

Toxic & Essential Elements; Hair

TOXIC METALS			
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)	15	< 7.0	
Antimony (Sb)	0.10	< 0.066	
Arsenic (As)	0.12	< 0.080	
Barium (Ba)	2.4	< 1.0	
Beryllium (Be)	< 0.01	< 0.020	
Bismuth (Bi)	0.081	< 2.0	
Cadmium (Cd)	1.1	< 0.065	
Lead (Pb)	32	< 0.80	
Mercury (Hg)	0.47	< 0.80	
Platinum (Pt)	< 0.003	< 0.005	
Thallium (Tl)	< 0.001	< 0.002	
Thorium (Th)	0.002	< 0.002	
Uranium (U)	0.064	< 0.060	
Nickel (Ni)	0.18	< 0.20	
Silver (Ag)	0.32	< 0.08	
Tin (Sn)	0.24	< 0.30	
Titanium (Ti)	1.0	< 0.60	
Total Toxic Representation			

ESSENTIAL AND OTHER ELEMENTS					
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 2.5 th 16 th 50 th 84 th 97.5 th		
Calcium (Ca)	336	200- 750			
Magnesium (Mg)	58	25- 75			
Sodium (Na)	38	20- 180			
Potassium (K)	25	9- 80			
Copper (Cu)	22	11- 30			
Zinc (Zn)	130	130- 200			
Manganese (Mn)	1.4	0.08- 0.50			
Chromium (Cr)	0.53	0.40- 0.70			
Vanadium (V)	0.17	0.018- 0.065			
Molybdenum (Mo)	0.045	0.025- 0.060			
Boron (B)	0.93	0.40- 3.0			
Iodine (I)	3.7	0.25- 1.8			
Lithium (Li)	0.009	0.007- 0.020			
Phosphorus (P)	181	150- 220			
Selenium (Se)	0.82	0.70- 1.2			
Strontium (Sr)	1.1	0.30- 3.5			
Sulfur (S)	46700	44000- 50000			
Cobalt (Co)	0.030	0.004- 0.020			
Iron (Fe)	27	7.0- 16			
Germanium (Ge)	0.026	0.030- 0.040			
Rubidium (Rb)	0.044	0.011- 0.12			
Zirconium (Zr)	0.11	0.020- 0.44			

SPECIMEN DATA		RATIOS		
COMMENTS: results checked		ELEMENTS	RATIOS	RANGE
Date Collected: 10/31/2013	Sample Size: 0.202 g	Ca/Mg	5.79	4- 30
Date Received: 11/04/2013	Sample Type: Head	Ca/P	1.86	0.8- 8
Date Completed: 11/09/2013	Hair Color: Brown	Na/K	1.52	0.5- 10
Methodology: ICP/MS	Treatment:	Zn/Cu	5.91	4- 20
	Shampoo: Dr Bronners	Zn/Cd	118	> 800

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TOXIC METALS			
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)	5.6	< 7.0	
Antimony (Sb)	0.033	< 0.050	
Arsenic (As)	0.048	< 0.060	
Barium (Ba)	1.5	< 2.0	
Beryllium (Be)	< 0.01	< 0.020	
Bismuth (Bi)	0.051	< 2.0	
Cadmium (Cd)	0.091	< 0.050	
Lead (Pb)	2.1	< 0.60	
Mercury (Hg)	0.48	< 0.80	
Platinum (Pt)	< 0.003	< 0.005	
Thallium (Tl)	< 0.001	< 0.002	
Thorium (Th)	< 0.001	< 0.002	
Uranium (U)	0.052	< 0.060	
Nickel (Ni)	0.19	< 0.30	
Silver (Ag)	0.36	< 0.15	
Tin (Sn)	0.16	< 0.30	
Titanium (Ti)	0.51	< 0.70	
Total Toxic Representation			

ESSENTIAL AND OTHER ELEMENTS					
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 2.5 th 16 th 50 th 84 th 97.5 th		
Calcium (Ca)	290	300- 1200			
Magnesium (Mg)	67	35- 120			
Sodium (Na)	17	20- 250			
Potassium (K)	7	8- 75			
Copper (Cu)	23	11- 37			
Zinc (Zn)	130	140- 220			
Manganese (Mn)	0.61	0.08- 0.60			
Chromium (Cr)	0.45	0.40- 0.65			
Vanadium (V)	0.17	0.018- 0.065			
Molybdenum (Mo)	0.040	0.020- 0.050			
Boron (B)	0.47	0.25- 1.5			
Iodine (I)	0.82	0.25- 1.8			
Lithium (Li)	0.004	0.007- 0.020			
Phosphorus (P)	175	150- 220			
Selenium (Se)	0.63	0.55- 1.1			
Strontium (Sr)	1.5	0.50- 7.6			
Sulfur (S)	47100	44000- 50000			
Cobalt (Co)	0.014	0.005- 0.040			
Iron (Fe)	12	7.0- 16			
Germanium (Ge)	0.025	0.030- 0.040			
Rubidium (Rb)	0.017	0.007- 0.096			
Zirconium (Zr)	0.27	0.020- 0.42			

SPECIMEN DATA		RATIOS		
COMMENTS:		ELEMENTS	RATIOS	RANGE
Date Collected: 10/31/2013	Sample Size: 0.203 g	Ca/Mg	4.33	4- 30
Date Received: 11/04/2013	Sample Type: Head	Ca/P	1.66	1- 12
Date Completed: 11/07/2013	Hair Color: Brown	Na/K	2.43	0.5- 10
Methodology: ICP/MS	Treatment:	Zn/Cu	5.65	4- 20
	Shampoo: Alba	Zn/Cd	> 999	> 800



