**Table S3**. Association of nuclear SNPs with weight1 using family-based quantitative trait linkage disequilibrium (QTLD) analysis2.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SNP** |  | ***P*-value (weight2)** |  | ***P*-value (weight3)** |  | ***P*-value (weight4)** |
|  | **Stratification3** | **Measured genotype** | **QTDT4** | **QTLD** |  | **Stratification** | **Measured genotype** | **QTDT4** | **QTLD** |  | **Stratification** | **Measured genotype** | **QTDT4** | **QTLD** |
| snp1 |  | 0.17378 | 0.52912 | 0.80523 | 0.80523 |  | 0.23715 | 0.44513 | 0.65837 | 0.65837 |  | 0.15184 | 0.28461 | 0.48116 | 0.48120 |
| snp2 |  | 0.01923\* | 0.71490 | 0.92088 | 0.92089 |  | 0.16293 | 0.87089 | 0.67652 | 0.67655 |  | 0.57230 | 0.31046 | 0.27242 | 0.27245 |
| snp3 |  | 0.66521 | 0.30118 | 0.33757 | 0.33757 |  | 0.31768 | 0.93002 | 0.35276 | 0.35283 |  | 0.64592 | 0.31073 | 0.34754 | 0.34783 |
| snp4 |  | 0.43313 | 0.91847 | 0.79903 | 0.79903 |  | 0.69062 | 0.76657 | 0.71386 | 0.71386 |  | 0.71056 | 0.79346 | 0.74415 | 0.74425 |
| snp5 |  | 0.26919 | 0.73080 | 0.99661 | 0.99661 |  | 0.48653 | 0.73783 | 0.60721 | 0.60721 |  | 0.48304 | 0.26012 | 0.20047 | 0.20047 |
| snp6 |  | 0.06686 | 1.00000 | 0.17460 | 0.17460 |  | 0.00006\*\* | 1.00000 | 0.25897 | 0.25897 |  | 0.32950 | 1.00000 | 0.59181 | 0.60012 |
| snp7 |  | 0.48620 | 0.04238\* | 0.03215\* | 0.03215\* |  | 0.63858 | 0.03018\* | 0.03996\* | 0.03996\* |  | 0.32782 | 0.15744 | 0.10524 | 0.10524 |
| snp8 |  | 0.97316 | 0.85676 | 0.86403 | 0.86402 |  | 0.90948 | 0.51238 | 0.53158 | 0.53162 |  | 0.81440 | 0.70442 | 0.74023 | 0.74030 |
| snp9 |  | 0.02770\* | 0.98285 | 0.50877 | 0.50877 |  | 0.03936\* | 0.83390 | 0.70579 | 0.70582 |  | 0.02667\* | 0.30462 | 0.69876 | 0.69880 |
| snp10 |  | 0.03474\* | 0.92723 | 0.64624 | 0.64624 |  | 0.70890 | 0.91639 | 0.96799 | 0.96803 |  | 0.74939 | 0.19239 | 0.21786 | 0.21787 |
| snp11 |  | 0.44039 | 0.82110 | 0.96329 | 0.96329 |  | 0.35602 | 0.83558 | 0.68078 | 0.68084 |  | 0.08399 | 0.30301 | 0.15877 | 0.15877 |
| snp12 |  | 0.12404 | 0.14943 | 0.06502 | 0.06502 |  | 0.36838 | 0.00867\*\* | 0.02328\* | 0.02328\* |  | 0.10539 | 0.00299\*\* | 0.01578\* | 0.01578\* |
| snp13 |  | 0.76492 | 0.74463 | 0.80907 | 0.80909 |  | 0.45617 | 0.91364 | 0.84993 | 0.84994 |  | 0.68591 | 0.80181 | 0.88077 | 0.88079 |
| snp14 |  | 0.29456 | 0.79011 | 0.63514 | 0.63514 |  | 0.01499\* | 0.55684 | 0.89530 | 0.89530 |  | 0.31809 | 0.62985 | 0.77442 | 0.77442 |
| snp15 |  | 0.05469 | 0.74307 | 0.92866 | 0.92867 |  | 0.62916 | 0.64985 | 0.58970 | 0.58970 |  | 0.49763 | 0.43008 | 0.36968 | 0.36969 |
| snp16 |  | 0.32911 | 0.32073 | 0.43332 | 0.43332 |  | 0.95306 | 0.30875 | 0.31204 | 0.31205 |  | 0.68717 | 0.21319 | 0.19464 | 0.19466 |
| snp17 |  | 0.77980 | 0.65898 | 0.73357 | 0.73357 |  | 0.81996 | 0.71490 | 0.67830 | 0.67831 |  | 0.89845 | 0.90593 | 0.88277 | 0.88279 |
