Electronic Supplementary Material (ESI) for Metallomics.
This journal is © The Royal Society of Chemistry 2017

Electronic Supplementary Information

Whole blood Fe isotopic signature in a sub-Saharan African population

Justin C. Cikomola[1,2]*, María R. Flórez[3]*, Marta Costas-Rodríguez[3], Yulia Anoshkina[3], Karl Vandepoele[4], Philippe B. Katchunga[1], Antoine S. Kishabongo[5], Marijn M. Speeckaert[6], Frank Vanhaecke[3] and Joris R. Delanghe[2]

* *Both authors contributed equally to this paper.*

[1] Department of Internal Medicine, Hôpital provincial général de référence de Bukavu, Catholic University of Bukavu, Michombero 2, Bukavu, Democratic Republic of the Congo

[2] Department of Clinical Chemistry, Ghent University Hospital, De Pintelaan 185 B-9000 Ghent, Belgium

[3] Department of Analytical Chemistry, Ghent University, Campus Sterre, Krijgslaan 281-S12, B-9000 Ghent, Belgium.

[4] Laboratory of Molecular Diagnostics and Hematology, Ghent University Hospital, De Pintelaan 185, B-9000, Ghent, Belgium

[5] Department of Laboratory Medicine, Hôpital provincial général de référence de Bukavu, Catholic University of Bukavu, Michombero 2, Bukavu, Democratic Republic of the Congo

[6] Department of Nephrology, Ghent University Hospital, De Pintelaan 185, B-9000 Ghent, Belgium

Table S1. Relevant medical parameters and whole blood $\delta^{56}Fe$ values (‰) for all samples included in the study. The uncertainty accompanying $\delta^{56}Fe$ values represents the internal precision of the measurements expressed as two times the standard deviation (2SD) of all the measurement cycles.

Sample code	Fpn Q248H	Remark	Fer (µg L^{-1})	Serum Fe (µg dL^{-1})	Tf (g L^{-1})	Tf SAT (%)	HbA1c (mmol mol^{-1})	BMI	$\delta^{56}Fe$ (‰)	$\delta^{57}Fe$ (‰)
SK01	Homozygote	Diabetic	86.99	110.3	2.40	37.1	90	22.3	-2.80±0.07	-4.18±0.11
SK02	Homozygote	Diabetic	121.2	98.3	2.61	30.4	53	21.8	-2.84±0.03	-4.20±0.03
SK03	Homozygote	Diabetic	1204	91.1	1.49	49.3	45	27.8	-2.91±0.01	-4.28±0.02
SK04	Homozygote	Diabetic	218.9	55.5	2.46	18.2	42	22.5	-2.68±0.09	-3.92±0.15
SK05	Heterozygote	Diabetic	416.2	89.6	2.50	28.9	85	20.6	-2.69±0.03	-3.94±0.06
SK06	Heterozygote	Diabetic	502.5	116.9	2.75	34.3	51	24.5	-2.86±0.01	-4.18±0.01
SK07	Heterozygote	Diabetic	380.9	165	2.96	45.0		27.7	-2.97±0.01	-4.37±0.06
SK08	Heterozygote	Diabetic	449	102.9	2.53	32.8	81	23.9	-2.94±0.04	-4.32±0.08
SK09	Heterozygote	Diabetic	71.06	152.6	3.00	41.0	48		-2.73±0.05	-3.97±0.17
SK10	Heterozygote		551.2	150.2	2.44	49.6	38	25.6	-3.21±0.07	-4.75±0.06
SK11	Heterozygote		120.5	84.3	2.52	27.0	31	23.4	-2.89±0.05	-4.24±0.10
SK12	Heterozygote		162.4	98.2	2.11	37.5	39	22.5	-2.82±0.01	-4.13±0.10
SK13	Heterozygote		202.6	79.8	2.00	32.2	29	23.7	-2.67±0.01	-3.92±0.01
SK14	Heterozygote		169.6	80	2.46	26.2	33	19.5	-3.01±0.07	-4.45±0.07
SK15	Heterozygote		937.2	124	2.40	41.7	38	23.4	-3.03±0.09	-4.53±0.02
SK16	Heterozygote		166.3	102.8	2.93	28.3	32	22.1	-2.88±0.04	-4.26±0.07
SK17	Wild-type	Diabetic	236.6	95.5	2.40	32.1	51	23.9	-3.09±0.04	-4.57±0.14
SK18	Wild-type	Diabetic	67.13	85.9	2.32	29.9	46	23.1	-2.78±0.01	-4.10±0.01
SK19	Wild-type	Diabetic	540.2	75.6	2.01	30.3	81	18.0	-3.00±0.07	-4.33±0.15
SK20	Wild-type	Diabetic	710.4	74.5	2.05	29.3	62	21.4	-3.04±0.05	-4.48±0.02
SK21	Wild-type	Diabetic	178.1	73	2.36	24.9	46	20.3	-2.95±0.06	-4.36±0.01
SK22	Wild-type	Diabetic	703.5	204.8	2.83	58.4	51	26.8	-3.03±0.06	-4.41±0.13

