Electronic supplementary information

Table S1

Emission wavelengths employed in this work

	Element	Type	Wavelength (nm)	Element	Type	Wavelength (nm)
Analytes	Ag	I	328.068	Mn	I	403.076
	Al	I	396.152	Mo	I	379.825
	B	I	249.772	Na	I	588.995
	Cd	I	228.802	Ni	I	352.454
	Co	I	340.512	Pb	I	405.781
	Cr	I	425.433	Sn	I	317.505
	Cu	I	324.754	Sr	II	407.721
	Fe	I	371.993	Ti	II	334.941
	K	I	766.491	Tl	I	535.046
	Li	I	670.784	V	I	309.311
	Mg	II	280.270	Y	II	371.029
	Mg	I	285.213	Zn	I	213.857
Molecular band						
	CN	-	388.340 (Cr I 388.327)	CH	-	431.420 (Sc II 431.408)
	C_2	-	473.700 (Fe I 473.677)	OH	-	308.970 (Tb II 308.958)
	N_2^+	-	391.439 (Nb I 391.470)			

Table S2. Central composite design for Cd extraction with DLLME operating chloroform as extractant.

Variables	Levels				
	++	+	0	-	--
NaCl concentration (w v^{-1} %)	8	6	4	2	0
DDTP concentration (w w^{-1} %)	3.3	2.5	2	0.9	0.1
Mass of disperser solvent (mg)	600	500	400	300	200
Mass of extraction solvent (mg)	475	400	325	250	175

Table S3. Cadmium signal response for a CCD design operating DLLME with chloroform. Q_g: 0.3 L min^{-1}; analyte concentration: 0.5 mg L^{-1}.

NaCl (% w w^{-1})	DDTP (% w w^{-1})	Ethanol (mL)	Chloroform (mL)	Integrated signal (counts) ·10 ^{3}
2	2.5	500	400	1440±30
2	2.5	300	250	1200±130
2	2.5	300	400	630±60
8	1.7	400	325	2600±140
6	0.9	300	250	1800±120
4	1.7	400	325	1380±8
6	2.5	300	400	1050±60
4	1.7	200	325	900±40
4	1.7	600	325	2300±190
6	2.5	500	400	1430±20
4	1.7	400	475	1000±50
6	0.9	500	400	1640±30
6	2.5	500	250	2600±170
2	0.9	300	400	900±70
4	1.7	400	175	1340±20
2	0.9	300	250	2025±7
2	2.5	500	250	2900±200
4	3.3	400	325	1600±170
6	0.9	300	400	950±70
4	1.7	400	325	1300±170
2	0.9	500	250	3000±400
4	0.1	400	325	1230±91
0	1.7	400	325	1900±100
2	0.9	500	400	1370±80
6	2.5	300	250	2400±140
6	0.9	500	250	2100±180

Table S4. Central composite design for Cd extraction with DLLME operating the supramolecular solvent as extractant.

Variables	Levels				
	++	+	0	-	--
NaCl concentration (w v^{-1} %)	4	3	2	1	0
DDTP concentration (w w^{-1} %)	3.3	2.5	1.7	0.9	0.1
Mass of THF (mg)	750	600	450	300	150
Mass of 1-decanol (mg)	240	200	160	120	80

Table S5. Cadmium signal response for a CCD design operating DLLME with the supramolecular solvent. Q_g: 0.3 L min^{-1}; analyte concentration: 0.5 mg L^{-1}.

NaCl (% w w^{-1})	DDTP (% w w^{-1})	THF (mL)	1-decanol (mL)	Integrated signal (counts) ·10 ^{3}
1	0.9	600	200	375±2
2	1.7	150	160	482±7
3	0.9	300	120	570±15
2	1.7	450	240	365.7±0.5
1	0.9	300	200	406±1.4
3	2.5	600	200	400±19
3	2.5	300	200	100±2
3	2.5	300	120	500±100
2	3.3	450	160	141±1.5
1	2.5	300	120	530±40
2	1.7	450	80	720±10
4	1.7	450	160	296±9
3	0.9	300	200	360±30
3	0.9	600	200	125±4
2	1.7	750	160	440±20
3	0.9	600	120	360±60
2	0.1	450	160	170±12
1	0.9	300	120	327±6
3	2.5	600	120	250±11
1	0.9	600	120	300±40
1	2.5	600	120	470±50
1	2.5	300	200	380±13
2	1.7	450	160	244±7
0	1.7	450	160	190±30
2	1.7	450	160	240±20
1	2.5	600	200	450±13

Fig. S1. Emission spectra for N_2^+ molecular band (391.439 nm) operating (●) 1.0 w w^{-1} nitric acid, (□) the supramolecular solvent and (○) chloroform. Q_g 0.3 L min^{-1}.

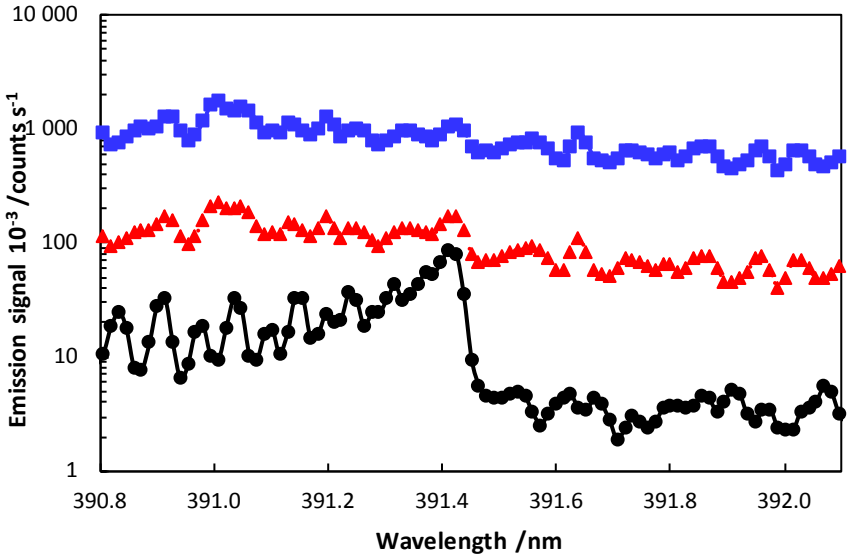

Fig. S2. Pareto charts obtained in the optimization study of the main variables affecting Cd extraction with DLLME for (A) chloroform and (B) the supramolecular solvent. (□) positive effect; (■) negative effect.