

White skeletal muscle

Supplementary Table S1. Individual fatty acids content in the FFA fraction (nmol/g of wet tissue) in the white gastrocnemius muscle in the control (standard diet) and high-fat diet (HFD) groups after two-week cannabidiol (CBD) treatment.

Fatty acid	Control	CBD	HFD	HFD + CBD
14:0	22.14 ± 2.87	21.27 ± 4.11	27.92 ± 7.48 ^a	20.26 ± 2.37 ^b
16:0	159.96 ± 23.43	150.37 ± 33.49	145.74 ± 26.68	161.80 ± 14.35
16:1n7	12.10 ± 1.32	13.28 ± 2.77	9.76 ± 1.79 ^a	14.38 ± 2.41 ^b
18:0	66.20 ± 11.97	62.01 ± 15.08	55.13 ± 8.15 ^a	71.79 ± 9.24 ^b
18:1n9	57.72 ± 10.08	69.67 ± 20.50	74.60 ± 13.50 ^a	119.42 ± 10.02 ^{a,b}
20:0	2.40 ± 0.35	1.93 ± 0.39 ^a	2.13 ± 0.39	1.93 ± 0.27 ^a
22:0	1.94 ± 0.38	1.89 ± 0.43	1.79 ± 0.42	1.52 ± 0.18 ^a
24:0	6.17 ± 1.31	4.20 ± 0.81 ^a	4.99 ± 0.84 ^a	3.79 ± 0.90 ^{a,b}
24:1n9	1.38 ± 0.27	1.43 ± 0.25	1.35 ± 0.14	0.97 ± 0.17 ^{a,b}

The data are expressed as mean values ± SD, n = 10 in each group. ^ap < 0.05 indicates a significant difference: the control group vs. the examined group in the white gastrocnemius muscle; ^bp < 0.05 indicates a significant difference: HFD vs. HFD + CBD in the white gastrocnemius muscle. 14:0 (myristic acid); 16:0 (palmitic acid); 16:1n7 (palmitoleic acid); 18:0 (stearic acid); 18:1n9 (oleic acid); 20:0 (arachidic acid); 22:0 (behenic acid); 24:0 (lignoceric acid); 24:1n9 (nervonic acid).

The content of polyunsaturated fatty acids (PUFA): 18:2n6 (linoleic acid), 18:3n3 (α -linolenic acid), 20:4n6 (arachidonic acid), 20:5n3 (eicosapentaenoic acid) and 20:6n3 (docosahexaenoic acid) in the FFA fraction in the white gastrocnemius muscle was published in our previous publication: Bielawiec et al. (doi: 10.3390/nu13051603).

Supplementary Table S2. Individual fatty acids content in the DAG fraction (nmol/g of wet tissue) in the white gastrocnemius muscle in the control (standard diet) and high-fat diet (HFD) groups after two-week cannabidiol (CBD) treatment.

Fatty acid	Control	CBD	HFD	HFD + CBD
14:0	27.45 ± 7.59	33.69 ± 9.78	23.27 ± 5.98	28.56 ± 4.33
16:0	217.01 ± 34.90	169.69 ± 34.26 ^a	156.80 ± 23.56 ^a	173.11 ± 23.86 ^a
16:1n7	8.73 ± 0.82	6.41 ± 1.24 ^a	6.26 ± 1.58 ^a	5.57 ^a ± 1.07
18:0	81.82 ± 12.93	68.40 ± 11.85 ^a	56.81 ± 6.84 ^a	90.97 ± 14.38 ^b
18:1n9	56.23 ± 10.02	31.46 ± 4.80 ^a	53.88 ± 9.58	53.34 ± 9.15
20:0	2.29 ± 0.24	1.85 ± 0.46 ^a	2.31 ± 0.63	1.78 ± 0.26 ^{a,b}
22:0	1.59 ± 0.20	1.50 ± 0.30	1.57 ± 0.51	1.53 ± 0.24
24:0	3.18 ± 0.32	2.92 ± 0.48	3.09 ± 0.42	2.51 ± 0.39 ^{a,b}
24:1n9	1.11 ± 0.24	0.85 ± 0.16 ^a	1.19 ± 0.35	0.89 ± 0.13 ^{a,b}

The data are expressed as mean values ± SD, n = 10 in each group. ^ap < 0.05 indicates a significant difference: the control group vs. the examined group in the white gastrocnemius muscle; ^bp < 0.05 indicates a significant difference: HFD vs. HFD + CBD in the white gastrocnemius muscle. 14:0 (myristic acid); 16:0 (palmitic acid); 16:1n7 (palmitoleic acid);

18:0 (stearic acid); 18:1n9 (oleic acid); 20:0 (arachidic acid); 22:0 (behenic acid); 24:0 (lignoceric acid); 24:1n9 (nervonic acid).

