

Biolab reference: **AAAA\CDOC\I12**

Patient: **Mr Test Patient**

Referred by: **Dr Doctor**

Date of birth: **07/09/1982**

Your reference:

Sex: **Male**

Date: **01/09/2012**

Sample date: **30/08/2012**

Hair Mineral and Toxic Element Analysis

(by Inductively Coupled Plasma - Mass Spectrometry [ICP-MS])

Hair Colour: **Brown**

Bleach: **None**

Height: **1.78m**

Highlight: **None**

Weight: **82Kg**

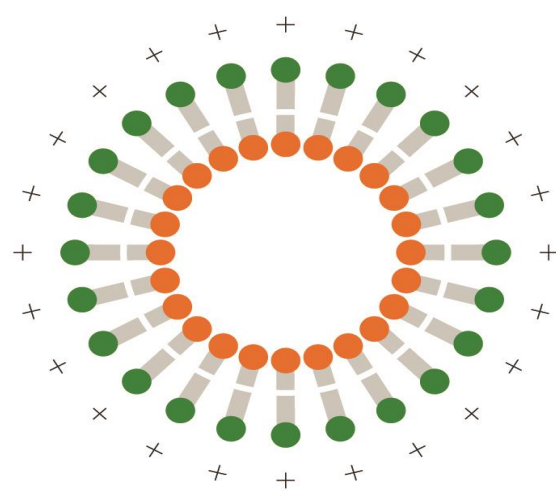
Perm: **None**

Shampoo: **Various**

Tint: **None**

Conditioner: **None**

Minerals	Result µg/gram of hair	Reference interval		Reference interval		
		Low	High	Low	Normal	High
Calcium	609	200	2800	200		2800
Magnesium	28	60	160	60		160
Phosphorus	159	100	200	100		200
Sodium	347	50	1000	50		1000
Potassium	85	50	300	50		300
Iron	13.0	5.0	30.0	5.0		30.0
Copper	13	10	100	10		100
Zinc	127	160	240	160		240
Chromium	0.16	0.10	1.50	0.10		1.50
Manganese	0.25	0.20	2.00	0.20		2.00
Selenium	0.52	0.40	2.00	0.40		2.00
Cobalt	0.02	0.01	0.20	0.01		0.20



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Hair Mineral and Toxic Element Analysis

Toxic Metals	Result		Acceptable		Raised	
	µg/gram of hair	Reference interval				
Aluminium	20	≤50	50.0			
Arsenic	4.9	≤1.0	1.00			
Cadmium	0.01	≤0.10	0.10			
Lead	1.90	≤2.00	2.00			
Mercury	2.38	≤1.00	1.00			
Nickel	0.52	≤1.40	1.40			

Hair element ratios	Percentile		
		2.5 th	97.5 th
Calcium / Magnesium	22 : 1	3.6 : 1	36.3 : 1
Calcium / Phosphorus	3.8 : 1	1.8 : 1	21.3 : 1
Sodium / Potassium	4.1 : 1	0.4 : 1	3.4 : 1
Zinc / Copper	9.8 : 1	2.1 : 1	18.1 : 1
Zinc / Lead	67 : 1	≥	104 : 1
Zinc / Cadmium	12700:1	≥	1989 : 1
Selenium / Cadmium	52 : 1	≥	5.8 : 1
Selenium / Mercury	0.2 : 1	≥	0.5 : 1

Comments:

Zinc and magnesium deficiencies reflecting poor dietary intake or decreased intestinal absorption.

Significantly elevated hair arsenic level. Sources of exposure include regular rice consumption, exposure to treated wood and pesticides.

Elevated hair mercury level reflecting increased exposure to organic forms of mercury (e.g. regular fish consumption).

1. Certified Reference Material no. 13, Human Hair, National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki, 305-8506, Japan