# Supplemental Tables

Supplemental Table 1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **M1 MLH1 Count** | **p values** |  |  | **Coefficients (fixed estimates)** | **Random Effects (standard deviation)** |
| Subspecies | 0.00097 |  | Intercept | 26.356 |  |
| Sex | 0.00000 |  | Subspecies Musculus | -0.755 |  |
| Subspecies\*Sex | 0.00018 |  | Subspecies Molossinus | -0.482 |  |
| strain(random) | 0.00010 |  | Sex(male) | -2.649 |  |
|  |  |  | Musculus\*male | 2.953 |  |
|  |  |  | Molossinus\*male | 3.201 |  |
|  |  |  | intercept |  | 1.69 |
|  |  |  | Strain |  | 1.89 |

Supplemental Table 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M2 MLH1 Count** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 24.718 | 0.447 | 55.356 | 0.000 |
| Subspecies Musculus | 0.849 | 0.714 | 1.190 | 0.236 |
| Subspecies Molossinus | 2.901 | 1.729 | 1.678 | 0.096 |
| Sex (male) | -1.194 | 0.692 | -1.726 | 0.087 |
| Strain G | 3.301 | 0.657 | 5.023 | 0.000 |
| Strain LEW | 1.694 | 0.714 | 2.373 | 0.019 |
| Strain PWD | 0.257 | 0.704 | 0.365 | 0.716 |
| Strain MSM | 0.086 | 1.729 | 0.050 | 0.960 |
| Strain SKIVE | 0.371 | 1.761 | 0.210 | 0.834 |
| Subspecies Musculus \* Sex | -0.768 | 1.021 | -0.753 | 0.453 |
| Subspecies Molossinus \* Sex | -3.185 | 1.933 | -1.648 | 0.102 |
| Strain G \* Sex (male) | -3.144 | 0.982 | -3.201 | 0.002 |
| Strain LEW \* Sex (male) | -1.165 | 1.090 | -1.070 | 0.287 |
| Strain PWD \* Sex (male) | 4.444 | 1.048 | 4.239 | 0.000 |
| Strain MSM \* Sex (male) | 6.826 | 2.038 | 3.349 | 0.001 |
| Strain SKIVE \* Sex (male) | 2.260 | 1.978 | 1.143 | 0.255 |

Supplemental Table 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M3 MLH1 Count** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 24.718 | 0.447 | 55.356 | 0.000 |
| Sex (male) | -1.194 | 0.692 | -1.726 | 0.087 |
| Strain G | 3.301 | 0.657 | 5.023 | 0.000 |
| Strain LEW | 1.694 | 0.714 | 2.373 | 0.019 |
| Strain PWD | 1.107 | 0.621 | 1.783 | 0.077 |
| Strain MSM | 2.988 | 0.631 | 4.731 | 0.000 |
| Strain MOLF | 2.901 | 1.729 | 1.678 | 0.096 |
| Strain SKIVE | 1.220 | 1.729 | 0.706 | 0.482 |
| Strain KAZ | 0.849 | 0.714 | 1.190 | 0.236 |
| Strain G \* Sex (male) | -3.144 | 0.982 | -3.201 | 0.002 |
| Strain LEW \* Sex (male) | -1.165 | 1.090 | -1.070 | 0.287 |
| Strain PWD \* Sex (male) | 3.675 | 1.007 | 3.651 | 0.000 |
| Strain MSM \* Sex (male) | 3.641 | 1.173 | 3.104 | 0.002 |
| Strain MOLF \* Sex (male) | -3.185 | 1.933 | -1.648 | 0.102 |
| Strain SKIVE \* Sex (male) | 1.492 | 1.957 | 0.762 | 0.447 |
| Strain KAZ \* Sex (male) | -0.768 | 1.021 | -0.753 | 0.453 |

