

Client: Your Company

Contact(s): Your Name

Analysis: $\delta^2\text{H}$ (deuterium) and $\delta^{18}\text{O}$ of Doubly Labeled Water (DLW)

IA Ref. No.: Our LIMS Code

Your Ref.: Your Job Code

From: Steve Brookes

Date: April 20, 2007

We have completed the deuterium and oxygen-18 analysis of the urine and dose samples that we received on April 2, 2007. The results of analysis can be found attachment as an MS Excel worksheet.

The samples were measured in duplicate with results being presented in both per mil (‰) and parts per million (ppm) notation. The analysis proceeded as follows:

Deuterium

A sample size of 0.3 mL was pipetted into septum sealed vials and insert vials containing 5 % platinum on alumina catalyst added. The vials were sealed and the headspace flushed with pure H_2 gas. References and quality control check samples were prepared in the same manner. Once all vials were flushed they were left to equilibrate for a period of three days to ensure complete equilibration. The samples and references were subsequently analysed by Continuous Flow - Isotope Ratio Mass Spectrometry (CF-IRMS) using a Europa Scientific ANCA-GSL and GEO 20-20 IRMS.

Samples were calibrated against two laboratory reference waters IA-R018 ($\delta^2\text{H}_{\text{V-SMOW}} = -56.5$ ‰) and IA-R020 ($\delta^2\text{H}_{\text{V-SMOW}} = 1089.2$ ‰). Accuracy was checked by measuring laboratory standard water IA-R019 ($\delta^2\text{H}_{\text{V-SMOW}} = 522.3$ ‰) as a check sample within each batch of samples. Data for the check samples is reported in the results table.

Oxygen-18

Following deuterium analysis, vials were flushed with pure CO_2 gas and left to equilibrate for 24 hours. Reference waters and quality control check samples were prepared in the same manner. The samples and references were subsequently analysed by CF-IRMS using a Europa Scientific ANCA-G and Hydra 20-20 IRMS.

Samples were calibrated against two laboratory reference waters IA-R018 ($\delta^{18}\text{O}_{\text{V-SMOW}} = -7.86 \text{ ‰}$) and IA-R021 ($\delta^{18}\text{O}_{\text{V-SMOW}} = 247.96 \text{ ‰}$). Accuracy was checked by measuring laboratory standard water IA-R011 ($\delta^{18}\text{O}_{\text{V-SMOW}} = 109.21 \text{ ‰}$) as a check sample within each batch of samples. Data for the check samples is reported in the results table.

Preparation of Doses

The doubly labeled water dose was prepared such that each subject received 2.5 grams of 10 % oxygen-18 and 0.15 grams of 99.9 % deuterium oxide per kg of Total Body Water (TBW). TBW was estimated to be 55 % of body weight. The required doses of doubly labeled water calculated for each subject were dispensed into plastic bottles fitted with 'sport caps'. 1 mL of the dose was removed and retained for isotope analysis (see below). The bottles, containing the remaining dose, were then weighed to 4 decimal places. The bottles were re-weighed after the doses had been administered in order to determine the *Dose Consumed (g)* value reported in the results file.

Dose Dilutions

An accurately weighed (to 4 decimal places) aliquot of the dose sample was diluted to 100 ml with tap water in a volumetric flask. The weight of the doses and deuterium and oxygen-18 content of the diluted doses and laboratory water used for preparation of the dose dilutions are supplied in the results table.

Analysis Notes

1. The results file contains the TBW calculations for each subject. These have been calculated by using the diluted dose method. The TBW calculations show that there is excellent agreement for the calculated D and O spaces.
2. We were not provided with complete information about the collection times for each urine sample, therefore we have not provided any excretion plots.

The unused portions of the samples will be returned to you if you request us to do so, otherwise they will be placed in storage for a period of 3 months, after which time they will be disposed of.

If you require any further information or have any questions about the results, please don't hesitate to contact us.

