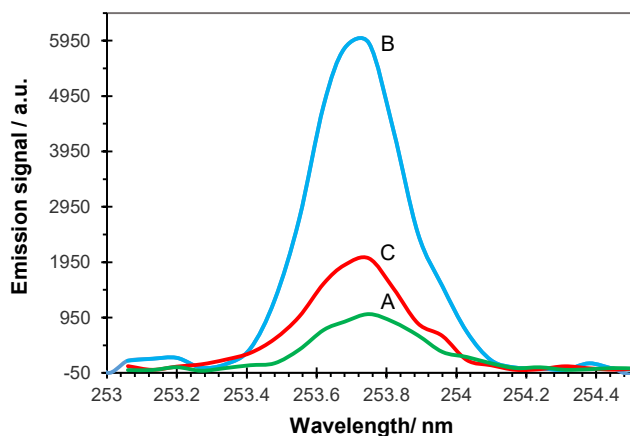


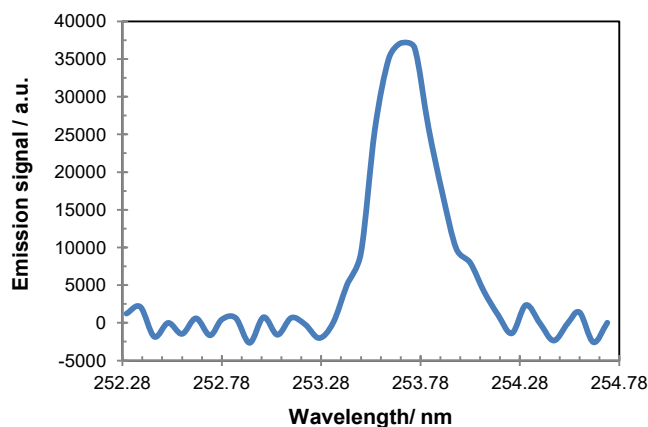
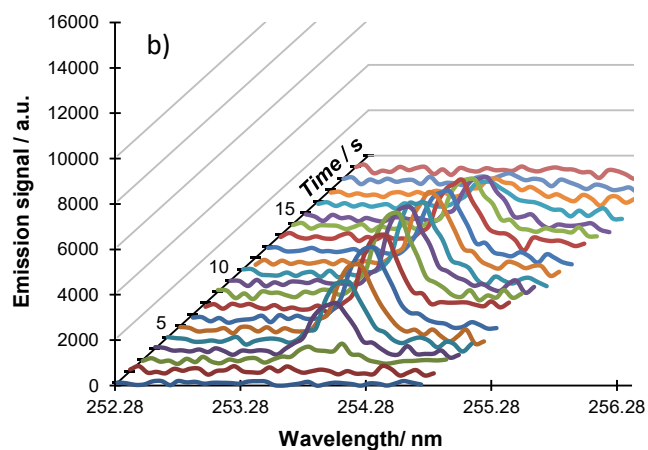
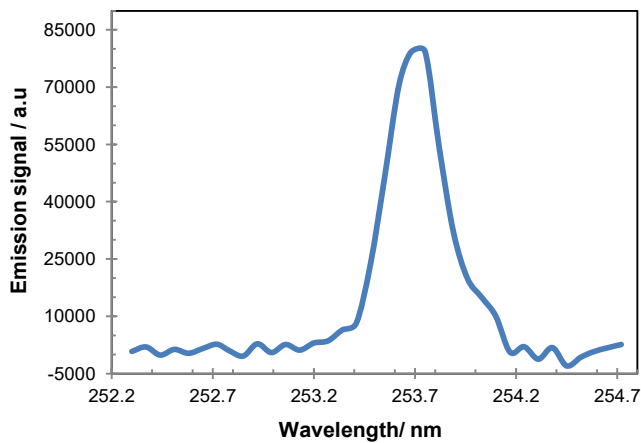
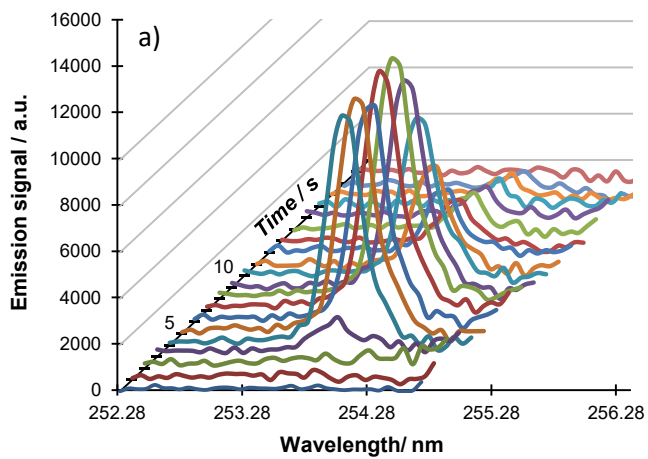
ESI 1. Protocol for the microwave-assisted acid digestion of fish fillet and other foods for Hg determination after derivatization with SnCl₂

