

Appendix: QTL effects fine-mapped on proximal chromosome 13 in the LGXSM Advanced Intercross Line (AIL) of mice. ‘a’ is the additive genotypic value (half the difference between homozygotes) and ‘d’ is the dominance genotypic value (difference between the heterozygote and midpoint of homozygotes).

Trait	Position to nearest proximal marker	Position to centromere	Support Region	LOD	a	SE(a)	Prob(a)	D	SE(d)	Prob(d)	% Var
<b>Both Diets Analyzed Together</b>											
Heart weight	<i>D13Mit135+2</i>	78	62-86	2.35	-3.47×10 <sup>-03</sup>	1.61×10 <sup>-03</sup>	0.0312	-5.86×10 <sup>-03</sup>	2.33×10 <sup>-03</sup>	0.0121	0.3028
Spleen weight	<i>D13Mit163</i>	86	80-86	2.06	-8.98×10 <sup>-03</sup>	4.01×10 <sup>-03</sup>	0.0254	-0.0114	5.70×10 <sup>-03</sup>	0.0465	0.0349
10 week AUC	<i>D13Mit134</i>	42	38-50	4.07	-920	290	1.65×10 <sup>-03</sup>	1159	414	5.35×10 <sup>-03</sup>	0.258
Post-weaning growth, females	<i>D13Mit80+6</i>	32	12-50	2.22	7.34×10 <sup>-03</sup>	7.91×10 <sup>-03</sup>	0.354	-0.041	0.012	6.62×10 <sup>-04</sup>	0.127
Post-weaning growth, males	<i>D13Mit115+4</i>	74	68-86	2.39	-0.0145	6.33×10 <sup>-03</sup>	0.0226	-0.0231	8.87×10 <sup>-03</sup>	9.34×10 <sup>-03</sup>	0.198
Inguinal fat pad, males	<i>D13Mit115+4</i>	74	72-82	2.48	-0.150	0.0908	0.0993	-0.388	0.127	2.40×10 <sup>-03</sup>	0.219
20 week AUC, males	<i>D13Mit163</i>	86	66-86	2.11	-1991	656	0.0027	1039	965	0.282	0.216
<b>Low Fat Diet</b>											
Serum cholesterol	<i>D13Mit1+6</i>	6	0-18	3.07	-4.03	2.74	0.141	-14.9	4.08	2.86×10 <sup>-04</sup>	0.0542
Heart weight	<i>D13Mit135+2</i>	78	66-86	2.50	-3.72×10 <sup>-03</sup>	2.26×10 <sup>-03</sup>	0.101	-0.0100	3.31×10 <sup>-03</sup>	2.60×10 <sup>-03</sup>	0.287
Kidney weight	<i>D13Mit207+4</i>	68	60-78	2.89	2.23×10 <sup>-03</sup>	3.09×10 <sup>-03</sup>	0.472	-0.0162	4.47×10 <sup>-03</sup>	3.33×10 <sup>-04</sup>	0.606
Post-weaning growth, females	<i>D13Mit80+8</i>	34	28-48	4.04	8.50×10 <sup>-03</sup>	0.0106	0.422	-0.0766	0.0161	3.40×10 <sup>-06</sup>	0.0836
Serum cholesterol, females	<i>D13Mit302</i>	24	0-30	2.30	1.22	3.46	0.724	-16.8	4.86	6.30×10 <sup>-04</sup>	0.0458
20 week basal glucose, females	<i>D13Mit115+4</i>	74	72-86	2.93	12.5	3.43	4.00×10 <sup>-04</sup>	-3.43	5.12	0.505	0.110

Reproductive fat pad to body ratio, females	D13Mit134+2	44	32-56	2.32	-8.21×10 <sup>-03</sup>	0.0198	0.679	-0.0955	0.0294	1.30×10 <sup>-03</sup>	0.0414
Pre-weaning growth, males	D13Mit1+14	14	0-42	2.22	0.0397	0.0133	3.08×10 <sup>-03</sup>	0.0232	0.0196	0.236	0.0421
Liver weight, males	D13Mit1+8	8	0-32	2.20	0.0763	0.0334	0.0231	-0.113	0.0491	0.0224	0.0409
Serum insulin, males	D13Mit1+14	14	0-38	2.63	1.03	0.322	1.49×10 <sup>-03</sup>	-0.754	0.476	0.115	0.0495
Renal fat pad weight, males	D13Mit1+22	22	14-36	3.59	0.169	0.0432	1.20×10 <sup>-04</sup>	-0.0671	0.0604	0.2686	0.0622
<b>High Fat Diet</b>											
Mesenteric fat pad to body ratio, females	D13Mit163	86	82-86	2.08	-0.0170	0.0136	0.215	-0.0531	0.0189	5.36×10 <sup>-03</sup>	0.0377
Serum triglycerides, males	D13Mit163	86	80-86	2.40	17.4	5.90	3.42×10 <sup>-03</sup>	11.8	8.37	0.160	0.0443
Liver weight, males	D13Mit80	26	0-36	2.30	-0.208	0.0727	4.67×10 <sup>-03</sup>	0.168	0.104	0.106	0.0412
20 week AUC, males	D13Mit163	86	76-86	2.64	-3951	1111	5.70×10 <sup>-04</sup>	1581	1623	0.332	0.107
<b>Diet by Gene Interactions</b>											
Reproductive fat pad weight	D13Mit1+22	22	8-40	2.34	-0.233	0.112	0.0381	0.483	0.158	2.33×10 <sup>-03</sup>	0.233
Liver weight, females	D13Mit134+8	50	34-70	2.18	0.0198	4.46	0.717	0.232	7.46×10 <sup>-03</sup>	8.27×10 <sup>-03</sup>	0.384
Mesenteric fat pad to total fat ratio, females	D13Mit134+18	60	48-74	2.26	-0.0121	0.830	0.315	-0.0327	6.67×10 <sup>-03</sup>	0.0708	0.139
Pre-weaning growth, males	D13Mit1+12	12	0-38	2.56	-7.52×10 <sup>-03</sup>	1.27	0.543	-9.09×10 <sup>-03</sup>	0.0150	0.618	1.43×10 <sup>-03</sup>
Serum triglycerides, males	D13Mit163	86	76-86	2.15	17.4	26.3	4.66×10 <sup>-04</sup>	11.8	10.4	0.0933	0.0497

Serum insulin, males	D13Mit1+12	12	2-50	3.51	-1.61	1.42	$1.17 \times 10^{-03}$	0.812	1.44	0.266	0.209
Liver weight, males	D13Mit1+16	16	2-32	3.50	-0.241	0.528	$1.16 \times 10^{-04}$	0.148	0.150	0.108	0.463