Analysed & Reported by:

Checked by:

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Iso-Analytical Laboratory Report

Client Details

Name: Your Company
 Contact(s): Your Name
 P.O. No.: Your Order Code

Sample Details

Number: 16 Subjects
 Material: Urine and dose

Sample Tracking

IA Reference No.: Our LIMS Code
 Date of Arrival: April 2, 2007

Analysis Details

Isotope(s) : $\delta^2\text{H}$ & $\delta^{18}\text{O}$
 Method: Equilibration-IRMS
 Report Date: April 20, 2007

Subject: 01		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Male	Dose	808.67	281.64	116.30	2233.40	
			813.68	282.42	116.39	2233.58	
Age (years)	21	1	716.11	267.23	105.28	2211.40	
			712.73	266.70	104.94	2210.73	
Height (cm)	175	2	692.91	263.62	102.32	2205.50	
			690.13	263.19	102.22	2205.29	
Weight at sampling (Kg)	65.40	3	452.03	226.12	56.93	2114.88	
			451.23	225.99	56.98	2114.98	
Dose consumed (g)	93.2325	4	432.33	223.05	54.03	2109.07	
			428.85	222.51	53.96	2108.94	
Dose diluted (g/100 mL)	0.2565	5	258.78	196.03	27.63	2056.37	
			259.04	196.07	27.59	2056.28	
		6	275.13	198.57	26.97	2055.06	
			275.13	198.57	26.94	2054.99	
		Baseline	-20.34	152.57	-2.47	1996.24	
			-19.20	152.75	-2.49	1996.22	

Subject: 02		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Male	Dose	805.30	281.11	117.64	2236.08	
			801.21	280.48	117.07	2234.95	
Age (years)	27	1	652.86	257.38	99.20	2199.27	
			651.66	257.20	99.03	2198.92	
Height (cm)	175	2	622.72	252.69	92.98	2186.86	
			625.25	253.09	92.71	2186.32	
Weight at sampling (Kg)	77.50	3	485.93	231.40	65.38	2131.74	
			487.16	231.59	65.21	2131.41	
Dose consumed (g)	113.5812	4	474.97	229.69	63.26	2127.52	
			474.33	229.59	63.04	2127.07	Container labelling suggests that container 6 was used before container 5, explaining why the ^2H and ^{18}O values for container 6 are higher than for container 5.

Dose diluted (g/100 mL)	0.2581	5	319.97	205.56	36.57	2074.22
			317.68	205.20	36.25	2073.58
		6	322.01	205.87	37.44	2075.96
			322.44	205.94	37.49	2076.05
		Baseline	-23.43	152.09	-3.13	1994.94
			-21.77	152.35	-3.20	1994.80

Subject: 03		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Male	Dose	812.35	282.21	116.49	2233.79	
			812.54	282.24	116.63	2234.06	
Age (years)	na	1	663.22	259.00	99.21	2199.29	
			662.70	258.91	98.97	2198.82	
Height (cm)	na	2	647.17	256.50	95.57	2192.03	
			647.38	256.53	95.52	2191.91	
Weight at sampling (Kg)	74.20	3	471.29	229.12	60.49	2121.98	
			467.48	228.52	60.52	2122.05	
Dose consumed (g)	105.8241	4	445.57	225.11	57.33	2115.67	
			443.59	224.80	57.25	2115.51	
Dose diluted (g/100 mL)	0.2561	5	257.87	195.89	28.19	2057.49	
			260.43	196.29	28.18	2057.46	
		6	201.12	187.05	19.71	2040.55	
			199.77	186.84	19.70	2040.52	
		Baseline	-31.11	150.89	-3.62	1993.96	
			-31.71	150.80	-3.70	1993.80	