| snp18 |  | 0.27809 | 0.27795 | 0.20878 | 0.20878 |  | 0.01559\* | 0.83414 | 0.86463 | 0.86475 |  | 0.14002 | 0.80929 | 0.99371 | 0.99371 |
| snp19 |  | 0.18641 | 0.52239 | 0.77189 | 0.77189 |  | 0.16036 | 0.75826 | 0.98990 | 0.98990 |  | 0.96402 | 0.46382 | 0.48285 | 0.48277 |
| snp20 |  | 0.28008 | 0.78092 | 0.65363 | 0.65365 |  | 0.16424 | 0.36810 | 0.15332 | 0.15334 |  | 0.50560 | 0.06963 | 0.05836 | 0.05837 |
| snp21 |  | 1.81E-8\*\* | 1.00000 | 0.12546 | 0.12546 |  | 0.00011\*\* | 0.13617 | 0.01945\* | 0.01945\* |  | 0.02031\* | 0.04732\* | 0.01944\* | 0.01944\* |
| snp22 |  | 0.57401 | 0.57536 | 0.66865 | 0.66865 |  | 0.17464 | 0.17014 | 0.28233 | 0.28233 |  | 0.55064 | 0.55738 | 0.64722 | 0.64723 |
| snp23 |  | 0.07348 | 0.89909 | 0.60083 | 0.60086 |  | 0.35338 | 0.63555 | 0.79320 | 0.79320 |  | 0.49610 | 0.84929 | 0.73806 | 0.73807 |
| snp24 |  | 0.61184 | 0.46271 | 0.54214 | 0.54214 |  | 0.20740 | 0.12042 | 0.20402 | 0.20402 |  | 0.61489 | 0.46906 | 0.54149 | 0.54150 |
| snp25 |  | 0.11147 | 0.02940\* | 0.08395 | 0.08395 |  | 0.14493 | 0.02353\* | 0.06353 | 0.06353 |  | 0.55945 | 0.19833 | 0.26471 | 0.26472 |
| snp26 |  | 0.01247\* | 0.72323 | 0.33734 | 0.33734 |  | 0.01850\* | 0.69066 | 0.35912 | 0.35912 |  | 0.03919\* | 0.23554 | 0.10469 | 0.10469 |
| snp27 |  | 0.01240\* | 0.29354 | 0.69952 | 0.69952 |  | 0.00233\*\* | 0.29485 | 0.73292 | 0.73295 |  | 0.05248 | 0.66264 | 0.99332 | 0.99332 |
| snp28 |  | 0.72448 | 0.89512 | 0.97051 | 0.97051 |  | 0.02605\* | 1.00000 | 0.63753 | 0.63753 |  | 0.52069 | 0.76571 | 0.65599 | 0.65599 |
| snp29 |  | 0.18780 | 0.17759 | 0.29763 | 0.29763 |  | 0.08002 | 0.07589 | 0.15223 | 0.15223 |  | 0.54126 | 0.24429 | 0.30070 | 0.30070 |
| snp30 |  | 0.28618 | 0.59308 | 0.45813 | 0.45813 |  | 0.37476 | 0.29885 | 0.40734 | 0.40734 |  | 0.84271 | 0.74786 | 0.78103 | 0.78166 |

1Body weight was recorded on each animal at approximately 6 (weight1), 7 (weight2), 9 (weight3) and 12 (weight4) months post-hatching.

2Family-based QTLD analysis was performed with software SOLAR version 4.0 (Almasy and Blangero, 1998). The sample included 40 FS families each with ~17 progeny. Here, we show the asymptotic *P*-value for the test statistic distributed as a $χ^{2}$ with 1 DF; the effective number of tests and multiple testing adjusted *P*-value was *P* = 0.00165 (Moskvina and Schmidt, 2008).

3QTDT test which is especially robust to population stratification, showed that three out of the 30 evaluated nuclear SNPs has significant evidence for population stratification at P<0.01 and seven extra nuSNPs were significant at P<0.05.

4QTDT stands for quantitative trait disequilibrium test (Abecasis et al., 2000).

\*\* indicates significance at P< 0.01

\* indicates significance at P< 0.05