

# HAIR ELEMENTS



**PATIENT:** Number 98  
**SEX:** Female  
**AGE:** 49  
**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	9.5	< 7.0		
Antimony	0.030	< 0.050		
Arsenic	0.041	< 0.060		
Beryllium	< 0.01	< 0.020		
Bismuth	0.018	< 2.0		
Cadmium	0.27	< 0.10		
Lead	0.36	< 1.0		
Mercury	2.6	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.046	< 0.060		
Nickel	0.95	< 0.40		
Silver	0.09	< 0.15		
Tin	0.14	< 0.30		
Titanium	0.93	< 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	1270	300- 1200					
Magnesium	86	35- 120					
Sodium	20	12- 90					
Potassium	14	8- 38					
Copper	56	12- 35					
Zinc	220	140- 220					
Manganese	1.5	0.15- 0.65					
Chromium	0.53	0.20- 0.40					
Vanadium	0.055	0.018- 0.065					
Molybdenum	0.035	0.028- 0.056					
Boron	0.54	0.30- 2.0					
Iodine	0.34	0.25- 1.3					
Lithium	< 0.004	0.007- 0.023					
Phosphorus	177	160- 250					
Selenium	1.1	0.95- 1.7					
Strontium	4.5	0.50- 7.6					
Sulfur	49100	44500- 52000					
Barium	4.3	0.26- 3.0					
Cobalt	0.85	0.013- 0.050					
Iron	17	5.4- 14					
Germanium	0.035	0.045- 0.065					
Rubidium	0.011	0.007- 0.096					
Zirconium	0.089	0.020- 0.42					

### SPECIMEN DATA

**COMMENTS:**

Date Collected: 5/29/2007      Sample Size: 0.199 g  
 Date Received: 7/3/2007      Sample Type: Head  
 Date Completed: 7/12/2007      Hair Color: Brown  
    Treatment:  
 Methodology: ICP-MS      Shampoo: Pantene

V06.99

### RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	14.8	4- 30
Ca/P	7.18	1- 12
Na/K	1.43	0.5- 10
Zn/Cu	3.93	4- 20
Zn/Cd	815	> 800