Subject: 04		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Male	Dose	819.69	283.35	117.47	2235.75	
			822.77	283.83	117.38	2235.56	
Age (years)	23	1	709.71	266.23	105.11	2211.06	
			711.76	266.55	104.79	2210.42	
Height (cm)	174.5	2	704.76	265.46	103.38	2207.61	
			707.15	265.84	103.45	2207.74	
Weight at sampling (Kg)	73.10	3	450.41	225.86	55.30	2111.62	
			452.37	226.17	55.27	2111.56	
Dose consumed (g)	103.6192	4	428.06	222.39	51.59	2104.20	
			422.23	221.48	51.47	2103.98	
Dose diluted (g/100 mL)	0.2579	5	203.72	187.46	20.37	2041.88	
			203.13	187.36	20.20	2041.53	
		6	202.53	187.27	20.02	2041.17	
			203.38	187.40	19.98	2041.09	
		Baseline	-26.46	151.62	-3.54	1994.11	
			-28.59	151.28	-3.63	1993.93	

Subject: 05		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Male	Dose	810.85	281.98	115.72	2232.24	
			811.06	282.01	115.86	2232.53	
Age (years)	22	1	688.19	262.88	101.71	2204.28	
			685.36	262.44	101.74	2204.35	

Height (cm)	183.5	2	668.20	259.77	97.64	2196.15
			666.83	259.56	97.71	2196.30
Weight at sampling (Kg)	78.70	3	481.60	230.72	61.76	2124.52
			481.41	230.69	61.68	2124.36
Dose consumed (g)	113.0729	4	479.80	230.44	61.11	2123.23
			484.40	231.16	61.16	2123.31
Dose diluted (g/100 mL)	0.2549	5	280.15	199.36	29.52	2060.13
			278.83	199.15	29.30	2059.69
		6	279.78	199.30	29.27	2059.64
			278.51	199.10	29.00	2059.10
		Baseline	-20.38	152.56	-3.00	1995.19
			-21.79	152.34	-3.03	1995.14

Subject: 06		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Male	Dose	811.83	282.13	117.22	2235.24	
			814.70	282.58	117.20	2235.21	
Age (years)	24	1	716.90	267.35	107.61	2216.05	
			717.88	267.51	107.25	2215.34	
Height (cm)	191.5	2	658.09	258.20	96.19	2193.25	
			660.52	258.58	96.17	2193.23	
Weight at sampling (Kg)	86.60	3	443.46	224.78	55.87	2112.75	
			437.94	223.92	55.86	2112.73	
Dose consumed (g)	125.2689	4	413.85	220.17	51.86	2104.76	
			411.40	219.79	51.61	2104.24	
Dose diluted (g/100 mL)	0.2570	5	201.04	187.04	20.68	2042.49	
			202.97	187.34	20.64	2042.41	
		6	203.45	187.41	20.48	2042.08	
			202.63	187.29	20.36	2041.85	
		Baseline	-33.39	150.54	-4.01	1993.18	
			-32.47	150.68	-4.12	1992.96	

Subject: 07		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Male	Dose	821.45	283.63	115.80	2232.40	
			822.35	283.77	115.80	2232.41	
Age (years)	21	1	723.91	268.44	105.65	2212.14	
			728.16	269.11	105.63	2212.10	
Height (cm)	185.5	2	717.16	267.39	103.83	2208.51	
			719.18	267.71	103.90	2208.65	
Weight at sampling (Kg)	88.20	3	470.03	228.92	58.47	2117.96	
			472.57	229.32	58.41	2117.84	
Dose consumed (g)	125.2607	4	455.74	226.69	55.39	2111.80	
			455.36	226.64	55.38	2111.78	
Dose diluted (g/100 mL)	0.2562	5	247.04	194.20	25.05	2051.22	
			248.78	194.47	25.05	2051.21	
		6	249.82	194.63	24.96	2051.04	
			247.48	194.27	24.84	2050.79	
		Baseline	-30.22	151.03	-3.37	1994.46	
			-31.16	150.88	-3.48	1994.24	