Supplemental Table 4

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Female MLH1 Count** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 24.718 | 0.466 | 53.088 | 0.000 |
| Subspecies Musculus | 0.849 | 0.744 | 1.141 | 0.258 |
| Subspecies Molossinus | 2.901 | 1.803 | 1.609 | 0.112 |
| Strain G | 3.301 | 0.685 | 4.817 | 0.000 |
| Strain LEW | 1.694 | 0.744 | 2.276 | 0.026 |
| Strain PWD | 0.257 | 0.735 | 0.350 | 0.727 |
| Strain MSM | 0.086 | 1.803 | 0.048 | 0.962 |
| Strain SKIVE | 0.371 | 1.836 | 0.202 | 0.841 |

Supplemental Table 5

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Female MLH1 Count** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 24.718 | 0.466 | 53.088 | 0.000 |
| Strain G | 3.301 | 0.685 | 4.817 | 0.000 |
| Strain LEW | 1.694 | 0.744 | 2.276 | 0.026 |
| Strain PWD | 1.107 | 0.647 | 1.710 | 0.092 |
| Strain MSM | 2.988 | 0.658 | 4.537 | 0.000 |
| Strain MOLF | 2.901 | 1.803 | 1.609 | 0.112 |
| Strain SKIVE | 1.220 | 1.803 | 0.677 | 0.501 |
| Strain KAZ | 0.849 | 0.744 | 1.141 | 0.258 |

Supplemental Table 6

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Male MLH1 Count** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 23.524 | 0.495 | 47.530 | 0.000 |
| Subspecies Musculus | -1.330 | 1.030 | -1.291 | 0.202 |
| Subspecies Molossinus | -0.284 | 0.808 | -0.352 | 0.727 |
| Strain G | 0.157 | 0.684 | 0.229 | 0.820 |
| Strain LEW | 0.528 | 0.771 | 0.685 | 0.496 |
| Strain PERC | -1.716 | 1.641 | -1.045 | 0.300 |
| Strain PWD | 6.113 | 1.060 | 5.769 | 0.000 |
| Strain MSM | 6.913 | 1.010 | 6.843 | 0.000 |
| Strain SKIVE | 4.042 | 1.143 | 3.537 | 0.001 |
| Strain KAZ | 1.411 | 1.019 | 1.385 | 0.172 |
| Strain TOM | 3.406 | 1.807 | 1.885 | 0.065 |
| Strain AST | 2.703 | 1.807 | 1.496 | 0.140 |

Supplemental Table 7

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Male MLH1 Count** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 23.524 | 0.495 | 47.530 | 0.000 |
| Strain G | 0.157 | 0.684 | 0.229 | 0.820 |
| Strain LEW | 0.528 | 0.771 | 0.685 | 0.496 |
| Strain PERC | -1.716 | 1.641 | -1.045 | 0.300 |
| Strain PWD | 4.782 | 0.742 | 6.442 | 0.000 |
| Strain MSM | 6.629 | 0.926 | 7.159 | 0.000 |
| Strain MOLF | -0.284 | 0.808 | -0.352 | 0.727 |
| Strain SKIVE | 2.712 | 0.857 | 3.164 | 0.003 |
| Strain KAZ | 0.081 | 0.684 | 0.118 | 0.906 |
| Strain TOM | 2.076 | 1.641 | 1.265 | 0.211 |
| Strain AST | 1.373 | 1.641 | 0.836 | 0.406 |
| Strain CZECH | -1.330 | 1.030 | -1.291 | 0.202 |

Supplemental Table 8

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **M1 Total SC Length** | **p values** |  |  | **Coefficients**  **(fixed estimates)** | **Random Effects (standard deviation)** |
| Subspecies | 0.00085 |  | Intercept | 1960.2 |  |
| Sex | 0.00000 |  | Subspecies Musculus | -44.1 |  |
| Subspecies\*Sex | 0.00010 |  | Subspecies Molossinus | -119.1 |  |
| Strain(random) | 0.00010 |  | Sex(male) | -558 |  |
|  |  |  | Musculus\*male | 167.1 |  |
|  |  |  | Molossinus\*male | 396.9 |  |
|  |  |  | Intercept |  | 119 |
|  |  |  | Strain |  | 263 |

