Cd(5)-O(9)	66.6(3)
O(37)-Cd(5)-O(9)	94.9(3)
O(38)-Cd(5)-O(9)	75.1(3)
O(42)-Cd(5)-O(9)	142.5(3)
O(36)-Cd(5)-O(9)	89.8(3)
O(10)-Cd(5)-O(39)	127.3(3)
O(37)-Cd(5)-O(39)	89.0(3)
O(38)-Cd(5)-O(39)	54.7(3)
O(42)-Cd(5)-O(39)	78.8(3)
O(36)-Cd(5)-O(39)	130.7(3)
O(9)-Cd(5)-O(39)	129.0(3)
O(22)#1-Cd(6)-N(11)#1	83.4(3)
O(22)#1-Cd(6)-O(28)	75.4(3)
N(11)#1-Cd(6)-O(28)	158.5(3)
O(22)#1-Cd(6)-O(2)	149.2(3)
N(11)#1-Cd(6)-O(2)	96.9(3)
O(28)-Cd(6)-O(2)	99.6(3)
O(22)#1-Cd(6)-O(31)	135.6(3)
N(11)#1-Cd(6)-O(31)	109.0(3)
O(28)-Cd(6)-O(31)	89.0(3)
O(2)-Cd(6)-O(31)	73.5(3)
O(22)#1-Cd(6)-O(1)	83.0(3)
N(11)#1-Cd(6)-O(1)	86.1(3)
O(28)-Cd(6)-O(1)	87.9(3)
O(2)-Cd(6)-O(1)	66.3(3)
O(31)-Cd(6)-O(1)	138.6(3)
O(28)-Cd(7)-O(22)#1	75.0(3)
O(28)-Cd(7)-O(25)	108.8(4)
O(22)#1-Cd(7)-O(25)	96.3(3)
O(28)-Cd(7)-O(27)	118.3(3)
O(22)#1-Cd(7)-O(27)	146.0(3)
O(25)-Cd(7)-O(27)	107.0(3)
O(28)-Cd(7)-O(21)#1	142.5(3)
O(22)#1-Cd(7)-O(21)#1	67.6(3)
O(25)-Cd(7)-O(21)#1	79.1(4)
O(27)-Cd(7)-O(21)#1	92.4(3)
O(28)-Cd(7)-O(48)#1	88.6(3)

