

Supplementary material

Quantification of Metal(loid)s in Lubricating Eye Drops Used in the Treatment of Dry Eye Disease

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Table S1. Statistical test used in view of the results of the Table 2 on concentration of quantified metal(loid)s in lubricating eye drops.

Element	Eye drops 1*	Eye drops 2*	Eye drops 3*	Eye drops 4*	Eye drops 5*	Eye drops 6*	Eye drops 7*
Al	a	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
As	a	b	ac	acd	acde	acdef	adg
Ba	a	ab	c	bd	bde	bdef	abdefg
Cd	a	ab	abc	ad	acde	acdef	abcdefg
Co	a	ab	abc	bcd	e	abcdf	abcdfg
Cr	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Cu	a	ab	abc	abcd	abde	abcdef	abdefg
Fe	a	< LOD	ac	< LOD	< LOD	df	< LOD
Mg	a	ab	abc	< LOD	e	< LOD	g
Mn	a	ab	bc	cd	cde	cdef	cdefg
Mo	a	b	ac	d	acde	acdef	acefg
Ni	a	b	c	cd	cde	cdef	ag
Pb	< LOD	b	< LOD	< LOD	< LOD	< LOD	< LOD
Se	a	b	ac	acd	acde	acdef	acdeg
V	a	ab	abc	acd	bce	acdf	abcdeg
Zn	a	b	c	d	e	cdf	cdg
Element	Eye drops 8*	Eye drops 9*	Eye drops 10*	Eye drops 11*	Eye drops 12*	Eye drops 13*	
Al	< LOD	< LOD	< LOD	< LOD	l	m	
As	h	hi	bhij	gk	bkl	bklm	
Ba	abgh	ahi	abdfghj	abdefgjk	abdefgjkl	abdefgijklm	
Cd	abcdefgh	abcfghi	abcdefghij	adefghk	abcdefghijkl	abdefghijklm	
Co	abcdfgh	abcfghi	abcdfghij	abcdfghijk	abcdfghijkl	abcdfghijklm	
Cr	< LOD	i	< LOD	ik	< LOD	< LOD	
Cu	abcdefgh	abcfghi	abcdefghij	abdefghijk	abdefghijkl	abdefghijklm	
Fe	dfh	< LOD	< LOD	< LOD	l	m	
Mg	abch	i	abchj	gk	gkl	abchjm	

Mn	abh	abhi	abcfgj	cdefgjk	abcdfgjkl	abchijlm
Mo	bh	bhi	bhij	acgk	acgkl	acefgklm
Ni	h	bhi	bhij	agk	bgikl	bgklm
Pb	bh	bi	bhij	hk	bhkl	bhklm
Se	bh	i	bhj	acdegk	bhjl	bhjklm
V	abcdefgh	i	abcdefghj	abcdefghjk	l	elm
Zn	h	cdgi	j	k	dl	m
Element	Eye drops 14*	Eye drops 15**	Eye drops 16**	Eye drops 17**	Eye drops 18**	Eye drops 19**
Al	an	ano	< LOD	< LOD	r	< LOD
As	gklmn	acdefo	bijp	adgknq	r	gknqs
Ba	bdefgijklmn	bdefgikmno	cp	q	bdefgijklmnor	ahis
Cd	defgkmn	abcdefghijklmo	abcdefghijklmnp	adefgklmnpq	abcdefghijklmnopqr	adefghijklmnopqrs
Co	abdefgijklmn	abdefghijklmno	abdefghijklmnop	abdefghijklmnopq	abdefghijklmnopqr	abdefghijklmnopqrs
Cr	< LOD	< LOD	< LOD	< LOD	< LOD	s
Cu	abdefghijklmn	abdefghijklmno	abdefghijklmnop	abcfhiq	abdefghijklmnopqr	abdefghijklmnoprs
Fe	< LOD	o	< LOD	< LOD	mr	dfhos
Mg	abchjmn	abchjmno	< LOD	< LOD	abchjmnor	< LOD
Mn	cdefgklmn	cdefgiklno	cdefgknop	cdefgklmnopq	abchijlmnr	cdefgklmnopqs
Mo	acdefgkmn	defno	acefklmnop	defgnoq	defoqr	acdefgmnopqrs
Ni	acefn	cefno	adgknp	cdefnoq	acdefnoqr	cdefnoqrs
Pb	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Se	bcdgklmn	acdefgkno	ip	abcdgklmnoq	fr	bhjklmnqs
V	abcdfhjkn	abcdfghjkno	abcdfhjknop	abcdfhjknopq	abcdeghjkor	abcdfhjknopqs
Zn	en	o	op	opq	enr	s

Notes: * With preservative; ** without preservative; < LOD - Analyte concentrations were below detection limits; different letters on the same line represent statistical differences between samples ($p < 0.05$) by one-way ANOVA with post hoc Tukey's test; P value in the line referring to the comparisons between the concentrations of lubricating eye drops for the elements Al, As, Ba, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, V and Zn ($p < 0.0001$), Cr and Mg ($p = 0.0001$).

