

Supplementary Materials

Table S1. Individual plasma free fatty acids concentration in mice fed control and high-fat diet.

	C14:0	C16:0	C16:1	C18:0	C18:1	C18:2	C20:0	C20:2	C20:4	C22:0	C22:6	C24:0	C24:1
Control	7.08±1.46	70.66±8.03	5.99±1.39	30.02±2.39	69.23±7.29	61.29±11.03	1.09±0.20	2.32±0.37	9.57±1.44	3.90±0.31	1.67±0.20	4.04±1.04	0.16±0.02
HFD	16.81±1.09 ^a	95.14±10.59 ^a	5.27±0.39	60.99±3.99 ^a	141.35±8.55 ^a	137.72±6.58 ^a	3.97±0.30 ^a	2.52±0.27	19.58±1.00 ^a	11.19±0.69 ^a	2.19±0.17 ^a	8.14±0.64 ^a	0.36±0.06 ^a

Values are mean $\mu\text{mol/l}$ of plasma \pm SD; $n = 8$ per group; $a - p < 0.05$ vs Control

Table S2. Impact of GPAT gene silencing on the content of individual acyl-CoA's in mouse gastrocnemius muscle.

	C2:0	C3:0	C4:0	C14:0	C16:0	C16:1
Control	1.15±0.17	16.59±2.26	0.016±0.004	0.12±0.01	0.85±0.10	0.64±0.06
HFD(+GPAT)	1.69±0.25 ^a	33.14±5.34 ^a	0.028±0.003 ^a	0.20±0.02 ^a	0.99±0.13 ^a	0.68±0.07
HFD(-GPAT)	2.18±0.19 ^{a,b}	22.20±2.68 ^{a,b}	0.040±0.006 ^{a,b}	0.26±0.03 ^{a,b}	1.15±0.10 ^{a,b}	0.79±0.04 ^{a,b}

	C18:0	C18:1	C18:2	C20:0	C22:0	C24:0	C24:1
	0.73±0.09	2.59±0.33	1.54±0.18	0.017±0.003	0.022±0.004	0.028±0.004	0.013±0.002
	1.20±0.15 ^a	2.80±0.34	1.96±0.27 ^a	0.019±0.004	0.033±0.005 ^a	0.031±0.005	0.009±0.001
	1.73±0.09 ^{a,b}	3.37±0.38 ^{a,b}	2.91±0.34 ^{a,b}	0.028±0.004 ^{a,b}	0.039±0.008 ^{a,b}	0.039±0.007 ^{a,b}	0.012±0.001 ^b

Values are mean pmol/mg of tissue ± SD; *n* = 8 per group; a – *p* < 0.05 vs Control; b – *p* < 0.05 vs HFD(+GPAT).

Table S3. Impact of GPAT gene silencing on the level of individual short-chain acyl-carnitines in mouse gastrocnemius muscle.

	C2	C3	C4	C5	C5DC	C6	C8	C10	C12
Control	48.14±5.39	3.16±0.34	3.82±0.48	2.41±0.33	0.015±0.0024	0.79±0.09	0.24±0.05	0.17±0.03	0.26±0.02
HFD_(+GPAT)	55.04±6.19 ^a	3.80±0.40 ^a	4.42±0.46 ^a	2.80±0.37 ^a	0.018±0.0020 ^a	0.95±0.16 ^a	0.28±0.03 ^a	0.21±0.04 ^a	0.31±0.03 ^a
HFD_(-GPAT)	45.44±5.21 ^b	3.42±0.24 ^b	3.63±0.27 ^b	2.31±0.40 ^b	0.016±0.0022	0.81±0.11 ^b	0.21±0.03 ^b	0.17±0.04	0.23±0.03 ^{a,b}

Values are mean pmol/mg of tissue ± SD; *n* = 8 per group; a – *p* < 0.05 vs Control; b – *p* < 0.05 vs HFD_(+GPAT).

Table S4. Impact of GPAT gene silencing on the level of individual long-chain acyl-carnitines in mouse gastrocnemius muscle.

	C14	C16	C18	C18:1
Control	1.47±0.20	2.46±0.24	0.72±0.10	6.94±0.59
HFD_(+GPAT)	1.19±0.18 ^a	2.93±0.33 ^a	1.23±0.14 ^a	7.31±0.51
HFD_(-GPAT)	1.28±0.20	3.33±0.37 ^{a,b}	1.36±0.07 ^{a,b}	8.40±0.47 ^{a,b}

Values are mean pmol/mg of tissue ± SD; *n* = 8 per group; a – *p* < 0.05 vs Control; b – *p* < 0.05 vs HFD_(+GPAT).

Table S5. The impact of GPAT silencing on the content of ceramide molecular species in mouse gastrocnemius muscle.

	d18:1/C14:0	d18:1/C16:0	d18:1/C18:0	d18:1/C18:1	d18:1/C20:0	d18:1/C22:0	d18:1/C24:0	d18:1/C24:1
Control	0.029±0.003	1.94±0.24	16.93±1.53	0.56±0.09	0.27±0.04	0.77±0.13	1.24±0.16	3.83±0.44
HFD_(+GPAT)	0.034±0.008	3.20±0.35 ^a	30.27±3.42 ^a	0.67±0.05 ^a	0.57±0.10 ^a	1.45±0.21 ^a	2.55±0.32 ^a	5.08±0.59 ^a
HFD_(-GPAT)	0.041±0.004 ^{a,b}	3.43±0.30 ^a	32.62±4.15 ^a	0.71±0.06 ^a	0.66±0.13 ^a	1.55±0.25 ^a	2.68±0.19 ^a	5.19±0.58 ^a

Values are mean pmol/mg of tissue +/- SD; n=8 per group; a - p<0.05 vs Control; b - p<0.05 vs HFD_(+GPAT).