O(22)#1-Cd(7)-O(48)#1	95.0(3)
O(25)-Cd(7)-O(48)#1	161.1(3)
O(27)-Cd(7)-O(48)#1	56.7(3)
O(21)#1-Cd(7)-O(48)#1	91.4(3)
O(28)-Cd(7)-O(26)	77.6(3)
O(22)#1-Cd(7)-O(26)	127.3(3)
O(25)-Cd(7)-O(26)	52.5(4)
O(27)-Cd(7)-O(26)	86.8(3)
O(21)#1-Cd(7)-O(26)	128.5(3)
O(48)#1-Cd(7)-O(26)	128.4(3)
N(5)-Cd(8)-O(10)	82.3(3)
N(5)-Cd(8)-O(42)	159.7(3)
O(10)-Cd(8)-O(42)	77.6(3)
N(5)-Cd(8)-O(14)	97.3(3)
O(10)-Cd(8)-O(14)	149.6(3)
O(42)-Cd(8)-O(14)	98.6(2)
N(5)-Cd(8)-O(41)	110.3(3)
O(10)-Cd(8)-O(41)	135.8(3)
O(42)-Cd(8)-O(41)	86.5(3)
O(14)-Cd(8)-O(41)	73.0(3)
N(5)-Cd(8)-O(13)	87.4(3)
O(10)-Cd(8)-O(13)	83.1(3)
O(42)-Cd(8)-O(13)	87.3(3)
O(14)-Cd(8)-O(13)	66.5(2)
O(41)-Cd(8)-O(13)	137.6(3)
O(23)-Cd(9)-O(69)	76.7(3)
O(23)-Cd(9)-N(12)	80.8(3)
O(69)-Cd(9)-N(12)	156.7(3)
O(23)-Cd(9)-O(19)	150.5(2)
O(69)-Cd(9)-O(19)	99.3(3)
N(12)-Cd(9)-O(19)	97.3(3)
O(23)-Cd(9)-O(50)#1	136.7(3)
O(69)-Cd(9)-O(50)#1	89.8(3)
N(12)-Cd(9)-O(50)#1	110.9(3)
O(19)-Cd(9)-O(50)#1	71.7(3)
O(23)-Cd(9)-O(20)	85.1(2)
O(69)-Cd(9)-O(20)	88.2(3)
N(12)-Cd(9)-O(20)	83.9(3)
O(19)-Cd(9)-O(20)	65.5(2)
O(50)#1-Cd(9)-O(20)	136.2(3)
O(64)-Cd(10)-O(15)	109.2(3)
O(64)-Cd(10)-O(66)	90.2(3)
O(15)-Cd(10)-O(66)	94.6(3)
O(64)-Cd(10)-N(8)	168.1(3)
O(15)-Cd(10)-N(8)	80.3(3)
O(66)-Cd(10)-N(8)	96.3(3)
O(64)-Cd(10)-O(59)	89.3(3)
O(15)-Cd(10)-O(59)	157.3(3)
O(66)-Cd(10)-O(59)	98.6(3)
N(8)-Cd(10)-O(59)	79.9(3)
O(64)-Cd(10)-O(63)	84.8(3)
O(15)-Cd(10)-O(63)	82.8(3)
O(66)-Cd(10)-O(63)	173.2(3)
N(8)-Cd(10)-O(63)	89.5(3)
O(59)-Cd(10)-O(63)	86.0(3)
O(23)-Cd(11)-O(71)	98.3(3)
O(23)-Cd(11)-O(69)	75.8(2)
O(71)-Cd(11)-O(69)	106.7(3)
O(23)-Cd(11)-O(72)	141.1(3)
O(71)-Cd(11)-O(72)	109.9(3)
O(69)-Cd(11)-O(72)	118.5(3)
O(23)-Cd(11)-O(51)#1	92.7(2)
O(71)-Cd(11)-O(51)#1	163.6(3)
O(69)-Cd(11)-O(51)#1	87.8(3)
O(72)-Cd(11)-O(51)#1	54.9(3)
O(23)-Cd(11)-O(24)	67.4(2)
O(71)-Cd(11)-O(24)	82.0(3)
O(69)-Cd(11)-O(24)	143.1(2)
O(72)-Cd(11)-O(24)	90.0(3)
O(51)#1-Cd(11)-O(24)	91.1(3)
O(23)-Cd(11)-O(70)	133.7(3)
O(71)-Cd(11)-O(70)	53.5(3)
O(69)-Cd(11)-O(70)	79.0(3)
O(72)-Cd(11)-O(70)	85.1(3)
O(51)#1-Cd(11)-O(70)	124.5(3)
O(24)-Cd(11)-O(70)	129.6(3)
O(11)-Cd(12)-O(62)	142.3(3)
O(11)-Cd(12)-O(57)	75.7(3)
O(62)-Cd(12)-O(57)	118.7(3)
O(11)-Cd(12)-O(60)	98.2(3)
O(62)-Cd(12)-O(60)	113.8(3)
O(57)-Cd(12)-O(60)	94.8(3)
O(11)-Cd(12)-O(63)	94.6(3)
O(62)-Cd(12)-O(63)	54.3(3)
O(57)-Cd(12)-O(63)	88.4(3)
O(60)-Cd(12)-O(63)	167.1(3)
O(11)-Cd(12)-O(12)	67.2(3)
O(62)-Cd(12)-O(12)	93.4(3)
O(57)-Cd(12)-O(12)	142.8(3)
O(60)-Cd(12)-O(12)	88.1(3)
O(63)-Cd(12)-O(12)	96.9(3

