

Table-S1: Age, weight and height of healthy normal subjects and β -thalassemia patients.

Parameter	Follow up β-Thalassemia Patients on HU (n=40)	Healthy Volunteers (n=45)
Gender (Male/ Female)	23/17	23/22
Age (years)	9.93 \pm 6.68	18.73 \pm 7.93
Weight (Kgs)	23.53 \pm 12.78	47.37 \pm 16.34
Height (cms)	118.02 \pm 31.79	156.50 \pm 18.73

Table-S2: Summary of calibration equations and LOD data of the optimized method ($n = 3$).

Name of elements	Linear calibration range ($\mu\text{g L}^{-1}$)	Regression equation	R²	LOD ($\mu\text{g L}^{-1}$)
Li	0.1-200	$y = 3814.14x + 1625.41$	0.99996	0.016
Mg	25-200	$y = 5840.56x + 22846.68$	0.99973	0.227
Al	25-200	$y = 6768.43x + 18342.73$	0.99955	0.773
Ca	25-200	$y = 7.88 \times 10^{-4}x + 0.0064$	0.99633	6.303
V	0.1-200	$y = 0.6530x + 0.0053$	0.99952	0.016
Cr	0.1-200	$y = 0.9832x + 0.3070$	0.99957	0.025
Mn	0.1-200	$y = 0.2868x + 0.1209$	0.99978	0.072
Fe	0.1-200	$y = 0.7078x + 1.6010$	0.99967	0.066
Co	0.1-200	$y = 1.9670x + 0.0163$	0.99948	0.008
Ni	0.1-200	$y = 0.7266x + 0.1445$	0.99916	0.009
Cu	0.1-200	$y = 2.3350x + 0.6911$	0.99953	0.081
Zn	0.1-200	$y = 0.2328x + 0.2626$	0.99903	0.029
Se	25-200	$y = 0.0035x + 8.54 \times 10^{-4}$	0.99872	0.024
Rb	0.1-200	$y = 0.2169x + 0.0154$	0.99979	0.047
Sr	25-200	$y = 0.2851x + 0.0369$	0.99975	0.115
Ag	0.1-200	$y = 0.4652x + 0.0845$	0.99974	0.029
Cd	0.1-200	$y = 0.0395x + 1.78 \times 10^{-4}$	0.9998	0.012
Ba	25-200	$y = 0.0220x + 0.0035$	0.99955	0.143
Pb	0.1-200	$y = 0.1233x + 0.1206$	0.99986	0.048

Table-S3: Analytical performance for the determination of trace and ultratrace elements in Seronorm™ serum reference material.

Analyte	Certified value (acceptable range, µg/L)	Measured value (µg/L)
Li	5741 ± 321	6048.09 ± 29.22
Al	33.6 ± 1.9	36.87 ± 3.36
Ca	94200 ± 4400	75312 ± 4964
Zn	1742 ± 82	2446 ± 192.40
Sr	26.3	32.22 ± 0.95
Ni	5.8 ± 0.7	6.37 ± 0.08
Ag	0.16	0.47 ± 0.06
Cd	0.126	0.14 ± 0.02
Rb	5.25	5.97 ± 1.26
Co	1.2 ± 0.2	1.37 ± 0.004
Mn	15.0 ± 0.9	20.46 ± 0.30
Ba	126	142.59 ± 23.18
V	0.96	1.59 ± 0.03
Cr	1.5 ± 0.2	2.07 ± 0.17
Se	107 ± 7.0	310.36 ± 12.34
Fe	1430 ± 8.0	1442 ± 5.05
Pb	1.02	0.94 ± 0.19
Cu	1691 ± 84	1617 ± 87.68
Mg	20600 ± 1000	25670 ± 974

Note. Data for found values are expressed as mean ± SD ($n = 3$).