The content of polyunsaturated fatty acids (PUFA): 18:2n6 (linoleic acid), 18:3n3 (α -linolenic acid), 20:4n6 (arachidonic acid), 20:5n3 (eicosapentaenoic acid) and 20:6n3 (docosahexaenoic acid) in the FFA fraction in the white gastrocnemius muscle was published in our previous publication: Bielawiec et al. (doi: 10.3390/nu13051603).

Supplementary Table S3. Individual fatty acids content in the TAG fraction (nmol/g of wet tissue) in the white gastrocnemius muscle in the control (standard diet) and high-fat diet (HFD) groups after two-week cannabidiol (CBD) treatment.

Fatty acid	Control	CBD	HFD	HFD + CBD
14:0	70.18 ± 12.62	44.34 ± 9.81 ^a	120.34 ± 21.34 ^a	90.55 ± 14.11 ^{a,b}
16:0	910.56 ± 168.78	605.37 ± 112.01 ^a	1726.44 ± 588.80 ^a	1596.05 ± 214.60 ^a
16:1n7	130.19 ± 19.27	106.15 ± 38.12	148.07 ± 48.62	130.50 ± 43.64
18:0	166.28 ± 31.11	114.17 ± 18.22 ^a	489.56 ± 158.25 ^a	419.55 ± 71.98 ^{a,b}
18:1n9	523.38 ± 130.35	337.36 ± 83.95 ^a	2418.58 ± 653.68 ^a	1634.38 ± 300.92 ^{a,b}
20:0	5.24 ± 1.46	4.81 ± 0.55	6.15 ± 1.34	5.71 ± 1.08
22:0	5.37 ± 1.49	4.15 ± 1.12 ^a	5.61 ± 1.59	6.50 ± 1.46
24:0	5.50 ± 1.44	5.64 ± 0.70	4.21 ± 1.03 ^a	2.18 ± 0.90 ^{a,b}
24:1n9	3.83 ± 1.22	2.64 ± 0.80 ^a	2.91 ± 1.14	3.15 ± 1.22

The data are expressed as mean values ± SD, n = 10 in each group. ^ap < 0.05 indicates a significant difference: the control group vs. the examined group in the white gastrocnemius muscle; ^bp < 0.05 indicates a significant difference: HFD vs. HFD + CBD in the white gastrocnemius muscle. 14:0 (myristic acid); 16:0 (palmitic acid); 16:1n7 (palmitoleic acid); 18:0 (stearic acid); 18:1n9 (oleic acid); 20:0 (arachidic acid); 22:0 (behenic acid); 24:0 (lignoceric acid); 24:1n9 (nervonic acid).

The content of polyunsaturated fatty acids (PUFA): 18:2n6 (linoleic acid), 18:3n3 (α -linolenic acid), 20:4n6 (arachidonic acid), 20:5n3 (eicosapentaenoic acid) and 20:6n3 (docosahexaenoic acid) in the FFA fraction in the white gastrocnemius muscle was published in our previous publication: Bielawiec et al. (doi: 10.3390/nu13051603).

Supplementary Table S4. Individual fatty acids content in the PL fraction (nmol/g of wet tissue) in the white gastrocnemius muscle in the control (standard diet) and high-fat diet (HFD) groups after two-week cannabidiol (CBD) treatment.

