

## Haplotype analysis improved evidence for candidate genes for intramuscular fat percentage from a genome wide association study of cattle

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### Supplementary Tables

**Table S6. Single point SNP associations of candidate genes for IMF in the GWAS**

| SNP                             | A | B | Bta | Position | <i>b</i><br>(%) | s.e.  | <i>P</i> |
|---------------------------------|---|---|-----|----------|-----------------|-------|----------|
| <b>ADIPOQ</b>                   |   |   |     |          |                 |       |          |
| ARS-BFGL-NGS-26946              | A | G | 1   | 82201457 | 0.049           | 0.103 | 0.6316   |
| Hapmap43250-BTA-37524           | A | G | 1   | 82245379 | -0.956          | 0.378 | 0.0117   |
| BTB-00035080                    | A | G | 1   | 82271202 | -0.642          | 0.274 | 0.0191   |
| <b>CXCR4</b>                    |   |   |     |          |                 |       |          |
| ARS-BFGL-NGS-117383             | A | G | 2   | 63905821 | 0.331           | 0.413 | 0.4239   |
| Hapmap55796-rs29011172          | A | T | 2   | 63947669 | -0.427          | 0.135 | 0.0016   |
| ARS-BFGL-NGS-119079             | A | G | 2   | 63998173 | 0.297           | 0.116 | 0.0107   |
| <b>RORC</b>                     |   |   |     |          |                 |       |          |
| ARS-BFGL-NGS-52272              | C | G | 3   | 20421496 | 0.217           | 0.115 | 0.0588   |
| INRA-404                        | A | G | 3   | 20519554 | -0.128          | 0.092 | 0.1640   |
| ARS-BFGL-NGS-109685             | A | G | 3   | 20564445 | 0.101           | 0.110 | 0.3568   |
| <b>LEP</b>                      |   |   |     |          |                 |       |          |
| ARS-BFGL-NGS-101028             | A | G | 4   | 95639597 | -0.033          | 0.088 | 0.7084   |
| ARS-BFGL-NGS-59298              | A | G | 4   | 95685551 | -0.065          | 0.099 | 0.5121   |
| ARS-BFGL-NGS-34894              | A | G | 4   | 95715499 | 0.160           | 0.116 | 0.1673   |
| <b>CAST</b>                     |   |   |     |          |                 |       |          |
| ARS-BFGL-NGS-43901              | A | C | 7   | 97492911 | -0.021          | 0.092 | 0.8231   |
| USMARC-670                      | A | G | 7   | 97524770 | -0.040          | 0.084 | 0.6316   |
| USMARC-116                      | A | G | 7   | 97561407 | -0.005          | 0.093 | 1.0000   |
| <b>CAPN3</b>                    |   |   |     |          |                 |       |          |
| ARS-BFGL-NGS-13350              | A | G | 10  | 37625930 | 0.004           | 0.087 | 1.0000   |
| Hapmap47063-BTA-62293           | A | G | 10  | 37647411 | -0.097          | 0.087 | 0.2620   |
| ARS-BFGL-BAC-12264              | A | G | 10  | 37675399 | -0.332          | 0.129 | 0.0101   |
| <b>DGAT1</b>                    |   |   |     |          |                 |       |          |
| ARS-BFGL-BAC-21527              | A | C | 14  | 399173   | -0.679          | 1.650 | 0.6802   |
| ARS-BFGL-NGS-4939               | A | G | 14  | 443937   | -0.137          | 0.125 | 0.2736   |
| ARS-BFGL-BAC-26048              | A | G | 14  | 483500   | 0.060           | 0.309 | 0.8415   |
| <b>TG</b>                       |   |   |     |          |                 |       |          |
| Hapmap36763-SCAFFOLD240007_5847 | A | C | 14  | 7620648  | -0.011          | 0.090 | 0.8876   |
| ARS-BFGL-NGS-11246              | A | G | 14  | 7656719  | 0.061           | 0.090 | 0.5025   |
| ARS-BFGL-NGS-12631              | A | G | 14  | 7685715  | -0.029          | 0.090 | 0.7402   |
| <b>CRH</b>                      |   |   |     |          |                 |       |          |