Supplemental Table 9

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M2 Total SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 1683.383 | 36.479 | 46.147 | 0.000 |
| Subspecies Musculus | 229.568 | 62.002 | 3.703 | 0.000 |
| Subspecies Molossinus | 161.137 | 53.281 | 3.024 | 0.003 |
| Strain G | 431.238 | 54.282 | 7.944 | 0.000 |
| Strain LEW | 248.684 | 59.941 | 4.149 | 0.000 |
| Strain PWD | -26.764 | 61.403 | -0.436 | 0.664 |
| Strain SKIVE | 50.076 | 90.383 | 0.554 | 0.580 |
| Sex (male) | -345.005 | 58.200 | -5.928 | 0.000 |
| Subspecies Musculus \* Sex (male) | -84.338 | 89.204 | -0.945 | 0.346 |
| Subspecies Molossinus \* Sex (male) | 243.125 | 97.055 | 2.505 | 0.013 |
| Strain G \* Sex (male) | -303.270 | 84.021 | -3.609 | 0.000 |
| Strain LEW \* Sex (male) | -169.848 | 94.240 | -1.802 | 0.074 |
| Strain PWD \* Sex (male) | 121.505 | 93.030 | 1.306 | 0.194 |
| Strain SKIVE \* Sex (male) | -119.766 | 121.449 | -0.986 | 0.326 |

Supplemental Table 10

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M3 Total SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 1683.383 | 36.479 | 46.147 | 0.000 |
| Strain G | 431.238 | 54.282 | 7.944 | 0.000 |
| Strain LEW | 248.684 | 59.941 | 4.149 | 0.000 |
| Strain PWD | 202.805 | 50.867 | 3.987 | 0.000 |
| Strain MSM | 161.137 | 53.281 | 3.024 | 0.003 |
| Strain SKIVE | 279.644 | 83.583 | 3.346 | 0.001 |
| Strain KAZ | 229.568 | 62.002 | 3.703 | 0.000 |
| Sex (male) | -345.005 | 58.200 | -5.928 | 0.000 |
| Strain G \* Sex (male) | -303.270 | 84.021 | -3.609 | 0.000 |
| Strain LEW \* Sex (male) | -169.848 | 94.240 | -1.802 | 0.074 |
| Strain PWD \* Sex (male) | 37.168 | 86.439 | 0.430 | 0.668 |
| Strain MSM \* Sex (male) | 243.125 | 97.055 | 2.505 | 0.013 |
| Strain SKIVE \* Sex (male) | -204.104 | 116.478 | -1.752 | 0.082 |
| Strain KAZ \* Sex (male) | -84.338 | 89.204 | -0.945 | 0.346 |

Supplemental Table 11

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Female Total SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 1683.383 | 44.414 | 37.902 | 0.000 |
| Subspecies Musculus | 229.568 | 75.489 | 3.041 | 0.003 |
| Subspecies Molossinus | 15.823 | 188.432 | 0.084 | 0.933 |
| Strain G | 431.238 | 66.090 | 6.525 | 0.000 |
| Strain LEW | 248.684 | 72.979 | 3.408 | 0.001 |
| Strain PWD | -26.764 | 74.760 | -0.358 | 0.721 |
| Strain MSM | 145.314 | 189.128 | 0.768 | 0.445 |
| Strain SKIVE | 50.076 | 110.043 | 0.455 | 0.650 |

Supplemental Table 12

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Female Total SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 1683.383 | 44.414 | 37.902 | 0.000 |
| Strain G | 431.238 | 66.090 | 6.525 | 0.000 |
| Strain LEW | 248.684 | 72.979 | 3.408 | 0.001 |
| Strain PWD | 202.805 | 61.932 | 3.275 | 0.002 |
| Strain MSM | 161.137 | 64.870 | 2.484 | 0.015 |
| Strain MOLF | 15.823 | 188.432 | 0.084 | 0.933 |
| Strain SKIVE | 279.644 | 101.765 | 2.748 | 0.007 |
| Strain KAZ | 229.568 | 75.489 | 3.041 | 0.003 |