Fatty acid	Control	CBD	HFD	HFD + CBD
14:0	82.48 ± 9.72	55.26 ± 7.50 ^a	67.81 ± 7.20 ^a	57.11 ± 5.99 ^{a,b}
16:0	6319.50 ± 336.78	5608.23 ± 1109.50 ^a	5819.05 ± 236.40 ^a	5908.39 ± 1395.59
16:1n7	151.99 ± 21.81	127.52 ± 12.86 ^a	87.13 ± 6.31 ^a	96.00 ± 11.85 ^{a,b}
18:0	3216.55 ± 157.16	3196.03 ± 166.30	3292.10 ± 142.70 ^a	3602.94 ± 491.54
18:1n9	739.71 ± 48.41	580.55 ± 31.32 ^a	738.69 ± 26.00	853.98 ± 95.24 ^{a,b}
20:0	12.80 ± 1.70	12.43 ± 1.37	11.85 ± 2.18	11.41 ± 2.03
22:0	15.30 ± 4.48	15.07 ± 4.42	17.10 ± 3.47	15.18 ± 3.56
24:0	14.11 ± 2.75	12.94 ± 1.98	13.79 ± 2.72	12.87 ± 3.53
24:1n9	12.75 ± 1.97	13.84 ± 2.48	11.87 ± 2.25	9.93 ± 2.09 ^{a,b}

The data are expressed as mean values \pm SD, n = 10 in each group. ^ap < 0.05 indicates a significant difference: the control group vs. the examined group in the white gastrocnemius muscle; ^bp < 0.05 indicates a significant difference: HFD vs. HFD + CBD in the white gastrocnemius muscle. 14:0 (myristic acid); 16:0 (palmitic acid); 16:1n7 (palmitoleic acid); 18:0 (stearic acid); 18:1n9 (oleic acid); 20:0 (arachidic acid); 22:0 (behenic acid); 24:0 (lignoceric acid); 24:1n9 (nervonic acid).

The content of polyunsaturated fatty acids (PUFA): 18:2n6 (linoleic acid), 18:3n3 (α -linolenic acid), 20:4n6 (arachidonic acid), 20:5n3 (eicosapentaenoic acid) and 20:6n3 (docosahexaenoic acid) in the FFA fraction in the white gastrocnemius muscle was published in our previous publication: Bielawiec et al. (doi: 10.3390/nu13051603).

Red skeletal muscle

Supplementary Table S5. Individual fatty acids content in the FFA fraction (nmol/g of wet tissue) in the red gastrocnemius muscle in the control (standard diet) and high-fat diet (HFD) groups after two-week cannabidiol (CBD) treatment.

Fatty acid	Control	CBD	HFD	HFD + CBD
14:0	29.62 \pm 4.29	31.88 \pm 4.35	42.44 \pm 4.52 ^a	32.65 \pm 5.52 ^b
16:0	268.41 \pm 48.79	315.23 \pm 14.52 ^a	413.63 \pm 39.69 ^a	380.31 \pm 31.76 ^{a,b}
16:1n7	26.71 \pm 5.23	30.80 \pm 6.43	35.90 \pm 5.49 ^a	28.60 \pm 2.55 ^b
18:0	97.99 \pm 10.60	126.61 \pm 12.56 ^a	146.67 \pm 10.99 ^a	167.47 \pm 19.87 ^{a,b}
18:1n9	175.30 \pm 20.16	225.88 \pm 26.57 ^a	713.96 \pm 61.80 ^a	667.55 \pm 39.57 ^a
20:0	1.94 \pm 0.14	2.77 \pm 0.42 ^a	2.23 \pm 0.33 ^a	2.76 \pm 0.35 ^{a,b}
22:0	1.32 \pm 0.18	2.06 \pm 0.36 ^a	1.66 \pm 0.35 ^a	1.61 \pm 0.32 ^a
24:0	4.01 \pm 0.83	6.24 \pm 0.75 ^a	6.19 \pm 0.94 ^a	5.27 \pm 0.97 ^a
24:1n9	1.04 \pm 0.23	1.35 \pm 0.24 ^a	1.28 \pm 0.32	1.05 \pm 0.27

The data are expressed as mean values \pm SD, n = 10 in each group. ^ap < 0.05 indicates a significant difference: the control group vs. the examined group in the red gastrocnemius muscle; ^bp < 0.05 indicates a significant difference: HFD vs. HFD + CBD in the red gastrocnemius muscle. 14:0 (myristic acid); 16:0 (palmitic acid); 16:1n7 (palmitoleic acid); 18:0 (stearic acid); 18:1n9 (oleic acid); 20:0 (arachidic acid); 22:0 (behenic acid); 24:0 (lignoceric acid); 24:1n9 (nervonic acid).

