

# HAIR ELEMENTS



Patient: Number 102  
 Sex: Female  
 Age: 24  
 Location: Cape Town, South Africa

## POTENTIALLY TOXIC ELEMENTS

TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 <sup>th</sup>	95 <sup>th</sup>
Aluminum	6.1	< 7.0		
Antimony	0.019	< 0.050		
Arsenic	0.11	< 0.060		
Beryllium	< 0.01	< 0.020		
Bismuth	0.024	< 2.0		
Cadmium	0.068	< 0.10		
Lead	0.88	< 1.0		
Mercury	0.67	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.008	< 0.060		
Nickel	0.34	< 0.40		
Silver	0.12	< 0.15		
Tin	0.05	< 0.30		
Titanium	0.58	< 1.0		
Total Toxic Representation				

## ESSENTIAL AND OTHER ELEMENTS

ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			2.5 <sup>th</sup>	16 <sup>th</sup>	50 <sup>th</sup>	84 <sup>th</sup>	97.5 <sup>th</sup>
Calcium	446	300- 1200					
Magnesium	180	35- 120					
Sodium	32	12- 90					
Potassium	11	8- 38					
Copper	27	12- 35					
Zinc	180	140- 220					
Manganese	0.47	0.15- 0.65					
Chromium	0.38	0.20- 0.40					
Vanadium	0.066	0.018- 0.065					
Molybdenum	0.031	0.028- 0.056					
Boron	0.39	0.30- 2.0					
Iodine	1.1	0.25- 1.3					
Lithium	< 0.004	0.007- 0.023					
Phosphorus	159	160- 250					
Selenium	0.90	0.95- 1.7					
Strontium	1.0	0.50- 7.6					
Sulfur	46000	44500- 52000					
Barium	0.41	0.26- 3.0					
Cobalt	0.016	0.013- 0.050					
Iron	12	5.4- 14					
Germanium	0.028	0.045- 0.065					
Rubidium	0.007	0.007- 0.096					
Zirconium	0.17	0.020- 0.42					

### SPECIMEN DATA

**COMMENTS:**

Date Collected: 7/16/2007  
 Date Received: 7/24/2007  
 Date Completed: 7/27/2007

Sample Size: 0.198 g  
 Sample Type: Head  
 Hair Color: Brown  
 Treatment:  
 Shampoo: Pantene

Methodology: ICP-MS

V06.99

### RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	2.48	4- 30
Ca/P	2.81	1- 12
Na/K	2.91	0.5- 10
Zn/Cu	6.67	4- 20
Zn/Cd	> 999	> 800