2: XPS Data for Polystyrene beads loaded with 1

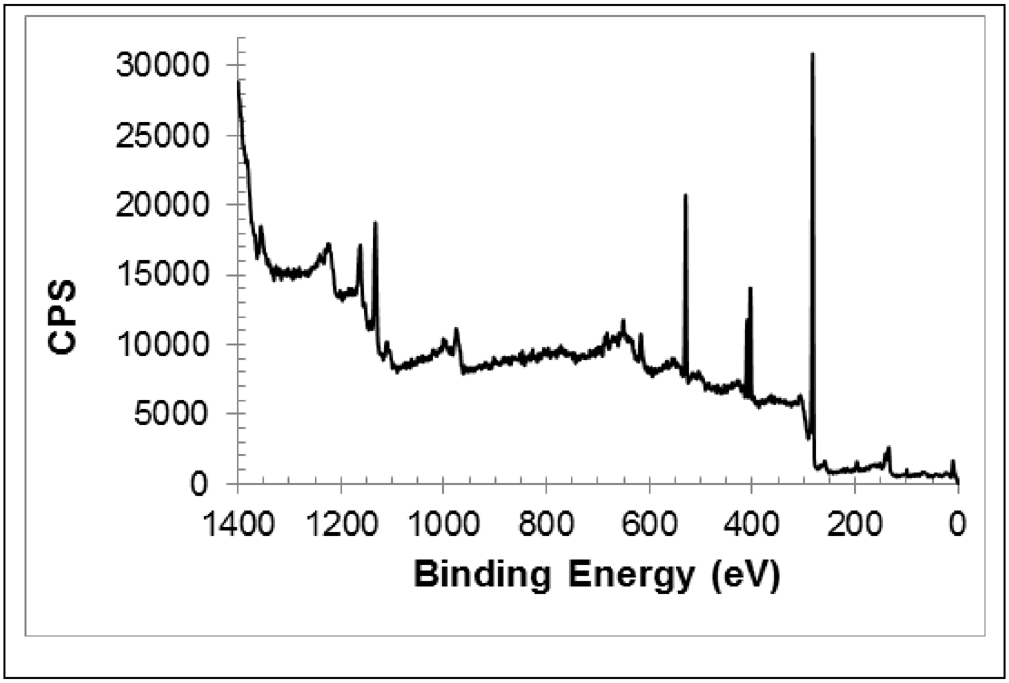

Figure S1: XPS survey scans of beads loaded with **1**

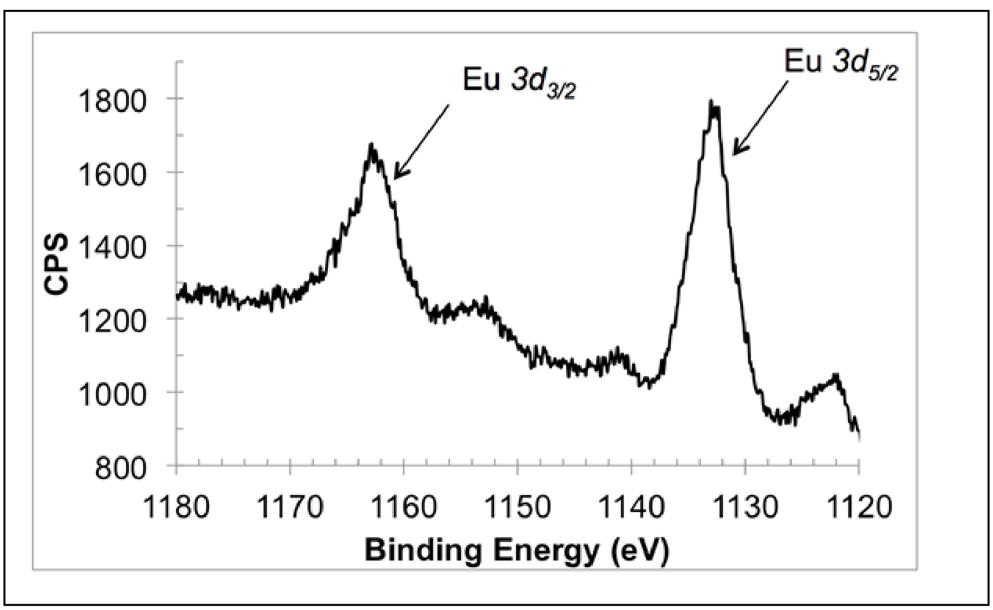

Figure S2:. A closer look at the Eu $3d_{5/2}$ and $3d_{3/2}$ binding energies via XPS.