The content of polyunsaturated fatty acids (PUFA): 18:2n6 (linoleic acid), 18:3n3 (α -linolenic acid), 20:4n6 (arachidonic acid), 20:5n3 (eicosapentaenoic acid) and 20:6n3 (docosahexaenoic acid) in the FFA fraction in the red gastrocnemius muscle was published in our previous publication: Bielawiec et al. (doi: 10.3390/nu13051603).

Supplementary Table S6. Individual fatty acids content in the DAG fraction (nmol/g of wet tissue) in the red gastrocnemius muscle in the control (standard diet) and high-fat diet (HFD) groups after two-week cannabidiol (CBD) treatment.

Fatty acid	Control	CBD	HFD	HFD + CBD
14:0	29.93 ± 12.64	30.67 ± 7.10	42.33 ± 16.52	31.87 ± 8.89
16:0	214.52 ± 48.79	213.12 ± 14.52	273.88 ± 39.69 ^a	233.31 ± 10.56 ^b
16:1n7	7.29 ± 1.56	7.94 ± 1.23	8.72 ± 0.79 ^a	8.46 ± 0.67
18:0	75.28 ± 8.65	95.68 ± 8.14 ^a	115.72 ± 10.72 ^a	138.97 ± 10.58 ^{a,b}
18:1n9	55.14 ± 16.18	49.84 ± 5.08	215.66 ± 31.77 ^a	183.39 ± ^{a,b}
20:0	1.83 ± 0.42	2.11 ± 0.16	2.61 ± 0.62 ^a	2.60 ± 0.56 ^a
22:0	1.31 ± 0.24	1.41 ± 0.23	1.59 ± 0.43	1.77 ± 0.51
24:0	2.02 ± 0.16	2.39 ± 0.34 ^a	2.32 ± 0.76	2.91 ± 0.84 ^a
24:1n9	0.60 ± 0.19	0.95 ± 0.25 ^a	0.95 ± 0.33 ^a	1.01 ± 0.23 ^b

The data are expressed as mean values ± SD, n = 10 in each group. ^ap < 0.05 indicates a significant difference: the control group vs. the examined group in the red gastrocnemius muscle; ^bp < 0.05 indicates a significant difference: HFD vs. HFD + CBD in the red gastrocnemius muscle. 14:0 (myristic acid); 16:0 (palmitic acid); 16:1n7 (palmitoleic acid); 18:0 (stearic acid); 18:1n9 (oleic acid); 20:0 (arachidic acid); 22:0 (behenic acid); 24:0 (lignoceric acid); 24:1n9 (nervonic acid).

The content of polyunsaturated fatty acids (PUFA): 18:2n6 (linoleic acid), 18:3n3 (α -linolenic acid), 20:4n6 (arachidonic acid), 20:5n3 (eicosapentaenoic acid) and 20:6n3 (docosahexaenoic acid) in the FFA fraction in the red gastrocnemius muscle was published in our previous publication: Bielawiec et al. (doi: 10.3390/nu13051603).

Supplementary Table S7. Individual fatty acids content in the TAG fraction (nmol/g of wet tissue) in the red gastrocnemius muscle in the control (standard diet) and high-fat diet (HFD) groups after two-week cannabidiol (CBD) treatment.

Fatty acid	Control	CBD	HFD	HFD + CBD
14:0	64.68 ± 24.96	87.88 ± 19.25 ^a	175.62 ± 63.99 ^a	109.04 ± 20.32 ^{a,b}
16:0	985.04 ± 518.52	1148.96 ± 170.47	2402.32 ± 571.72 ^a	2243.00 ± 417.58 ^a
16:1n7	229.87 ± 177.07	148.85 ± 29.75	144.92 ± 88.65	95.62 ± 41.97 ^a
18:0	204.15 ± 98.17	171.40 ± 12.28	819.29 ± 224.85 ^a	687.64 ± 88.36 ^a
18:1n9	383.66 ± 218.08	563.89 ± 149.13	1898.44 ± 520.64 ^a	1916.44 ± 496.42 ^a
20:0	4.86 ± 1.40	4.42 ± 1.16	11.16 ± 2.54 ^a	12.67 ± 2.06 ^a
22:0	6.30 ± 1.17	6.17 ± 2.00	8.12 ± 2.04 ^a	8.73 ± 1.78 ^a
24:0	3.21 ± 0.80	3.26 ± 1.32	3.15 ± 1.46	3.15 ± 0.74
24:1n9	3.76 ± 0.64	3.07 ± 1.08	3.07 ± 0.85	4.31 ± 1.23 ^b