Table S2. Statistical test used in view of the results of the Table 3 on values of daily instillation of lubricating eye drops.

Element	Eye drops 1*	Eye drops 2*	Eye drops 3*	Eye drops 4*	Eye drops 5*	Eye drops 6*	Eye drops 7*
Al	a	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
As	a	b	c	ad	ade	acdef	g
Ba	a	b	ac	bd	abde	bdef	acg
Cd	a	ab	c	d	ae	abf	eg
Co	a	ab	abc	abcd	de	abcdf	abcdfg
Cr	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Cu	a	ab	abc	abcd	abcde	abcdef	abcdefg
Fe	a	< LOD	c	< LOD	< LOD	f	< LOD
Mg	a	ab	abc	< LOD	e	< LOD	g
Mn	a	b	c	cd	cde	cdef	befg
Mo	a	b	c	cd	ae	aef	bg
Ni	a	b	c	cd	cde	cdef	bg
Pb	< LOD	b	< LOD	< LOD	< LOD	< LOD	< LOD
Se	a	ab	c	ad	ae	adf	beg
V	a	ab	abc	abcd	e	abcdf	eg
Zn	a	b	c	cd	cde	f	bg
Element	Eye drops 8*	Eye drops 9*	Eye drops 10*	Eye drops 11*	Eye drops 12*	Eye drops 13*	
Al	< LOD	< LOD	< LOD	< LOD	l	m	
As	h	i	hj	bgk	il	ilm	
Ba	acgh	acghi	hij	abcefgk	hijl	acghijm	
Cd	aegh	aefghi	j	abfik	jl	jlm	
Co	abcfgh	abcfghi	abcfghij	abcdfghijk	abcfghijkl	abcdfghijklm	
Cr	< LOD	i	< LOD	ik	< LOD	< LOD	
Cu	abcdefgh	abcdefghi	abcdefghij	abcdefgjk	abcdefghijkl	abcdefghijklm	
Fe	fh	< LOD	< LOD	< LOD	l	m	
Mg	abch	i	abchj	gk	l	abchjm	
Mn	ah	ahi	hij	bcdefgk	ahijl	hjlm	
Mo	h	hi	j	abgk	hil	bghim	

Ni	h	gi	j	bgk	hl	him
Pb	bh	bi	bij	bhk	bhkl	bhkml
Se	h	hi	j	begk	jl	ilm
V	abcdfgh	i	abcdefghj	abcdefghjk	il	m
Zn	h	fi	hj	k	fil	m
Element	Eye drops 14*	Eye drops 15**	Eye drops 16**	Eye drops 17**	Eye drops 18**	Eye drops 19**
	an	ano	< LOD	< LOD	mr	< LOD
As	bgkn	adefo	adefop	cq	qr	fqs
Ba	abcefgkln	abdefkno	bdfp	abcefgknoq	dpr	prs
Cd	abefhikn	aeghino	p	pq	cr	pqs
Co	abcdfghkmn	abcd,fghijklmno	acdfkmnp	cdfmnpq	abcdfghijklmnopqr	abcdfgkmlnopqrs
Cr	< LOD	< LOD	< LOD	< LOD	< LOD	s
Cu	bcdefgijklmn	abcdefgijklmno	bcdefgijklmnop	abcdefghijklmnopq	abcdefghijklmnopqr	bcdefgijklmnopqrs
Fe	< LOD	co	< LOD	< LOD	r	fhs
Mg	abchjmn	abchjmno	< LOD	< LOD	abchjmnor	< LOD
Mn	bfgkn	bcdefgkno	p	pq	bcdefgknor	cpqs
Mo	abegkn	aefo	p	pq	cdpr	pqs
Ni	an	cdefo	cdfp	cdpq	cdefopr	cdpqs
Pb	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Se	ghkn	abeko	cp	q	cpqr	pqrs
V	abcdfh	abcdfhjkno	abcdfnop	abcdfnopq	abcdfghjknor	abcdfnopqs
Zn	cden	o	p	pq	or	fils

Notes: * With preservative; ** without preservative; < LOD - Analyte concentrations were below detection limits; different letters on the same line represent statistical differences between samples ($p < 0.05$) by one-way ANOVA with post hoc Tukey's test; P value in the line referring to comparisons between daily exposures by instillation of lubricating eye drops for the elements Al, As, Ba, Cd, Co, Fe, Mg, Mn, Mo, Ni, Se, V and Zn ($p < 0.0001$), Cr ($p = 0.0062$), Fe ($p = 0.0002$) and Pb ($p = 0.0001$).