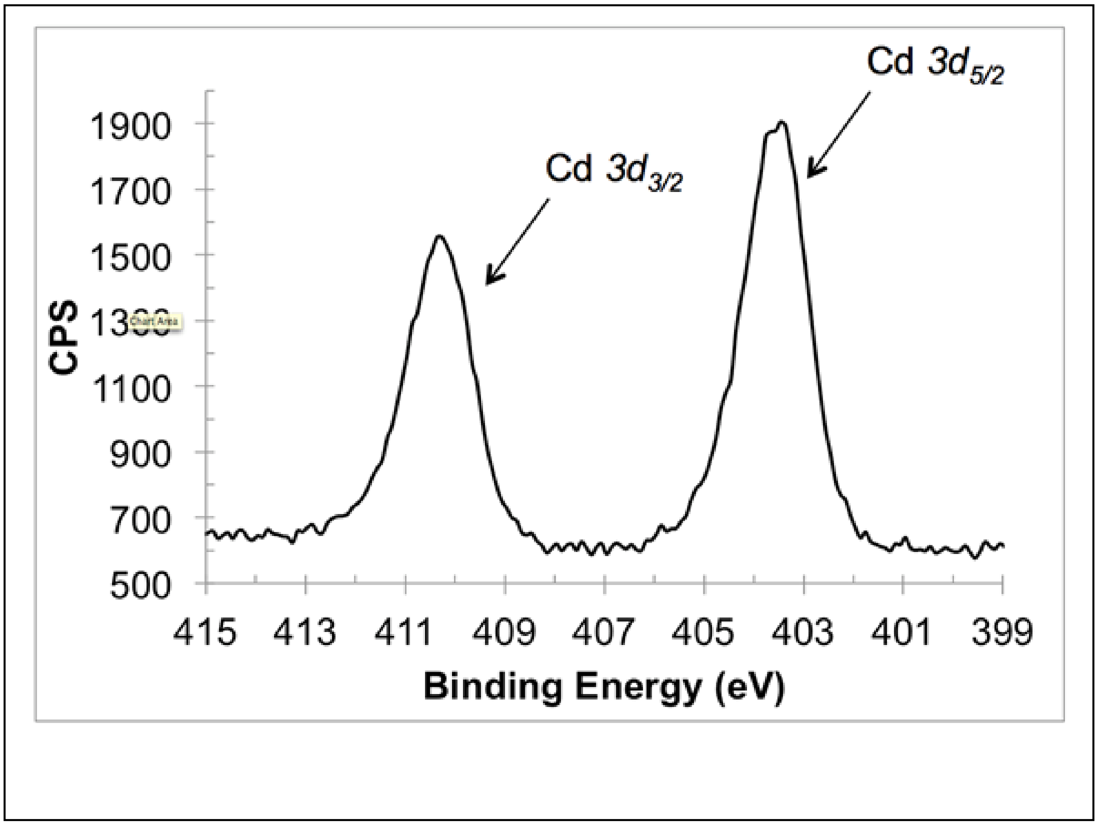

Figure S3: A closer look at the Cd $3d_{5/2}$ and $3d_{3/2}$ binding energies via XPS.

	Eu $3d_{5/2}$	Cd $3d_{5/2}$
Binding Energy (eV)	1132.8	403.5
Percent Composition	23.73	76.27