Supplemental Table 13

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Male Total SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 1338.379 | 23.387 | 57.228 | 0.000 |
| Subspecies Musculus | 236.879 | 41.835 | 5.662 | 0.000 |
| Subspecies Molossinus | 213.996 | 37.502 | 5.706 | 0.000 |
| Strain G | 127.967 | 33.074 | 3.869 | 0.000 |
| Strain LEW | 78.836 | 37.502 | 2.102 | 0.040 |
| Strain PERC | 109.979 | 81.014 | 1.358 | 0.179 |
| Strain PWD | 3.093 | 44.219 | 0.070 | 0.944 |
| Strain MSM | 190.266 | 45.417 | 4.189 | 0.000 |
| Strain SKIVE | -161.339 | 49.056 | -3.289 | 0.002 |
| Strain KAZ | -91.648 | 41.835 | -2.191 | 0.032 |
| Strain TOM | 72.493 | 64.895 | 1.117 | 0.268 |
| Strain AST | 39.557 | 64.895 | 0.610 | 0.544 |

Supplemental Table 14

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Male Total SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 1338.379 | 23.387 | 57.228 | 0.000 |
| Strain G | 127.967 | 33.074 | 3.869 | 0.000 |
| Strain LEW | 78.836 | 37.502 | 2.102 | 0.040 |
| Strain PERC | 109.979 | 81.014 | 1.358 | 0.179 |
| Strain PWD | 239.972 | 36.041 | 6.658 | 0.000 |
| Strain MSM | 404.262 | 41.835 | 9.663 | 0.000 |
| Strain MOLF | 213.996 | 37.502 | 5.706 | 0.000 |
| Strain SKIVE | 75.540 | 41.835 | 1.806 | 0.076 |
| Strain KAZ | 145.230 | 33.074 | 4.391 | 0.000 |
| Strain TOM | 309.371 | 59.625 | 5.189 | 0.000 |
| Strain AST | 276.436 | 59.625 | 4.636 | 0.000 |
| Strain CZECH | 236.879 | 41.835 | 5.662 | 0.000 |

Supplemental Table 15

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **M1 Short Bivalent SC Length** | **p values** |  |  | **Coefficients (fixed estimates)** | **Random Effects (standard deviation)** |
| Subspecies | 0.12684 |  | Intercept | 80.34 |  |
| Sex | 0.00000 |  | Subspecies Musculus | -5.71 |  |
| Subspecies\*Sex | 0.02989 |  | Subspecies Molossinus | -4.65 |  |
| Strain(random) | 0.18840 |  | Sex(male) | -26.26 |  |
|  |  |  | Musculus\*male | 10.52 |  |
|  |  |  | Molossinus\*male |  |  |
|  |  |  | Intercept |  | 2.49 |
|  |  |  | Strain |  | 8.01 |

Supplemental Table 16

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M2 Short Bivalent SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 73.886 | 4.633 | 15.947 | 0.000 |
| Subspecies Musculus | 6.897 | 6.129 | 1.125 | 0.267 |
| Subspecies Molossinus | 1.803 | 6.552 | 0.275 | 0.785 |
| Strain G | 7.965 | 5.674 | 1.404 | 0.168 |
| Strain LEW | 9.166 | 5.674 | 1.615 | 0.114 |
| Strain PWD | -5.068 | 4.914 | -1.031 | 0.309 |
| Strain SKIVE | -13.897 | 5.674 | -2.449 | 0.019 |
| Sex (male) | -25.336 | 7.326 | -3.459 | 0.001 |
| Subspecies Musculus \* Sex (male) | 1.960 | 9.551 | 0.205 | 0.838 |
| Strain G \* Sex (male) | 0.100 | 8.972 | 0.011 | 0.991 |
| Strain LEW \* Sex (male) | -2.216 | 9.828 | -0.226 | 0.823 |
| Strain PWD \* Sex (male) | 7.727 | 8.190 | 0.943 | 0.351 |
| Strain SKIVE \* Sex (male) | 15.180 | 8.352 | 1.817 | 0.077 |

