

SUPPLEMENT

Table S1. Primers used for real-time PCR. Primers used for gene expression analysis, sequence designed for human ZnTs and ZiPs using Primer 3.0 software

Sequence name	Primer	Supplement references [SR]
ZnT1F	TGTGAACTTGCCTGCAGAAC	this study
ZnT1R	TGGGGTCTTTTCTGCATCCT	this study
ZnT2F	TGTCCTAGTGGCAGCCTATATT	[1]
ZnT2R	TCACATCTCTCAGGATGGTCAA	[1]
ZnT3F	CACCCTCCGAGACGTTCTTC	[2]
ZnT3R	GGCACCGACAACAGCGTAT	[2]
ZnT4F	TGACCTAAGCGCCATCATACT	[1]
ZnT4R	AGCTGACAAAACCTCTAAGCG	[1]
ZnT5F	GGAGGCATGAATGCTAACATGAGG	[3]
ZnT5R	GTGGATACGATCACACCAATGCTG	[3]
ZnT6F	CCTCAACATACAGGCCAAGC	this study
ZnT6R	TGGTGTTAGGCTGTGGTTCA	this study
ZnT7F	TTTCTTCCTGTGCCTGAACCTCTC	[3]
ZnT7R	GAGTCGGAAATCAAGCCTAAGCAG	[3]
ZnT8F	GATCCAGGCGACTGTGATGAT	[1]
ZnT8R	TGGCTTGTACTTCCTTGTGATTG	[1]
ZnT9F	AGCCTAGGTTCTTTGGGTGT	this study
ZnT9R	ACTTGTTCTGGCTGGATGGA	this study
ZnT10F	GCTGTGCCTGGAATTAGCAGT	[1]
ZnT10R	ATGTGCAGGGTGGCAATAATC	[1]
ZIP1F	TAAGGACAGGCTCACATGGG	this study
ZIP1R	GCTAGGACCAACAGGACACT	this study
ZIP2F	CTCACGATGGGCAGTGTTCCTC	[4]
ZIP2R	ATGAAGGCAAAACCAGCGGC	[4]
ZIP3F	CTGCTGGGCTTCTTCATGAC	this study
ZIP3R	GTTGAAGGTCTCCAGGTCGA	this study
ZIP4F	ATGTCAGGAGCGGGTCTTGC	[5]

ZIP4R	GCTGCTGTGCTGCTGGAAC	[5]
ZIP5F	GGGGCTGTCAGTGCTCGGAG	[6]
ZIP5R	TCCGGATCCAAGTTGCGTGTT	[6]
ZIP6F	AGTTTCCTGTCTCTGCTGGG	this study
ZIP6R	CACCACTCAAAGTCCCAACG	this study
ZIP7F	AAGATTAGTGTCCCAGGGCC	this study
ZIP7R	CCGCTCTCCCATTCCTTAA	this study
ZIP8F	TGCTACCCAAATAACCAGCTCC	[6]
ZIP8R	ACAGGAATCCATATCCCCAAACT	[6]
ZIP9F	TCAACTTTGCTGCTGAACCC	this study
ZIP9R	AGTCCCAGCAAACCTCTCCTC	this study
ZIP10F	CACAGTCACCAACATGCACA	this study
ZIP10R	TGCCTCCTAGAGCAACAA	this study
ZIP11F	CGGCATCTGCTACCTTTGAGAG	[7]
ZIP11R	ATGATGTCGTCCATGACCACG	[7]
ZIP12F	TTTCCTGGGATCAGACCTGCT	[6]
ZIP12R	GTTGGTCCTTGGGTAAAGTGGC	[6]
ZIP13F	TCTGAAAACATCCACGGTGA	this study
ZIP13R	AGCCATAATCCCCAACCATT	this study
ZIP14F	TTTGACCTCCTCTTCCCCAC	this study
ZIP14R	GCAGTCTCCCCTCTAACACA	this study
MT-F	ATGGACCCCAACTGCTCCTGC	this study
MT-R	GGCACAGCAGCTGCACTTCTC	this study
GAPDH-F	AATCCCATCACCATCTTCCA	this study
GAPDH-R	TGGACTCCACGACGTACTCA	this study
B-actin-F	TCCCTGGAGAAGAGCTACGA	this study
B-actin-R	AGCACTGTGTTGGCGTACAG	this study

Table S2. Zinc levels in cells were estimated using zinquin dye, zinc specific fluorochrome, comparing with zinc-zinquin standard curve. Cells were incubated with 10 μ M zinquin for 30 min and washed with PBS to remove extracellular dye. Cells (5×10^6 /ml) were resuspended in PBS, fluorescence was measured at an excitation wavelength of 370 nm and emission wave length 490 nm. The values represent mean \pm SE ($n = 3$). Values with different superscripts indicate significance of differences at $p < 0.05$. Significance of differences between treated and control samples was analysed using Analysis of variance (ANOVA) with post hoc multiple comparison by Dunnett's t -test

S. No	Specific cells	Control	Zinc	Zinc depletion
1	THP-1 monocytes	1.97 \pm 0.103 nM	7.92 \pm 0.10 nM	0.94 \pm 0.06 nM
2	RD muscle	5.78 \pm 0.3 nM	13. 5 \pm 0.44 nM	3.98 \pm 0.45 nM

Table S3. Zinc transporter expression levels in response to exogenous zinc and zinc depletion

Gene	Zinc supplementation		Zinc depletion	
	THP-1	RD	THP-1	RD
<i>MT</i>	24 \uparrow	25 \uparrow	1.8 \downarrow	0.58 \downarrow
<i>ZnT1</i>	4 \uparrow	5 \uparrow	0.1 \downarrow	0.3 \downarrow
<i>ZnT5</i>			0.5 \downarrow	1.9 \uparrow
<i>ZnT6</i>			0.4 \downarrow	
<i>ZIP6</i>				1.5 \uparrow
<i>ZIP10</i>		0.3 \downarrow	4.7 \uparrow	2.5 \uparrow
<i>ZIP13</i>			0.3 \downarrow	1.7 \uparrow
<i>ZIP14</i>			4.9 \uparrow	

Notes. \uparrow – Upregulated; \downarrow – down regulated.

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