

SUPPLEMENTARY DATA

Cognitive Impairment and Metabolite Profile Alterations in the Hippocampus and Cortex of Male and Female Mice Exposed to a Fat and Sugar-Rich Diet are Normalized by Diet Reversal

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Supplementary table 1. ANOVA P-values for metabolite concentrations in the hippocampus and cortex during 1 to 16 weeks of HFHSD exposure.

Metabolite	Brain area	Interaction	Time	Diet
Alanine	hippocampus	P=0.008	P<0.001	P=0.371
	cortex	P<0.001	P<0.001	P<0.001
Aspartate	hippocampus	P=0.501	P=0.764	P=0.256
	cortex	P=0.394	P=0.703	P=0.572
Creatine	hippocampus	P=0.061	P<0.001	P<0.001
	cortex	P=0.747	P=0.029	P=0.431
Phosphocreatine	hippocampus	P<0.001	P=0.016	P=0.005
	cortex	P=0.743	P<0.001	P=0.857
GABA	hippocampus	P=0.003	P=0.200	P=0.199
	cortex	P=0.528	P=0.047	P=0.880
Glutamine	hippocampus	P=0.390	P=0.023	P=0.018
	cortex	P=0.313	P=0.002	P<0.001
Glutamate	hippocampus	P<0.001	P=0.029	P<0.001
	cortex	P=0.072	P<0.001	P=0.421
Glutathione	hippocampus	P=0.016	P=0.398	P=0.296
	cortex	P=0.184	P<0.001	P=0.015
Glycine	hippocampus	P=0.243	P=0.481	P=0.624
	cortex	P=0.542	P<0.001	P=0.002
<i>myo</i> -inositol	hippocampus	P=0.026	P=0.063	P=0.242
	cortex	P=0.750	P<0.001	P=0.528
Lactate	hippocampus	P<0.001	P<0.001	P<0.001
	cortex	P=0.367	P=0.002	P=0.329
NAA	hippocampus	P<0.001	P<0.001	P<0.001
	cortex	P=0.033	P=0.034	P=0.113
Taurine	hippocampus	P<0.001	P<0.001	P<0.001
	cortex	P=0.989	P<0.001	P=0.281
Ascorbate	hippocampus	P=0.084	P=0.001	P=0.888
	cortex	P=0.989	P<0.001	P=0.281
Glucose	hippocampus	P=0.484	P<0.001	P=0.069
	cortex	P=0.680	P=0.001	P=0.011
NAAG	hippocampus	P=0.042	P=0.364	P=0.151
	cortex	P=0.424	P=0.573	P=0.351
PE	hippocampus	P=0.716	P=0.138	P=0.229
	cortex	P=0.602	P=0.042	P=0.474
Total choline	hippocampus	P=0.042	P=0.042	P=0.042
	cortex	P=0.165	P=0.042	P=0.632
Total creatine	hippocampus	P=0.042	P=0.042	P=0.042
	cortex	P=0.661	P=0.042	P=0.768
PCr/Cr	hippocampus	P=0.042	P=0.274	P=0.932
	cortex	P=0.836	P=0.042	P=0.560

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Supplementary table 2. ANOVA P-values for metabolite concentrations in the hippocampus and cortex at 24 weeks of the study.

Metabolite	Brain area	ANOVA at 24 weeks
Alanine	hippocampus	P=0.966
	cortex	P=0.042
Aspartate	hippocampus	P=0.343
	cortex	P=0.580
Creatine (Cr)	hippocampus	P=0.776
	cortex	P=0.042
Phosphocreatine (PCr)	hippocampus	P=0.042
	cortex	P=0.903
GABA	hippocampus	P=0.042
	cortex	P=0.781
Glutamine	hippocampus	P=0.150
	cortex	P=0.042
Glutamate	hippocampus	P<0.001
	cortex	P=0.069
Glutathione	hippocampus	P=0.042
	cortex	P=0.042
Glycine	hippocampus	P=0.205
	cortex	P=0.042
<i>myo</i> -inositol	hippocampus	P=0.042
	cortex	P=0.138
Lactate	hippocampus	P=0.042
	cortex	P=0.058
NAA	hippocampus	P=0.064
	cortex	P=0.042
Taurine	hippocampus	P=0.042
	cortex	P=0.542
Ascorbate	hippocampus	P=0.433
	cortex	P=0.533
Glucose	hippocampus	P=0.490
	cortex	P=0.644
NAAG	hippocampus	P=0.819
	cortex	P=0.061
PE	hippocampus	P=0.042
	cortex	P=0.938
Total choline	hippocampus	P=0.063
	cortex	P=0.326
Total creatine	hippocampus	P=0.042
	cortex	P=0.154
PCr/Cr	hippocampus	P=0.122
	cortex	P=0.042