Parameter	Step			
	1	2	3	4
Temperature (°C)	170	200	100	100
Hold (min)	15	40	10	10
Power ^a (%)	80	80	0	0

^a 100% corresponds to 1450 W



ESI 2. Emission spectrum of Hg by UV-PVG- μ CCP-OES without preconcentration. Experimental conditions: 15 W plasma power; 100 mL min⁻¹ Ar; 1.6 mm observation height; Hg concentration: A, B—standard solution, 0.2 and 1 ng mL⁻¹ Hg in 0.6 mol L⁻¹ HCOOH; C—0.4 ng mL⁻¹ Hg obtained from 0.2 g ERM-CE464 Tuna fish extracted in 10 mL HCOOH and 250 fold diluted



ESI 3. Episodic emission spectra (20) of Hg and total spectra by UV-PVG- μ CCP-OES with preconcentration. Experimental conditions: 15 W plasma power; 100 mL min^{-1} Ar; 1.6 mm observation height; Hg concentration: a–standard solution, 0.07 ng mL^{-1} Hg in 0.6 mol L^{-1} HCOOH; b– 0.03 ng mL^{-1} Hg obtained from 20 ml ERM-CA615 Groundwater diluted to 25 ml in 0.6 mol L^{-1} HCOOH

Matrix pattern in solution of CRMs and fish fillet/mushroom test samples in the presence of 0.6 mol L⁻¹ HCOOH

	Concomitant concentration												
	(mg L ⁻¹)				(μg L ⁻¹)					(mg l ⁻¹)			
	Na ^a	K ^a	Ca ^a	Mg ^a	Al ^b	Cr ^b	Cu ^b	Fe ^b	Zn ^b	Cl ^{-c}	NO ₃ ^{-c}	SO ₄ ^{2-c}	PO ₄ ^{3-c}
Min	0.1	0.5	0.1	0.1	3	40	2	33	3	-	-	-	-
Max	6.9	5.8	2.3	1.1	30	52	30	117	100	-	-	-	-
Average	1.3	1.6	0.7	0.4	9	46	4	68	30	-	-	-	-
Standard deviation	1.7	1.3	0.5	0.3	10	3	8	25	30	-	-	-	-

Matrix pattern in solution of CRMs and test samples of food of animal and vegetal origin in the presence of 0.6 mol L⁻¹ HCOOH^d

	Concomitant concentration												
	(mg L ⁻¹)				(μg L ⁻¹)					(mg l ⁻¹)			
	Na ^a	K ^a	Ca ^a	Mg ^a	Al ^b	Cr ^b	Cu ^b	Fe ^b	Zn ^b	Cl ^{-c}	NO ₃ ^{-c}	SO ₄ ^{2-c}	PO ₄ ^{3-c}
Min	0.1	0.1	0.1	0.1	3	2	2	2	3	-	-	0.1	0.1
Max	4.2	3.9	26.4	11.3	46	88	82	3190	2765	-	-	2.6	1.0
Average	0.7	1.2	2.1	0.9	8	46	7	215	170	-	-	0.8	0.2
Standard deviation	1.1	1.1	6.0	2.5	12	15	18	720	630	-	-	0.8	0.3

Matrix pattern in CRMs and test water sample in the presence of 0.6 mol L⁻¹ HCOOH^e

	Concomitant concentration												
	(mg L ⁻¹)				(μg L ⁻¹)					(mg L ⁻¹)			
	Na ^a	K ^a	Ca ^a	Mg ^a	Al ^b	Cr ^b	Cu ^b	Fe ^b	Zn ^b	Cl ^{-c}	NO ₃ ^{-c}	SO ₄ ^{2-c}	PO ₄ ^{3-c}
Min	0.3	0.4	13.4	1.6	2	0.4	1	1	1	0.7	0.4	0.3	0.1
Max	645	15	267	202	33	3.4	226	860	40	390	5125	760	2.5
Average	157	5.4	71	37	5	0.8	20	90	7	78	456	84	0.3
Standard deviation	241	5.9	76	67	3	0.8	50	230	12	130	1400	204	0.6

^a – determined by ICP-OES; ^b – determined by ICP-MS; ^c – determined by ion chromatography

^d – vegetable, fruit, brown bread, rice, meat and chicken organs, food supplements

^e – tap water, still, sparkling, river, well and waste water