Subject: 08		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Male	Dose	827.38	284.55	116.37	2233.54	
			829.49	284.88	116.66	2234.12	
Age (years)	23	1	776.16	276.58	113.95	2228.72	
			777.51	276.79	113.60	2228.01	
Height (cm)	192.5	2	766.00	275.00	112.23	2225.29	
			761.68	274.32	112.20	2225.22	
Weight at sampling (Kg)	95.60	3	555.71	242.26	71.62	2144.21	
			554.87	242.13	71.27	2143.50	
Dose consumed (g)	135.3861	4	537.47	239.42	68.19	2137.36	
			540.39	239.87	68.29	2137.56	
Dose diluted (g/100 mL)	0.2565	5	295.40	201.73	32.06	2065.21	
			298.18	202.16	31.74	2064.58	
		6	293.49	201.43	31.45	2063.99	
			296.01	201.83	31.54	2064.18	
		Baseline	-24.58	151.91	-3.00	1995.19	
			-26.10	151.67	-3.03	1995.14	

Subject: 09		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Female	Dose	822.64	283.81	115.83	2232.46	
			823.94	284.02	115.76	2232.32	
Age (years)	25	1	722.78	268.27	104.62	2210.09	
			720.79	267.96	104.59	2210.04	
Height (cm)	162	2	689.52	263.09	99.64	2200.14	
			690.50	263.24	99.43	2199.72	
Weight at sampling (Kg)	48.60	3	371.96	213.65	43.76	2088.58	
			372.66	213.76	43.53	2088.12	
Dose consumed (g)	67.5302	4	362.96	212.25	42.14	2085.34	
			357.84	211.45	42.01	2085.08	
Dose diluted (g/100 mL)	0.2553	5	N/A	N/A	N/A	N/A	
			---	---	---	---	
		6	166.30	181.63	15.96	2033.06	
			167.93	181.88	15.83	2032.80	
		Baseline	-26.67	151.58	-2.74	1995.71	
			-23.06	152.14	-2.87	1995.45	

N/A = no sample provided

Subject: 10		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Female	Dose	813.46	282.39	114.55	2229.91	Container labelling suggests that container 4 was used before container 3, explaining why the ^2H and ^{18}O values for container 4 are higher than for container 3. There was no date on container 3.
			807.24	281.42	114.56	2229.94	
Age (years)	22	1	783.14	277.67	114.91	2230.64	
			782.54	277.57	115.05	2230.92	
Height (cm)	160	2	768.88	275.44	109.65	2220.12	
			768.62	275.40	109.87	2220.58	
Weight at sampling (Kg)	59.50	3	541.21	240.00	66.09	2133.16	
			543.36	240.34	65.55	2132.08	
Dose consumed (g)	84.0136	4	561.00	243.08	69.01	2138.99	
			557.47	242.53	68.97	2138.91	
Dose diluted (g/100 mL)	0.2535	5	302.32	202.81	31.76	2064.62	
			306.00	203.38	31.75	2064.60	

6	290.95	201.04	30.04	2061.18
	290.53	200.97	30.06	2061.22
Baseline	-30.55	150.98	-3.39	1994.41
	-28.08	151.36	-3.25	1994.69

Subject: 11		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Female	Dose	838.32	286.26	109.80	2220.42	Dose bottle was not returned and could not be re-weighed. Therefore dose consumed has been estimated to be 98.82% (average consumption rate of females) of the original dose in the bottle.
			842.02	286.83	109.59	2220.00	
Age (years)	23	1	888.02	293.99	121.18	2243.14	
			893.58	294.86	121.10	2242.99	
Height (cm)	162.5	2	865.95	290.56	117.63	2236.07	
			869.37	291.09	117.56	2235.92	
Weight at sampling (Kg)	63.60	3	552.42	241.75	63.61	2128.21	
			547.19	240.93	63.88	2128.75	
Dose consumed (g)	93.3287	4	503.81	234.18	57.60	2116.21	
			503.59	234.14	57.51	2116.04	
Dose diluted (g/100 mL)	0.2540	5	N/A	N/A	N/A	N/A	
			---	---	---	---	
		6	N/A	N/A	N/A	N/A	
			---	---	---	---	
		Baseline	-33.36	150.54	-3.73	1993.74	
			-32.36	150.70	-3.72	1993.75	