Table S3: Percent Composition of Eu/Cd in beads

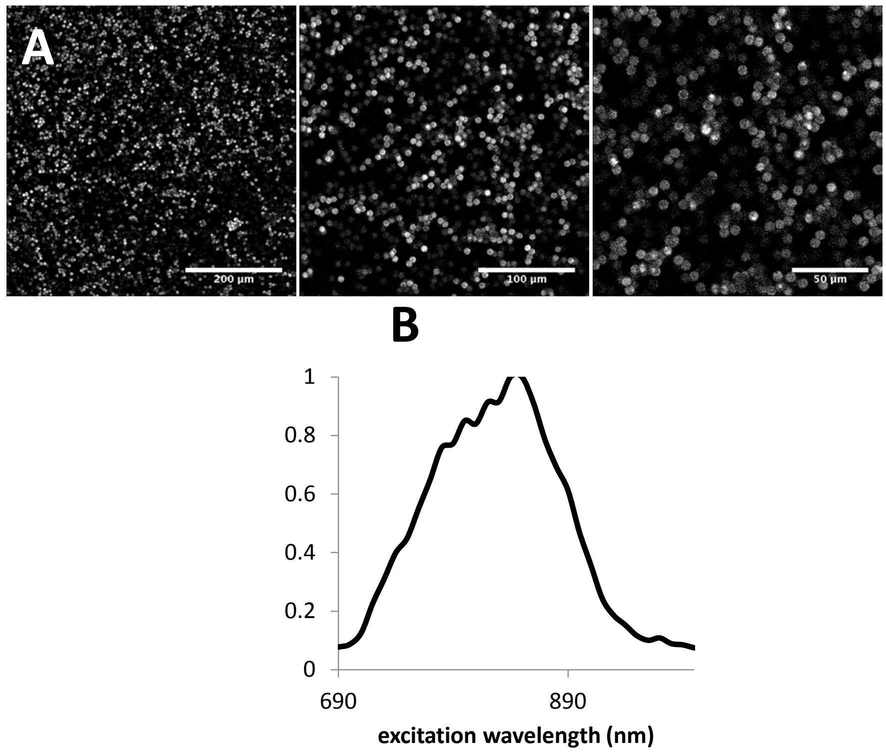

Figure S4: H_2L ligand loaded polystyrene beads imaged by two-photon fluorescence microscopy. (A) Beads were excited at 760 nm, with signal detected in blue emission PMT shown at 20X (left panel), 40X (middle panel), and 63X (right panel) magnification. (B) Two-photon excitation spectra for C6 in visible emission range.

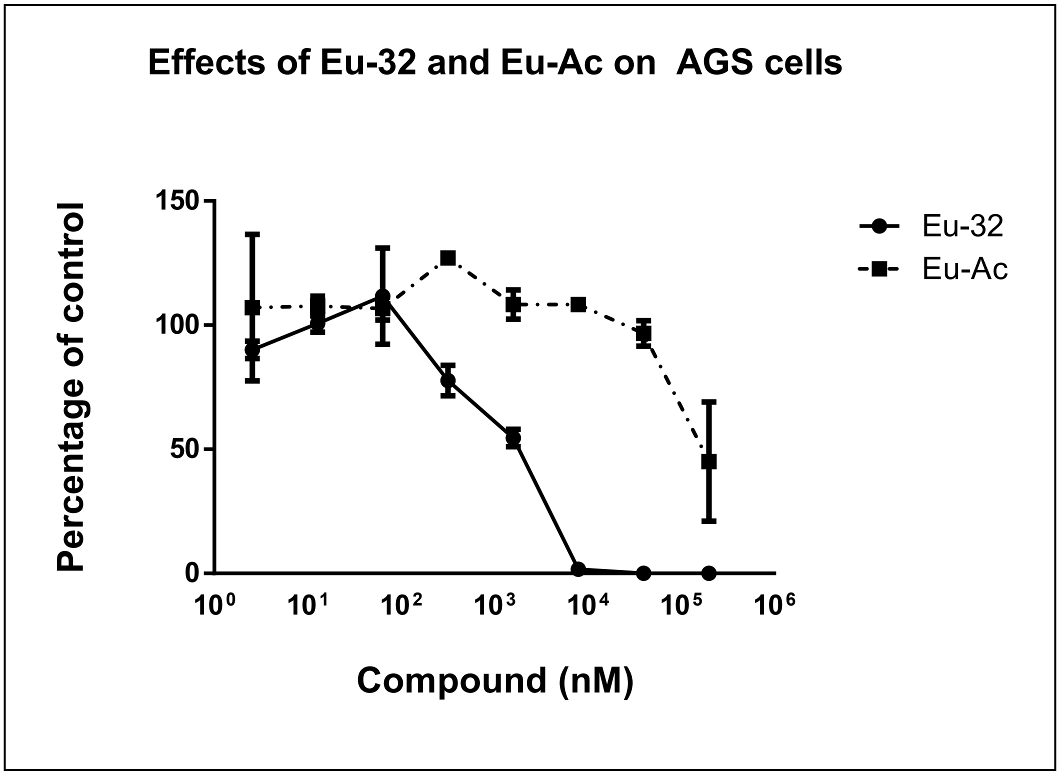

Figure S5: 50% growth inhibition at 2 μM for 1