

On-line Table 1: Concentration ratios and absolute metabolite concentrations in healthy volunteers

Publication	B0, Position, Volunteers	TE/TR (ms)	SNR	FWHM/ppm	NAA/Cr (mean)
Hock et al ^{30,a}	3T, C3-4, n = 13 (non-water suppressed)	30, ~2500	7 ± 1	0.07 ± 0.02	1.5 ± 0.2
Hock et al ^{30,a}	3T, C3-4, n = 13 (VAPOR)	30, ~2500	6.1 ± 1	0.08 ± 0.01	1.6 ± 0.3
Marliani et al ^{21,a}	3T, C2-3, n = 13	35, 2000	4.0 ± 1	0.10 ± 0.02	1.4 ± 0.3
Henning et al ^{17,a}	3T, entire cervical spinal cord, n = 8	42, ~2000	–	0.06 ± 0.11	1.2 ± 0.1
Carew et al ^{22,a}	3T, C1-2, n = 19	35, 2000	–	<0.12	1.3 ± 0.4
de Vita et al ²³	3T, C1-3, n = 14	30, ~3000	–	~0.11 ± 0.2	1.2 ± 0.3
Cooke et al ^{5,a}	2T, C1-2, n = 6	30, ~3000	–	–	–
Blamire et al ^{16,a}	2T, C1-3, n = 11	30, ~3000	–	–	–
Gómez-Ansón et al ^{10,a}	1.5T, C2-3, n = 6	30, 3000	–	–	1.3 ± 0.5
Edden et al ^{26,a}	3T, C2-3, n = 10	144, 2200	–	–	–
Pineda-Alonso et al ²⁷	3T, C1-2, n = 6	35, 2000	–	–	1.3 ± 0.5
Ciccarelli et al ^{9,a}	1.5T, C1-3, n = 12	30, ~3000	–	–	–
Rapalino et al ¹⁵	1.5T, C3, n = 20	30, ~590	–	–	2.1 ± 0.4
Rapalino et al ¹⁵	3T, C3, n = 20	30, ~590	–	–	1.7 ± 0.6
Holly et al ^{11,a}	1.5T, C1-2, n = 13	30, ~1500 or ~3000	–	~0.28~0.44	1.8 ± 0.2
Kim et al ^{3,a}	1.5T, L1-2	30, 2000	–	~0.10-0.20	–

Note:—Studies in which ECG triggering was used are labeled with ~ before TR values. Studies with quality indicators attesting sufficient spectral quality for reliable metabolite quantification are listed in the upper part of the table. Studies without quality indicators should be interpreted with caution. iu indicates institutional units; mlins, myo-inositol; VAPOR, asymmetric variable power RF pulses with optimized relaxation delays.

^aReferences published as full articles.

On-line Table 1, continued

NAA/Cho (mean)	Cho/Cr (mean)	mlins/Cr (mean)	NAA (mean, mean CRLB)	Cr (mean, mean CRLB)	Cho (mean, mean CRLB)	mlins (mean, mean CRLB)
–	0.4 ± 0.1	2.8 ± 0.4	–, 6%	–	–, 7%	–, 7%
–	0.4 ± 0.1	3.0 ± 0.4	–, 7%	–	–, 12%	–, 8%
3.1 ± 0.8	0.5 ± 0.1	1.7 ± 0.2	6.8 ± 1.6 iu, 13%	4.8 ± 0.6 iu, 13%	2.2 ± 0.4 iu, 10%	8.0 ± 1.1 iu, 12%
4.9 ± 1.3	0.3 ± 0.1	1.4 ± 0.6	–, <25%	–, <25%	–, <25%	–, <25%
2.7 ± 0.9	0.5 ± 0.1	1.4 ± 0.4	–, <25%	–, <25%	–, <25%	–, <25%
	0.3 ± 0.1	1.3 ± 0.3	–, <20%	–, <20%	–, <20%	–, <20%
		–	17.3 ± 0.5 mmol/L	9.5 ± 0.9 mmol/L, –	2.7 ± 0.5 mmol/L, –	–
			12.4 ± 2.3 mmol, –	7.1 ± 1.8 mmol, –	2.7 ± 0.3 mmol, –	6.1 ± 1.9 mmol, –
–	0.5 ± 0.2	1.5 ± 0.8	2.9 ± 0.5 mmol/L, <35%	2.6 ± 1.1 mmol/L, <35%	1.1 ± 0.2 mmol/L, <35%	3.6 ± 1.1 mmol/L, <35%
		–	10.0 ± 3.0 mmol, –	9.1 ± 3.0 mmol, –	3.1 ± 1.1 mmol, –	–
	0.4 ± 0.01	1.0 ± 0.3	4.2 ± 1.6 mmol/L	3.6 ± 1.3 mmol/L, –	1.5 ± 0.5 mmol/L, –	3.8 ± 1.6 mmol/L, –
			6.7 ± 1.7 mmol/L, <50%	3.2 ± 1.3 mmol/L, <50%	1.2 ± 0.5 mmol/L, <50%	4.8 ± 1.7 mmol/L, <50%
	1.2 ± 0.4	0.8 ± 0.4	–	–	–	–
	1.1 ± 0.3	0.7 ± 0.4	–	–	–	–
–	1.0 ± 0.2	–	–	–	–	–
–	–	–	–	–	–	–