N/A = no sample provided

Subject: 12		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Female	Dose	879.62	292.68	109.99	2220.80	Container labelling suggests that container 2 was used before container 1, explaining why the D and ^{18}O values for container 2 are higher than for container 1. There were no dates on either container.
			879.64	292.69	110.16	2221.15	
Age (years)	22	1	883.26	293.25	112.58	2225.97	
			881.31	292.95	112.73	2226.27	
Height (cm)	164.5	2	889.48	294.22	115.06	2230.93	
			888.13	294.01	115.22	2231.25	
Weight at sampling (Kg)	67.00	3	634.39	254.51	68.80	2138.57	
			634.07	254.46	68.63	2138.24	
Dose consumed (g)	91.4851	4	611.59	250.96	65.02	2131.03	
			614.72	251.45	65.28	2131.54	
Dose diluted (g/100 mL)	0.2553	5	281.35	199.54	22.90	2046.91	
			285.17	200.14	22.66	2046.45	
		6	277.33	198.92	21.88	2044.89	
			272.59	198.18	22.05	2045.23	
		Baseline	-26.15	151.66	-2.51	1996.18	
			-26.35	151.63	-2.55	1996.09	

Subject: 13		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Female	Dose	879.48	292.66	109.68	2220.19	
			881.52	292.98	109.58	2220.00	
Age (years)	na	1	856.60	289.10	110.14	2221.10	
			857.46	289.23	110.08	2221.00	
Height (cm)	na	2	840.52	286.60	108.86	2218.56	
			837.97	286.20	108.94	2218.70	

Weight at sampling (Kg)	69.50	3	N/A	N/A	N/A	N/A
Dose consumed (g)	101.1014	4	483.17	230.97	50.81	2102.65
Dose diluted (g/100 mL)	0.2539	5	480.23	230.51	50.48	2102.00
		6	N/A	N/A	N/A	N/A
			---	---	---	---
		6	271.59	198.02	23.58	2048.27
			266.55	197.24	23.58	2048.27
		Baseline	-29.74	151.11	-3.33	1994.55
			-30.18	151.04	-3.29	1994.62

N/A = no sample provided

Subject: 14		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Female	Dose	847.68	287.71	110.25	2221.33	
			851.85	288.36	110.24	2221.30	
Age (years)	22	1	955.71	304.53	128.07	2256.89	
			949.56	303.57	128.18	2257.12	
Height (cm)	163	2	907.03	296.95	121.59	2243.97	
			909.09	297.27	121.52	2243.82	
Weight at sampling (Kg)	71.20	3	492.42	232.41	51.38	2103.78	
			492.78	232.46	51.28	2103.60	
Dose consumed (g)	102.8464	4	N/A	N/A	N/A	N/A	
			---	---	---	---	
Dose diluted (g/100 mL)	0.2552	5	465.03	228.14	48.43	2097.91	
			462.71	227.78	48.34	2097.72	
		6	418.88	220.96	42.82	2086.70	
			420.21	221.16	43.02	2087.10	
		Baseline	-23.32	152.11	-3.00	1995.21	
			-20.35	152.57	-3.00	1995.19	

