

# HAIR ELEMENTS



**PATIENT: Number 302**  
**SEX: Male**  
**AGE: 32**  
**LOCATION: Cape Town, RSA**

POTENTIALLY TOXIC ELEMENTS				
TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 <sup>th</sup>	95 <sup>th</sup>
Aluminum	7.0	< 7.0		
Antimony	0.011	< 0.066		
Arsenic	0.054	< 0.080		
Barium	0.14	< 1.0		
Beryllium	< 0.01	< 0.020		
Bismuth	0.023	< 2.0		
Cadmium	0.017	< 0.065		
Lead	0.26	< 0.80		
Mercury	0.03	< 0.80		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.002		
Thorium	< 0.001	< 0.002		
Uranium	0.008	< 0.060		
Nickel	0.12	< 0.20		
Silver	0.04	< 0.08		
Tin	0.08	< 0.30		
Titanium	0.38	< 0.60		
Total Toxic Representation				

ESSENTIAL AND OTHER ELEMENTS						
ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE			97.5 <sup>th</sup>
			2.5 <sup>th</sup>	16 <sup>th</sup>	50 <sup>th</sup>	
Calcium	198	200- 750				
Magnesium	14	25- 75				
Sodium	150	20- 180				
Potassium	38	9- 80				
Copper	8.0	11- 30				
Zinc	150	130- 200				
Manganese	0.36	0.08- 0.50				
Chromium	0.37	0.40- 0.70				
Vanadium	0.046	0.018- 0.065				
Molybdenum	0.029	0.025- 0.060				
Boron	0.60	0.40- 3.0				
Iodine	0.34	0.25- 1.8				
Lithium	< 0.004	0.007- 0.020				
Phosphorus	157	150- 220				
Selenium	0.97	0.70- 1.2				
Strontium	0.36	0.30- 3.5				
Sulfur	46800	44000- 50000				
Cobalt	0.004	0.004- 0.020				
Iron	5.3	7.0- 16				
Germanium	0.022	0.030- 0.040				
Rubidium	0.036	0.011- 0.12				
Zirconium	0.067	0.020- 0.44				

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				ELEMENTS	RATIOS	EXPECTED RANGE
Date Collected: 7/15/2009	Sample Size: 0.199 g					
Date Received: 7/20/2009	Sample Type: Head		Ca/Mg	14.1	4- 30	
Date Completed: 7/24/2009	Hair Color: Brown		Ca/P	1.26	0.8- 8	
Client Reference:	Treatment:		Na/K	3.95	0.5- 10	
Methodology: ICP-MS	Shampoo: Pantene		Zn/Cu	18.8	4- 20	
			Zn/Cd	> 999	> 800	

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