On-line Table 2: Concentration ratios and absolute metabolite concentrations in patients having a variety of diseases or disorders in the spinal cord

Publication	Disease	B0, Position, Volunteers	TE/TR (ms)	SNR	FWHM/ppm	NAA/Cr (mean)
Marliani et al ^{20,a}	MS in lesions	3T, C2–3, n = 15	35, 2000	4 ± 1	0.11 ± 0.02	1.1 ± 0.3 ↓
Hock et al ³³	MS in normal-appearing spinal cord	3T, C3–4, n = 13	30, ~2000	4 ± 1	0.10 ± 0.02	1.3 ± 0.4
Carew et al ^{22,a}	Amyotrophic lateral sclerosis	3T, C1–2, n = 14	35, 2000	–	<0.12	0.8 ± 0.3 ↓
Hock et al ³³	Ependymoma (WHO II)	3T, C3–4, n = 1	30, ~2000	4	0.07	1.3
Hock et al ³³	Schwannoma (WHO II)	3T, T11, n = 1	30, ~2000	5	0.14	–
Hock et al ³³	Tumor (not specified)	3T, C4–5, n = 1	30, ~2000	3	0.09	0.7
Hock et al ³³	Tumor (not specified)	3T, C4–5, n = 1	30, ~2000	3	0.08	0.5
Blamire et al ^{16,a}	MS	2T, C1–3, n = 11	30, ~3000	–	–	–
Rapalino et al ¹³	Cervical spondylosis	1.5T, C3, n = 8	30, ~590	–	–	1.0 ± 0.3 ↓
de Vita et al ²³	Brachial plexus avulsion	3T, C1–3, n = 8	30, ~3000	–	~0.11 ± 0.20	1.2 ± 0.4
Henning et al ^{17,a}	Tumor	3T, T9, n = 1	42, ~2000	–	~0.09	0.5
Henning et al ^{17,a}	Tumor	3T, C4–5, n = 1	42, ~2000	–	–	1.9
Ciccarelli et al ^{9,a}	MS	1.5T, C1–3, n = 14	30, ~3000	–	–	–
Holly et al ^{11,a}	Spondylotic myelopathy	1.5T, C1–2, n = 21	30, ~1500 or ~3000	–	~0.28–~0.44	1.3 ± 0.5 ↓

Note:—Arrows represent significant changes (if provided in the original publication) compared with healthy subjects. Studies in which ECG triggering was used are labeled with ~ before TR values. Studies with quality indicators attesting sufficient spectral quality for reliable metabolite quantification are listed in the upper part of the table. Studies without quality indicators should be interpreted with caution. WHO indicates World Health Organization; mIns, myo-inositol.

^aReferences published as full articles.

On-line Table 2, continued

NAA/Cho (mean)	Cho/Cr (mean)	mIns/Cr (mean)	NAA (mean, mean CRLB)	Cr (mean, mean CRLB)	Cho (mean, mean CRLB)	mIns (mean, mean CRLB)
2.0 ± 0.7 ↓	0.6 ± 0.1 ↑	2.0 ± 0.4 ↑	–	–	–	–
	0.5 ± 0.1	3.6 ± 0.7	–, 14%	–	–, 11%	–, 9%
2.3 ± 0.7	0.4 ± 0.1 ↓	1.4 ± 0.5	–, <25%	–, <25%	–, <25%	–, <25%
	1.5	12.8	–, 35%	–	–, 15%	–, 11%
	0.5	3.8	–, 28%	–, 13%	–, 9%	–, 8%
	0.6	4.7	–, 36%	–, 14%	–, 10%	–, 7%
			8.5 ± 2.8 ↓ mmol–	4.9 ± 2.1 mmol,–	2.3 ± 0.8 mmol,–	6.3 ± 2.3 mmol,–
	1.5 ± 0.6	0.5 ± 0.4	–	–	–	–
–	0.3 ± 0.1	1.9 ± 0.4 ↑	–, <20%	–, <20%	–, <20%	–, <20%
1.1	0.4	1.0	–	–	–	–
1.9	1.0	12.9	–	–	–	–
–	1.0 ± 0.3	–	4.1 ± 0.7 ↓ mmol/L, <50%	3.4 ± 1.2 mmol/L, <50%	1.3 ± 0.6 mmol/L, <50%	6.0 ± 3.0 mmol/L, <50%
			–	–	–	–