The data are expressed as mean values ± SD, n = 10 in each group. ^ap < 0.05 indicates a significant difference: the control group vs. the examined group in the red gastrocnemius muscle; ^bp < 0.05 indicates a significant difference: HFD vs. HFD + CBD in the red gastrocnemius muscle. 14:0 (myristic acid); 16:0 (palmitic acid); 16:1n7 (palmitoleic acid); 18:0 (stearic acid); 18:1n9 (oleic acid); 20:0 (arachidic acid); 22:0 (behenic acid); 24:0 (lignoceric acid); 24:1n9 (nervonic acid).

The content of polyunsaturated fatty acids (PUFA): 18:2n6 (linoleic acid), 18:3n3 (α -linolenic acid), 20:4n6 (arachidonic acid), 20:5n3 (eicosapentaenoic acid) and 20:6n3 (docosahexaenoic

acid) in the FFA fraction in the red gastrocnemius muscle was published in our previous publication: Bielawiec et al. (doi: 10.3390/nu13051603).

Supplementary Table S8. Individual fatty acids content in the PL fraction (nmol/g of wet tissue) in the red gastrocnemius muscle in the control (standard diet) and high-fat diet (HFD) groups after two-week cannabidiol (CBD) treatment.

Fatty acid	Control	CBD	HFD	HFD + CBD
14:0	79.31 ± 12.92	73.20 ± 9.16	77.62 ± 12.21	79.21 ± 5.08
16:0	6170.28 ± 362.27	6367.10 ± 326.43	6177.77 ± 602.57	7524.57 ± 254.85 ^{a,b}
16:1n7	155.33 ± 16.02	174.84 ± 23.24 ^a	106.52 ± 6.73 ^a	121.46 ± 8.13 ^{a,b}
18:0	5028.22 ± 440.77	5556.33 ± 236.17 ^a	6338.56 ± 179.13 ^a	7599.20 ± 464.05 ^{a,b}
18:1n9	919.62 ± 60.63	892.17 ± 74.69	1377.28 ± 69.71 ^a	1705.48 ± 107.44 ^{a,b}
20:0	14.51 ± 1.32	17.20 ± 1.55 ^a	15.04 ± 2.75	15.39 ± 1.45
22:0	15.90 ± 2.48	19.10 ± 3.77 ^a	15.76 ± 1.66	16.93 ± 1.94
24:0	12.94 ± 3.60	13.97 ± 3.09	16.05 ± 4.15	16.77 ± 2.79 ^a
24:1n9	20.79 ± 1.76	12.38 ± 1.60 ^a	17.25 ± 2.99 ^a	15.11 ± 2.35 ^a

The data are expressed as mean values ± SD, n = 10 in each group. ^ap < 0.05 indicates a significant difference: the control group vs. the examined group in the red gastrocnemius muscle; ^bp < 0.05 indicates a significant difference: HFD vs. HFD + CBD in the red gastrocnemius muscle. 14:0 (myristic acid); 16:0 (palmitic acid); 16:1n7 (palmitoleic acid); 18:0 (stearic acid); 18:1n9 (oleic acid); 20:0 (arachidic acid); 22:0 (behenic acid); 24:0 (lignoceric acid); 24:1n9 (nervonic acid).

The content of polyunsaturated fatty acids (PUFA): 18:2n6 (linoleic acid), 18:3n3 (α -linolenic acid), 20:4n6 (arachidonic acid), 20:5n3 (eicosapentaenoic acid) and 20:6n3 (docosahexaenoic acid) in the FFA fraction in the red gastrocnemius muscle was published in our previous publication: Bielawiec et al. (doi: 10.3390/nu13051603).