

Supplementary Information

Speciation of Eu(III) hydroxo complexes in aqueous DMSO studied by direct excitation luminescence spectroscopy and their catalytic activity in phosphodiester cleavage

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Table S1. Fitting parameters obtained by Hyperquad to the model involving reactions (1)-(4).

	[Eu], mM	sigma	chi2	log β_{pq}			
				2-1	1-1	1-2	1-3
1	0.5	12.76		- ^b	-8.08	-16.99	-25.97
2	0.75	17.26	19.38	-5.19	-8.20	-17.83	-27.20
3	1.0	15.25		-4.03	-8.53	-17.27	-26.83
4	1.0	10.98	10.51	-4.99	-9.03	- ^b	-26.70
5	1.0	22.55		-4.80	- ^b	-18.02	-27.40
6 ^a	1.0	11.59	10.15	-4.69	-7.95	-17.74	-25.84
7 ^a	1.0	25.94	22.82	-6.08	-7.95	-17.10	-26.00
8 ^a	1.0	103.8	118.46	- ^b	-8.22	- ^b	-26.14
9	1.25	106.6	111.34	-5.0	-8.5	- ^b	-26.03
10	1.5	68.78	12.4	-5.06	-9.42	- ^b	-24.66
mean				-5.0±0.2	-8.4±0.2	-17.5±0.2	-26.3±0.3

^a Titrations in the presence of 0.01 M CF₃SO₃Na.

^b Negative equilibrium constant was obtained during the iterations.

Table S2. Fitting parameters obtained by Hyperquad to the model involving reactions (1), (5), (6) and (8).

	[Eu], mM	sigma	chi2	log β_{pq}			
				2-1	2-2	2-5	1-3
1	0.5	14.55		- ^b	-12.50	-38.75	- ^b
2	0.75	21.52	25.23	-5.53	-12.89	-40.99	-27.84
3	1.0	24.16		-4.51	-12.81	-40.63	-27.09
4	1.0	22.27		-4.86	-13.91	-41.64	- ^b
5	1.0	9.79	18.5	-4.66	-12.51	-39.22	-26.52
6 ^a	1.0	10.09	19.21	-5.03	-14.25	- ^b	-26.70
7 ^a	1.0	29.26	21.07	-5.00	-12.28	-39.33	-27.00
8 ^a	1.0	91.08	100.2	-5.14	-13.02	-40.90	-26.01
9	1.25	156.3	79.86	-5.3	-13.40	-40.07	-26.70
10	1.5	69.2	12.4	-5.06	-14.19	-38.94	-24.70
mean				-5.0±0.1	-13.2±0.2	-40.0±0.3	-26.6±0.3

^a Titrations in the presence of 0.01 M CF₃SO₃Na.

^b Negative equilibrium constant was obtained during the iterations.