LAB #:

nzug Male
AGE: 10

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TOXIC METALS			
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)	10	< 8.0	
Antimony (Sb)	0.029	< 0.066	
Arsenic (As)	0.064	< 0.080	
Barium (Ba)	1.3	< 0.75	
Beryllium (Be)	< 0.01	< 0.020	
Bismuth (Bi)	0.023	< 2.0	
Cadmium (Cd)	0.17	< 0.070	
Lead (Pb)	4.3	< 1.0	
Mercury (Hg)	0.54	< 0.40	
Platinum (Pt)	< 0.003	< 0.005	
Thallium (Tl)	< 0.001	< 0.002	
Thorium (Th)	0.001	< 0.002	
Uranium (U)	0.041	< 0.060	
Nickel (Ni)	0.26	< 0.20	
Silver (Ag)	0.25	< 0.14	
Tin (Sn)	0.21	< 0.30	
Titanium (Ti)	0.51	< 0.70	
Total Toxic Representation			

ESSENTIAL AND OTHER ELEMENTS					
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 2.5 th 16 th 50 th 84 th 97.5 th		
Calcium (Ca)	222	160- 500			
Magnesium (Mg)	45	12- 50			
Sodium (Na)	16	20- 200			
Potassium (K)	10	12- 140			
Copper (Cu)	27	11- 32			
Zinc (Zn)	120	110- 190			
Manganese (Mn)	0.38	0.08- 0.50			
Chromium (Cr)	0.56	0.40- 0.70			
Vanadium (V)	0.28	0.025- 0.10			
Molybdenum (Mo)	0.053	0.040- 0.090			
Boron (B)	0.96	0.50- 3.5			
Iodine (I)	1.4	0.25- 1.3			
Lithium (Li)	0.005	0.007- 0.020			
Phosphorus (P)	137	150- 220			
Selenium (Se)	0.71	0.70- 1.1			
Strontium (Sr)	1.2	0.21- 2.1			
Sulfur (S)	48000	44000- 51000			
Cobalt (Co)	0.019	0.004- 0.020			
Iron (Fe)	16	7.0- 16			
Germanium (Ge)	0.025	0.030- 0.040			
Rubidium (Rb)	0.021	0.008- 0.080			
Zirconium (Zr)	0.32	0.060- 0.70			

SPECIMEN DATA		RATIOS		
COMMENTS:		ELEMENTS	RATIOS	RANGE
Date Collected: 09/29/2013	Sample Size: 0.203 g	Ca/Mg	4.93	4- 30
Date Received: 10/04/2013	Sample Type: Head	Ca/P	1.62	0.8- 8
Date Completed: 10/06/2013	Hair Color: Brown	Na/K	1.6	0.5- 10
Methodology: ICP/MS	Treatment:	Zn/Cu	4.44	4- 20
	Shampoo: Dr Bronner	Zn/Cd	706	> 800



LAB #:

hz0g Male
AGE: 7

Toxic & Essential Elements; Hair

TOXIC METALS				
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)		26	< 8.0	
Antimony (Sb)		0.039	< 0.066	
Arsenic (As)		0.12	< 0.080	
Barium (Ba)		1.0	< 0.75	
Beryllium (Be)		< 0.01	< 0.020	
Bismuth (Bi)		0.017	< 2.0	
Cadmium (Cd)		0.13	< 0.070	
Lead (Pb)		8.2	< 1.0	
Mercury (Hg)		0.38	< 0.40	
Platinum (Pt)		< 0.003	< 0.005	
Thallium (Tl)		< 0.001	< 0.002	
Thorium (Th)		0.002	< 0.002	
Uranium (U)		0.020	< 0.060	
Nickel (Ni)		0.28	< 0.20	
Silver (Ag)		0.62	< 0.14	
Tin (Sn)		0.91	< 0.30	
Titanium (Ti)		1.2	< 0.70	
Total Toxic Representation				

ESSENTIAL AND OTHER ELEMENTS					
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 2.5 th 16 th 50 th 84 th 97.5 th	
Calcium (Ca)		170	160- 500		
Magnesium (Mg)		29	12- 50		
Sodium (Na)		140	20- 200		
Potassium (K)		120	12- 140		
Copper (Cu)		30	11- 32		
Zinc (Zn)		60	110- 190		
Manganese (Mn)		0.75	0.08- 0.50		
Chromium (Cr)		0.79	0.40- 0.70		
Vanadium (V)		0.29	0.025- 0.10		
Molybdenum (Mo)		0.071	0.040- 0.090		
Boron (B)		2.3	0.50- 3.5		
Iodine (I)		1.9	0.25- 1.3		
Lithium (Li)		0.017	0.007- 0.020		
Phosphorus (P)		132	150- 220		
Selenium (Se)		0.78	0.70- 1.1		
Strontium (Sr)		0.73	0.21- 2.1		
Sulfur (S)		47500	44000- 51000		
Cobalt (Co)		0.028	0.004- 0.020		
Iron (Fe)		32	7.0- 16		
Germanium (Ge)		0.022	0.030- 0.040		
Rubidium (Rb)		0.16	0.008- 0.080		
Zirconium (Zr)		0.34	0.060- 0.70		

SPECIMEN DATA		RATIOS	
COMMENTS:		ELEMENTS	RATIOS
Date Collected: 09/29/2013	Sample Size: 0.198 g	Ca/Mg	5.86
Date Received: 10/04/2013	Sample Type: Head	Ca/P	1.29
Date Completed: 10/06/2013	Hair Color: Brown	Na/K	1.17
Methodology: ICP/MS	Treatment:	Zn/Cu	2
	Shampoo: Dr Bronner	Zn/Cd	462
		RANGE	
			4- 30
			0.8- 8
			0.5- 10
			4- 20
			> 800