N/A = no sample provided

Subject: 15		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
Gender	Female	Dose	878.85	292.56	109.45	2219.73	
			869.89	291.17	109.65	2220.13	
Age (years)	23	1	887.71	293.94	116.55	2233.91	
			884.68	293.47	116.47	2233.74	
Height (cm)	176.5	2	865.73	290.52	113.22	2227.26	
			867.53	290.80	113.52	2227.85	
Weight at sampling (Kg)	76.00	3	500.13	233.61	52.89	2106.80	
			501.00	233.74	53.03	2107.09	
Dose consumed (g)	108.7512	4	472.48	229.30	49.47	2099.97	
			470.47	228.99	49.50	2100.04	
Dose diluted (g/100 mL)	0.2533	5	234.46	192.24	20.56	2042.26	
			237.14	192.66	20.49	2042.10	
		6	196.88	186.39	15.97	2033.09	
			199.86	186.86	16.01	2033.15	
		Baseline	-32.02	150.75	-3.72	1993.76	
			-29.96	151.07	-3.72	1993.76	

Subject: 16		Container Number	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)	Comments
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Gender	Female	Dose	851.37	288.29	110.52	2221.87
			856.00	289.01	110.47	2221.76
Age (years)	24	1	853.74	288.65	114.32	2229.46
			851.67	288.33	114.18	2229.17
Height (cm)	168	2	846.46	287.52	112.59	2226.00
			846.30	287.50	112.54	2225.91
Weight at sampling (Kg)	76.10	3	640.21	255.41	72.28	2145.53
			637.15	254.94	72.49	2145.94
Dose consumed (g)	112.0818	4	601.84	249.44	67.72	2136.41
			603.04	249.63	67.75	2136.48
Dose diluted (g/100 mL)	0.2551	5	361.67	212.05	35.80	2072.67
			360.18	211.82	35.58	2072.23
		6	364.01	212.41	34.82	2070.73
			365.07	212.58	34.97	2071.02
		Baseline	-19.09	152.76	-2.58	1996.03
			-22.99	152.16	-2.73	1995.73

Iso-Analytical Water	$\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	^2H (ppm)	$\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)	^{18}O (ppm)
Used for diluting the dose samples prior to analysis	-42.12	149.18	-6.79	1987.62
	-42.91	149.05	-6.72	1987.77

Quality Control Check Samples

Replicate	IA-R019 $\delta^2\text{H}_{\text{V-SMOW}}$ (‰)	IA-R011 $\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰)
1	520.72	109.63
2	522.59	109.70
3	519.57	109.64
4	517.68	109.69
5	525.67	109.69
6	525.19	109.54
7	519.27	109.13
8	518.52	109.35
9	522.53	109.41
10	522.74	109.58
11	520.49	109.27
12	519.12	109.46
13	519.82	109.38
14	523.16	109.30
15	523.85	109.26
16	520.46	109.22
Mean	521.34	109.45
St. Dev.	2.39	0.19
N	16	16
Accepted Value	522.3	109.21