|                            |   |   |    |          |        |       |        |
|----------------------------|---|---|----|----------|--------|-------|--------|
| ARS-BFGL-NGS-70865         | A | G | 14 | 30425753 | -0.121 | 0.094 | 0.1966 |
| ARS-BFGL-NGS-25050         | A | G | 14 | 30447263 | 0.042  | 0.094 | 0.6548 |
| ARS-BFGL-NGS-26147         | A | G | 14 | 31515559 | 0.126  | 0.108 | 0.2439 |
| <b>FABP4</b>               |   |   |    |          |        |       |        |
| BTB-00567254               | A | G | 14 | 41915068 | -0.057 | 0.094 | 0.5432 |
| BTB-00567299               | A | G | 14 | 41966954 | 0.123  | 0.089 | 0.1684 |
| BTB-00567509               | A | G | 14 | 42054159 | -0.142 | 0.087 | 0.1026 |
| <b>DECRI</b>               |   |   |    |          |        |       |        |
| ARS-BFGL-BAC-23724         | A | G | 14 | 72289416 | 0.030  | 0.096 | 0.7519 |
| UA-IFASA-7973              | A | G | 14 | 72368404 | 0.051  | 0.095 | 0.5904 |
| BTA-35525-no-rs            | A | G | 14 | 72400485 | -0.028 | 0.085 | 0.7402 |
| <b>CPE</b>                 |   |   |    |          |        |       |        |
| Hapmap54135-<br>rs29019936 | A | G | 17 | 573316   | 0.113  | 0.101 | 0.2658 |
| ARS-BFGL-NGS-111865        | A | G | 17 | 657048   | 0.136  | 0.083 | 0.1013 |
| Hapmap41213-BTA-<br>26249  | A | G | 17 | 771833   | 0.088  | 0.117 | 0.4505 |
| <b>CEBPA</b>               |   |   |    |          |        |       |        |
| ARS-BFGL-NGS-105692        | A | G | 18 | 43119331 | -0.076 | 0.176 | 0.6715 |
| ARS-BFGL-NGS-21339         | A | G | 18 | 43150185 | 0.265  | 0.101 | 0.0092 |
| BTA-43268-no-rs            | A | G | 18 | 43170819 | -0.188 | 0.123 | 0.1273 |
| <b>SREBF1</b>              |   |   |    |          |        |       |        |
| ARS-BFGL-NGS-111809        | A | G | 19 | 35666624 | -0.140 | 0.102 | 0.1707 |
| ARS-BFGL-NGS-4759          | A | G | 19 | 35690367 | -0.046 | 0.092 | 0.6172 |
| ARS-BFGL-NGS-23022         | A | G | 19 | 35723058 | -0.106 | 0.091 | 0.2421 |
| <b>TCAP</b>                |   |   |    |          |        |       |        |
| Hapmap49048-BTA-<br>119203 | A | G | 19 | 41230750 | 0.027  | 0.122 | 0.8231 |
| ARS-BFGL-NGS-57711         | A | G | 19 | 41301795 | -0.113 | 0.093 | 0.2273 |
| ARS-BFGL-NGS-32460         | A | G | 19 | 41325600 | -0.049 | 0.098 | 0.6243 |
| <b>GHI</b>                 |   |   |    |          |        |       |        |
| ARS-BFGL-NGS-78203         | A | C | 19 | 49617252 | 0.003  | 0.086 | 1.0000 |
| ARS-BFGL-NGS-73805         | A | G | 19 | 49652376 | 0.035  | 0.089 | 0.6893 |
| ARS-BFGL-NGS-115719        | A | G | 19 | 49690249 | -0.052 | 0.086 | 0.5431 |
| <b>FASN</b>                |   |   |    |          |        |       |        |
| ARS-BFGL-NGS-20701         | A | C | 19 | 52158614 | -0.185 | 0.125 | 0.1393 |
| ARS-BFGL-NGS-39983         | A | G | 19 | 52182484 | 0.133  | 0.102 | 0.1940 |
| ARS-BFGL-NGS-73980         | A | G | 19 | 52291308 | -0.077 | 0.088 | 0.3805 |
| <b>GHR</b>                 |   |   |    |          |        |       |        |
| UA-IFASA-8974              | A | C | 20 | 33908596 | 0.070  | 0.120 | 0.5600 |
| ARS-BFGL-NGS-118998        | A | G | 20 | 34036832 | -0.076 | 0.090 | 0.3997 |
| ARS-BFGL-NGS-97963         | A | G | 20 | 34080607 | 0.187  | 0.140 | 0.1825 |
| <b>SCD</b>                 |   |   |    |          |        |       |        |
| Hapmap31825-BTA-<br>158647 | A | G | 26 | 21476708 | 0.149  | 0.143 | 0.2968 |
| Hapmap33073-BTA-<br>162864 | A | G | 26 | 21586449 | -0.070 | 0.115 | 0.5432 |
| BTB-00931481               | A | G | 26 | 21631981 | 0.012  | 0.212 | 1.0000 |

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|                            |   |   |    |          |        |       |        |
|----------------------------|---|---|----|----------|--------|-------|--------|
| <b>FGF8</b>                |   |   |    |          |        |       |        |
| Hapmap53405-<br>rs29014382 | A | G | 26 | 22772482 | 0.027  | 0.116 | 0.8066 |
| ARS-BFGL-NGS-29678         | A | C | 26 | 22816416 | 0.115  | 0.109 | 0.2946 |
| BTB-00933928               | A | G | 26 | 22878425 | -0.013 | 0.164 | 0.9204 |
| <b>CAPN1</b>               |   |   |    |          |        |       |        |
| ARS-BFGL-NGS-21416         | A | G | 29 | 45202710 | -0.019 | 0.104 | 0.8625 |
| CAPN1_1                    | C | G | 29 | 45221190 | -0.192 | 0.091 | 0.0348 |
| CAPN1_2                    | A | G | 29 | 45239821 | -0.008 | 0.099 | 0.9204 |
| <b>IGF2</b>                |   |   |    |          |        |       |        |
| ARS-BFGL-NGS-106809        | A | G | 29 | 51231973 | -0.111 | 0.086 | 0.1979 |
| UA-IFASA-1391              | A | G | 29 | 51257883 | 0.064  | 0.127 | 0.6172 |
| ARS-BFGL-NGS-29984         | A | G | 29 | 51301848 | 0.151  | 0.144 | 0.2968 |

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Note that for the gene *CXCR4*, this gene is the closest gene to the significant SNPs, but these are not located within the gene itself.