

# HAIR ELEMENTS



**PATIENT: Number 133**  
**SEX: Male**  
**AGE: 18**  
**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	5.1	< 7.0		
Antimony	0.015	< 0.066		
Arsenic	0.049	< 0.080		
Beryllium	< 0.01	< 0.020		
Bismuth	0.035	< 2.0		
Cadmium	0.009	< 0.15		
Lead	0.33	< 2.0		
Mercury	< 0.03	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.009	< 0.060		
Nickel	0.06	< 0.40		
Silver	0.04	< 0.12		
Tin	0.09	< 0.30		
Titanium	0.43	< 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	373	200- 750					
Magnesium	88	25- 75					
Sodium	91	12- 90					
Potassium	47	9- 40					
Copper	10	10- 28					
Zinc	200	130- 200					
Manganese	0.08	0.15- 0.65					
Chromium	0.36	0.20- 0.40					
Vanadium	0.056	0.018- 0.065					
Molybdenum	0.030	0.025- 0.064					
Boron	1.7	0.40- 3.0					
Iodine	0.31	0.25- 1.3					
Lithium	0.005	0.007- 0.023					
Phosphorus	200	160- 250					
Selenium	0.89	0.95- 1.7					
Strontium	1.6	0.30- 3.5					
Sulfur	42200	44500- 52000					
Barium	0.10	0.16- 1.6					
Cobalt	0.003	0.013- 0.035					
Iron	6.5	5.4- 13					
Germanium	0.029	0.045- 0.065					
Rubidium	0.035	0.011- 0.12					
Zirconium	0.044	0.020- 0.44					

### SPECIMEN DATA

**COMMENTS:**  
 Date Collected: 11/1/2007      Sample Size: 0.2 g  
 Date Received: 12/3/2007      Sample Type: Head  
 Date Completed: 12/6/2007      Hair Color:  
    Treatment:  
 Methodology: ICP-MS              Shampoo:

V06.99

### RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	4.24	4- 30
Ca/P	1.87	0.8- 8
Na/K	1.94	0.5- 10
Zn/Cu	20	4- 20
Zn/Cd	> 999	> 800