SK23	Wild-type	Diabetic	176	95.1	2.59	29.6	39	20.3	-2.47±0.05	-3.64±0.08
SK24	Wild-type	Diabetic	82.71	75.6	2.60	23.4	51	22.0	-2.74±0.06	-4.02±0.17
SK25	Wild-type	Diabetic	141.3	81.2	2.06	31.8	81	18.7	-2.41±0.04	-3.56±0.02
SK26	Wild-type	Diabetic	105.4	102.9	2.56	32.4	61	23.3	-2.98±0.08	-4.40±0.09
SK27	Wild-type		750.8	107.3	2.64	32.8	32	24.9	-3.32±0.04	-4.91±0.04
SK28	Wild-type		93.99	100.4	2.38	34.0	38	21.1	-2.97±0.07	-4.37±0.13
SK29	Wild-type		273.8	86	2.94	23.6	35	33.8	-3.17±0.02	-4.70±0.03
SK30	Wild-type		68.18	87.7	2.56	27.6	35	25.1	-2.74±0.06	-4.01±0.15
SK31	Wild-type		78.38	115.3	2.93	31.7	39	18.0	-2.69±0.03	-3.97±0.21
SK32	Wild-type		578	88.3	2.01	35.4	29	24.2	-3.09±0.01	-4.56±0.06
SK33	Wild-type		299.6	205.2	3.10	53.4	24	27.7	-2.83±0.09	-4.15±0.22
SK34	Wild-type		261.2	54	2.13	20.4	29	19.9	-2.69±0.05	-3.99±0.11
SK35	Wild-type		337.2	76.6	2.38	26.0	27	21.3	-2.94±0.01	-4.29±0.06
SK36	Wild-type		120.8	115.6	2.57	36.3	29	19.9	-2.95±0.07	-4.33±0.04
SK37	Wild-type		219	98.8	2.94	27.1	31	22.6	-3.03±0.01	-4.48±0.06
SK38	Wild-type		587	89.5	2.45	29.5	31	29.1	-3.21±0.04	-4.78±0.07
SK39	Wild-type		477	65.3	2.26	23.3	32	28.7	-3.10±0.01	-4.60±0.06
SK40	Wild-type		114.9	143.2	2.97	38.9	34	20.3	-2.80±0.05	-4.15±0.12
SK41	Wild-type		1014	106.9	1.91	45.1	31	20.7	-2.96±0.09	-4.32±0.12
SK42	Wild-type		214.9	107.3	2.18	39.7	31	23.6	-3.08±0.04	-4.56±0.10

Table S2. Instrument settings and data acquisition parameters for Fe quantification using a Thermo Scientific Element XR single collector sector field ICP-MS instrument.

Instrument settings	
RF power (W)	1250
Guard electrode	Connected
Sampler cone	Ni; Standard; 1.1 mm aperture diameter
Skimmer cone	Ni; H-type; 0.8 mm aperture diameter
Lens settings	Optimized for maximum analyte signal intensity
Plasma gas flow rate (L min^{-1})	15
Auxiliary gas flow rate (L min^{-1})	0.80
Nebulizer gas flow rate (L min^{-1})	1.010
Sample uptake rate (µL min^{-1})	200
Resolution	Medium (4000)
Data acquisition parameters	
Scan mode	E-Scan
Segment duration (s)	0.2
Sample time (s)	0.01
Runs	5
Passes	5
Samples per peak	20
Nuclides monitored	^{54}Fe, ^{56}Fe; ^{57}Fe; ^{69}Ga