

## Erratum to: Flame atomic absorption spectrometric determination of trace amounts of Pb(II) and Cr(III) in biological, food and environmental samples after preconcentration by modified nano alumina

Abbas Afkhami · Mohammad Saber-Tehrani ·  
Hasan Bagheri · Tayyebeh Madrakian

Published online: 4 December 2010  
© Springer-Verlag 2010

**Erratum to: Microchim Acta**  
**DOI 10.1007/s00604-010-0478-y**

An error occurred in the legend of Table 1. The correct legend of Table 1 is given below:

**Table 1** Some of the band assignments of the infrared spectra for  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>, DNPH- $\gamma$ -Al<sub>2</sub>O<sub>3</sub> and metal loaded DNPH- $\gamma$ -Al<sub>2</sub>O<sub>3</sub>

An error occurred in Tables 4 and 5. The corrected tables are given on the next pages.

Tables 4 and 5 should be as follow:

---

The online version of the original article can be found at <http://dx.doi.org/10.1007/s00604-010-0478-y>.

---

A. Afkhami (✉) · T. Madrakian  
Faculty of Chemistry, Bu-Ali Sina University,  
Hamedan, Iran  
e-mail: afkhami@basu.ac.ir

M. Saber-Tehrani · H. Bagheri  
Department of Chemistry, Islamic Azad University, Science and  
Research Branch,  
P. O. Box 1415-775, Tehran, Iran

**Table 4** Analytical results for the determination of Pb(II) and Cr(III) in real samples

Sample	Analyte	Added ( $\mu\text{g L}^{-1}$ ) <sup>a</sup>	Found ( $\mu\text{g L}^{-1}$ )	Recovery(%)
Tap water	Pb(II)	0	$7.9 \pm 0.3$	–
		5	$12.8 \pm 0.2$	98
		10	$18 \pm 0.15$	101
	Cr(III)	0	ND <sup>b</sup>	–
		5	$5.1 \pm 0.1$	102
		10	$10.1 \pm 0.2$	101
Mineral water	Pb(II)	0	$9.1 \pm 0.2$	–
		5	$14.1 \pm 0.1$	102
		10	$19.1 \pm 0.1$	100
	Cr(III)	0	ND	–
		5	$5.2 \pm 0.2$	104
		10	$9.97 \pm 0.3$	99.7
Wastewater	Pb(II)	0	$35.5 \pm 0.4$	–
		10	$45.7 \pm 0.2$	102
		20	$55.6 \pm 0.3$	100.5
	Cr(III)	0	$5.8 \pm 0.2$	–
		10	$15.7 \pm 0.1$	99
		20	$26 \pm 0.2$	101
Rice	Pb(II)	0	$18.9 \pm 0.4$	–
		20	$39.3 \pm 0.3$	102
	Cr(III)	0	ND	–
Urine (1)	Pb(II)	20	$20.7 \pm 0.1$	103.5
		0	ND	–
	Cr(III)	40	$40.1 \pm 0.1$	100.2
Urine (2)	Pb(II)	0	ND	–
		40	$40.5 \pm 0.2$	101.2
	Cr(III)	40	$40.3 \pm 0.1$	100.8
Urine (3)	Pb(II)	0	ND	–
		40	$40.9 \pm 0.1$	102.2
	Cr(III)	40	$40.4 \pm 0.2$	101
		0	ND	–
		40	$40.3 \pm 0.1$	100.7

<sup>a</sup> Average of three determination  $\pm$  standard deviation

<sup>b</sup> Not detected

**Table 5** Comparative data from some recent papers on solid-phase extraction

Method <sup>a</sup>	Ions	Enrichment factor	Detection limit ( $\mu\text{g L}^{-1}$ )	Linear range ( $\mu\text{g L}^{-1}$ )	Adsorption capacity( $\text{mg g}^{-1}$ )	Ref
Dz-SDS-coated alumina-FAAS	Pb(II)	200	NA	10–120	NA	[3]
Nanometer $\text{TiO}_2$ -DZ-ICP-AES	Pb(II)	33.3	1.72	NA	22.5	[6]
	Cr(III)		0.38		5.8	
MMWCN-FAAS	Pb(II)	120	0.32	0.83–15000	9.3	[11]
	Ni(II)		0.17	0.83–10000	1.5	
	Cd(II)		0.04	0.17–3000	1	
HPAPyr-XAD-2-FAAS	Pb(II)	333.3	2.8	3–1000	5.35	[14]
	Cu(II)	285.7	2.0	10–1000	4.70	
	Zn(II)	250.0	3.3	10–1250	3.80	
	Cd(II)	300.0	0.9	2–1250	3.95	
Amberlite XAD-7-FAAS	Pb(II)	60	18.6	NA	NA	[15]
	Cr(III)		3.27			
	Fe(III)		3.07			
Bismuthiol-II-immobilized magnetic nanoparticles-ICP-AES	Cr(III)	96	0.043	NA	8.6	[21]
	Cu(II)	95	0.058		5.3	
	Pb(II)	87	0.085		9.4	
MTTZ-MSU-2 mesoporous silica-FAAS	Pb(II)	200	0.46	3.7-NA	2.15	[25]
Amberite XAD-2000-DPC-GFAAS	Pb(II)	100	0.51	NA	NA	[28]
	Cr(III)	50	0.81			
	Fe(III)	50	0.32			
Solid sulfur-FAAS	Pb(II)	250	3.2	10–300	0.0156	[29]
	Cd(II)		0.2	1–20	0.0034	
MWCN-ICP-AES	Pb(II)	44.2	2.6	8.6–775	NA	[60]
Diaion SP-850 resin-FAAS	Pb(II)	50	0.5	NA	NA	[61]
	Cr(III)		0.65			
	Mn(II)		0.42			
	Fe(III)		0.28			
	Co(II)		0.73			
	Cu(II)		0.3			
SDS-PVC-BHABDI-FAAS	Pb(II)	50	0.29	30–800	2.2	[62]
	Cr(III)		0.28	20–800	2.1	
	Cd(II)		0.37	10–700	2.8	
	Cu(II)		0.27	10–800	2.6	
	Co(II)		0.30	20–800	2.3	
	Fe(III)		0.28	30–800	2.1	
	Zn(II)		0.39	10–800	2.4	
Modified nanometer $\text{SiO}_2$ -ICP-AES	Pb(II)	37.5	1.79	NA	6.0	[63]
	Cr(III)		0.79		6.2	
	Cu(II)		1.27		18.6	
	Fe(III)		0.40		4.7	
Poly(etheretherketone)-FI-FAAS	Pb(II)	110	0.32	3.6–300	NA	[64]
DNPH-nano- $\gamma$ - $\text{Al}_2\text{O}_3$ -FAAS	Pb(II)	266.7	0.43	1.2–350	100	This work
	Cr(III)		0.55	2.4–520	100	

<sup>a</sup> Dz dithizone; MMWCN modified multi-walled carbon nanotubes; HPAPyr 4'-(2-Hydroxyphenylazo)-3'-Methyl-1'-Phenyl-2'-Pyrazolin-5'-one; MTTZ 5-mercapto-1-methyltetrazole; DPC diphenylcarbazide; SDS-PVC-BHABDI Sodium dodecyl sulfate coated poly(vinyl)chloride modified with bis(2-hydroxyacetophenone)-1,4-butanediimine; NA not available