Calculation of TBW from Deuterium

Subject	Weight (kg)	Dose (g) A	Water (g) T	Portion - Mass (g) a	Portion - $\delta^2\text{H}_{\text{V-SMOW}}$ (‰) Ea	Water - $\delta^2\text{H}_{\text{V-SMOW}}$ (‰) Et	Pre - $\delta^2\text{H}_{\text{V-SMOW}}$ (‰) Ep	Post - $\delta^2\text{H}_{\text{V-SMOW}}$ (‰) Es	Raw TBW (kg) Raw	Correction Factor 2-H	Corrected TBW (kg) Corrected	Total Body Water (%)
01	65.40	93.2325	100	0.2565	811.18	-42.52	-19.77	714.42	42.26	1.04	40.64	62.14
02	77.50	113.5812	100	0.2581	803.25	-42.52	-22.60	652.26	55.15	1.04	53.03	68.43
03	74.20	105.8241	100	0.2561	812.45	-42.52	-31.41	662.96	50.88	1.04	48.92	65.93
04	73.10	103.6192	100	0.2579	821.23	-42.52	-27.53	710.73	47.01	1.04	45.20	61.83
05	78.70	113.0729	100	0.2549	810.95	-42.52	-21.09	686.78	53.48	1.04	51.43	65.35
06	86.60	125.2689	100	0.2570	813.26	-42.52	-32.93	717.39	55.59	1.04	53.46	61.73
07	88.20	125.2607	100	0.2562	821.90	-42.52	-30.69	726.03	55.85	1.04	53.70	60.89
08	95.60	135.3861	100	0.2565	828.44	-42.52	-25.34	776.83	57.31	1.04	55.10	57.64
09	48.60	67.5302	100	0.2553	823.29	-42.52	-24.87	721.78	30.67	1.04	29.49	60.68
10	59.50	84.0136	100	0.2535	810.35	-42.52	-29.32	782.84	34.80	1.04	33.46	56.24
11	63.60	93.3287	100	0.2540	840.17	-42.52	-32.86	890.80	35.11	1.04	33.76	53.09
12	67.00	91.4851	100	0.2553	879.63	-42.52	-26.25	882.28	36.37	1.04	34.97	52.20
13	69.50	101.1014	100	0.2539	880.50	-42.52	-29.96	857.03	41.44	1.04	39.84	57.33
14	71.20	102.8464	100	0.2552	849.76	-42.52	-21.83	952.63	36.90	1.04	35.48	49.83
15	76.00	108.7512	100	0.2533	874.37	-42.52	-30.99	886.19	42.92	1.04	41.27	54.30
16	76.10	112.0818	100	0.2551	853.68	-42.52	-21.04	852.70	45.07	1.04	43.33	56.94

Calculation of TBW from Oxygen-18

Subject	Weight (kg)	Dose (g) A	Water (g) T	Portion - Mass (g) a	Portion - $\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰) Ea	Water - $\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰) Et	Pre - $\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰) Ep	Post - $\delta^{18}\text{O}_{\text{V-SMOW}}$ (‰) Es	Raw TBW (kg) Raw	Correction Factor 18-O	Corrected TBW (kg) Corrected	Total Body Water (%)
01	65.40	93.2325	100	0.2565	116.34	-6.76	-2.48	105.11	41.59	1.01	41.18	62.96
02	77.50	113.5812	100	0.2581	117.36	-6.76	-3.16	99.12	53.40	1.01	52.87	68.22
03	74.20	105.8241	100	0.2561	116.56	-6.76	-3.66	99.09	49.59	1.01	49.10	66.17
04	73.10	103.6192	100	0.2579	117.43	-6.76	-3.59	104.95	45.97	1.01	45.52	62.26
05	78.70	113.0729	100	0.2549	115.79	-6.76	-3.01	101.73	51.90	1.01	51.39	65.29
06	86.60	125.2689	100	0.2570	117.21	-6.76	-4.06	107.43	54.20	1.01	53.66	61.96
07	88.20	125.2607	100	0.2562	115.80	-6.76	-3.42	105.64	54.94	1.01	54.40	61.67
08	95.60	135.3861	100	0.2565	116.51	-6.76	-3.02	113.77	55.71	1.01	55.16	57.70
09	48.60	67.5302	100	0.2553	115.79	-6.76	-2.81	104.61	30.18	1.01	29.88	61.48
10	59.50	84.0136	100	0.2535	114.56	-6.76	-3.32	114.98	33.98	1.01	33.65	56.55
11	63.60	93.3287	100	0.2540	109.69	-6.76	-3.73	121.14	34.27	1.01	33.93	53.34
12	67.00	91.4851	100	0.2553	110.07	-6.76	-2.53	112.65	36.35	1.01	35.99	53.71
13	69.50	101.1014	100	0.2539	109.63	-6.76	-3.31	110.11	40.86	1.01	40.46	58.21
14	71.20	102.8464	100	0.2552	110.25	-6.76	-3.00	128.12	35.96	1.01	35.60	50.01
15	76.00	108.7512	100	0.2533	109.55	-6.76	-3.72	116.51	41.53	1.01	41.12	54.11
16	76.10	112.0818	100	0.2551	110.50	-6.76	-2.66	114.25	44.07	1.01	43.63	57.33