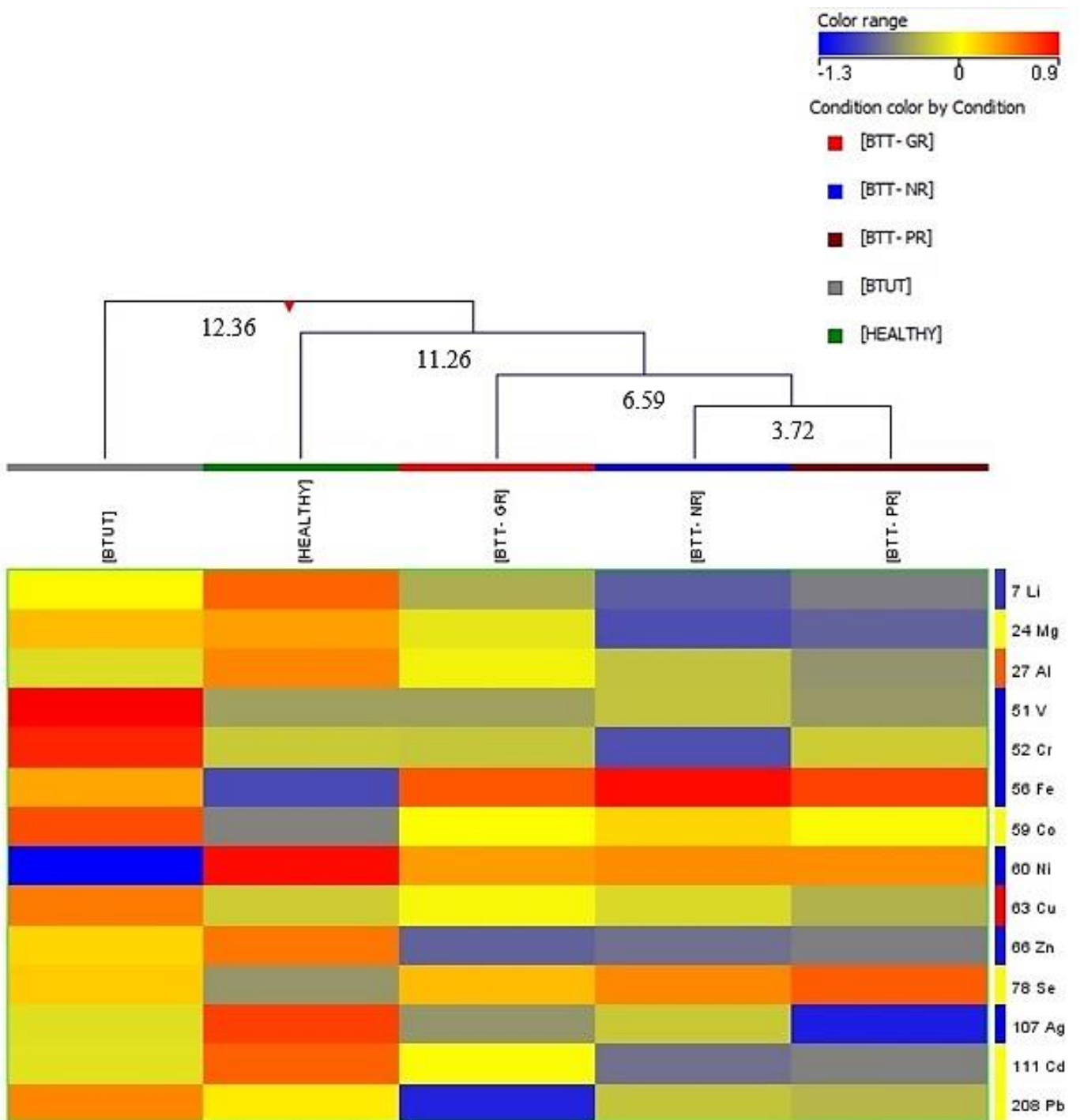


Figure-S1: A dendrogram expressing the normalized intensity values taken from healthy controls, HU untreated β -thalassemia patients, and HU treated three groups of responders i.e. GR, PR and NR.