

**TABLE S1****Replication of local and distal eQTLs between crosses, tissues and sexes****A**

eQTL counts	adipose	brain	liver	muscle
cross II LOD> 2.7	4315	4806	4387	4007
cross II LOD> 4.3	2691	3281	2788	2459
cross II LOD> 6	1914	2663	2199	1938
cross II LOD> 2.7 vs cross II LOD> 2.7	1977	2734	2429	2103
cross II LOD> 4.3 vs cross II LOD> 2.7	1710	2461	2142	1835
cross II LOD> 6 vs cross II LOD> 2.7	1473	2224	1908	1636
cross II LOD> 2.7	4079	4783	4828	4119
cross II LOD> 4.3	2406	3168	3246	2517
cross II LOD> 6	1817	2591	2608	2008
cross II LOD> 2.7 vs cross II LOD> 2.7	1977	2734	2429	2103
cross II LOD> 4.3 vs cross II LOD> 2.7	1693	2431	2185	1845
cross II LOD> 6 vs cross II LOD> 2.7	1482	2194	2009	1673

**B**

eQTL preservation (percent)		adipose	brain	liver	muscle
LOD> 2.7	cross I	48.47	57.16	50.31	51.06
	cross II	45.82	56.89	55.37	52.48
LOD> 4.3	cross I	70.37	76.74	67.31	73.30
	cross II	63.55	75.01	76.83	74.62
LOD> 6	cross I	81.56	84.68	77.03	83.32
	cross II	76.96	83.51	86.77	84.42

**C**

eQTL counts	adipose	brain	liver	muscle
cross I LOD > 2.7	209660	214555	229805	208024
cross I LOD > 4.3	34340	32788	41807	28871
cross I LOD > 6	4501	4260	6002	3117
cross I LOD > 2.7 vs cross II LOD > 2.7	34942	38524	45933	38968
cross I LOD > 4.3 vs cross II LOD > 2.7	6478	7088	9576	6120
cross I LOD > 6 vs cross II LOD > 2.7	1138	1754	1977	1090
cross II LOD > 2.7	185476	197153	218348	199599
cross II LOD > 4.3	36552	32823	41648	32118
cross II LOD > 6	5668	4554	7304	4537
cross II LOD > 2.7 vs cross I LOD > 2.7	34942	38524	45933	38968
cross II LOD > 4.3 vs cross I LOD > 2.7	7260	7835	10236	6745
cross II LOD > 6 vs cross I LOD > 2.7	1425	1991	2504	1104

**D**

eQTL preservation (percent)		adipose	brain	liver	muscle
LOD > 2.7	cross I	16.67	17.96	19.99	18.73
	cross II	18.84	19.54	21.04	19.52
LOD > 4.3	cross I	18.86	21.62	22.91	21.20
	cross II	19.86	23.87	24.58	21.00
LOD > 6	cross I	25.28	41.17	32.94	34.97
	cross II	25.14	43.72	34.28	24.33

The percent and count of eQTLs that replicated between crosses, tissues and sex at various LOD thresholds is shown. The eQTLs at LOD > 2.7, 4.3, and 6 of the mouse crosses were screened for detection at LOD > 2.7 in their respective comparison crosses. The percent indicates the degree of replication of eQTLs at LOD > 2.7, 4.3 and 6 in cross I that overlap in cross II at LOD > 2.7 over the total number of eQTLs at LOD > 4.3 detected in cross I and vice versa. For example, at LOD > 6, over 80% of the local eQTLs in cross I were preserved in cross II of the adipose tissue.