Supplemental Table 17

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M3 Short Bivalent SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 73.886 | 4.633 | 15.947 | 0.000 |
| Strain G | 7.965 | 5.674 | 1.404 | 0.168 |
| Strain LEW | 9.167 | 5.674 | 1.615 | 0.114 |
| Strain PWD | 1.829 | 5.433 | 0.337 | 0.738 |
| Strain MSM | 1.803 | 6.552 | 0.275 | 0.785 |
| Strain SKIVE | -7.000 | 6.129 | -1.142 | 0.260 |
| Strain KAZ | 6.897 | 6.129 | 1.125 | 0.267 |
| Sex (male) | -25.336 | 7.326 | -3.459 | 0.001 |
| Strain G \* Sex (male) | 0.100 | 8.972 | 0.011 | 0.991 |
| Strain LEW \* Sex (male) | -2.217 | 9.828 | -0.226 | 0.823 |
| Strain PWD \* Sex (male) | 9.687 | 9.120 | 1.062 | 0.295 |
| Strain SKIVE \* Sex (male) | 17.140 | 9.266 | 1.850 | 0.072 |
| Strain KAZ \* Sex (male) | 1.960 | 9.551 | 0.205 | 0.838 |

Supplemental Table 18

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Female Short Bivalent**  **SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 73.886 | 5.334 | 13.853 | 0.000 |
| Subspecies Musculus | 6.897 | 7.056 | 0.977 | 0.337 |
| Subspecies Molossinus | 1.803 | 7.543 | 0.239 | 0.813 |
| Strain G | 7.965 | 6.532 | 1.219 | 0.233 |
| Strain LEW | 9.167 | 6.532 | 1.403 | 0.172 |
| Strain PWD | -5.068 | 5.657 | -0.896 | 0.378 |
| Strain SKIVE | -13.897 | 6.532 | -2.127 | 0.043 |

Supplemental Table 19

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Female Short Bivalent**  **SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 73.886 | 5.334 | 13.853 | 0.000 |
| Strain G | 7.965 | 6.532 | 1.219 | 0.233 |
| Strain LEW | 9.167 | 6.532 | 1.403 | 0.172 |
| Strain PWD | 1.829 | 6.254 | 0.292 | 0.772 |
| Strain MSM | 1.803 | 7.543 | 0.239 | 0.813 |
| Strain SKIVE | -7.000 | 7.056 | -0.992 | 0.330 |
| Strain KAZ | 6.897 | 7.056 | 0.977 | 0.337 |

Supplemental Table 20

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Male Short Bivalent**  **SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 48.550 | 3.120 | 15.563 | 0.000 |
| Subspecies Musculus | 12.992 | 4.412 | 2.945 | 0.011 |
| Subspecies Molossinus | 13.762 | 5.403 | 2.547 | 0.024 |
| Strain G | 8.065 | 3.821 | 2.111 | 0.055 |
| Strain LEW | 6.950 | 4.412 | 1.575 | 0.139 |
| Strain PWD | -1.475 | 4.027 | -0.366 | 0.720 |
| Strain SKIVE | -2.852 | 3.821 | -0.746 | 0.469 |
| Strain KAZ | -4.135 | 4.027 | -1.027 | 0.323 |

Supplemental Table 21

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Male Short Bivalent**  **SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 48.550 | 3.120 | 15.563 | 0.000 |
| Strain G | 8.065 | 3.821 | 2.111 | 0.055 |
| Strain LEW | 6.950 | 4.412 | 1.575 | 0.139 |
| Strain PWD | 11.516 | 4.027 | 2.859 | 0.013 |
| Strain MOLF | 13.762 | 5.403 | 2.547 | 0.024 |
| Strain SKIVE | 10.140 | 3.821 | 2.654 | 0.020 |
| Strain KAZ | 8.857 | 4.027 | 2.199 | 0.047 |
| Strain CZECH | 12.992 | 4.412 | 2.945 | 0.011 |

Supplemental Table 22

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Male Long Bivalent**  **SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 86.400 | 4.942 | 17.482 | 0.000 |
| Subspecies Musculus | 17.836 | 6.989 | 2.552 | 0.024 |
| Subspecies Molossinus | 11.457 | 8.560 | 1.338 | 0.204 |
| Strain G | 9.469 | 6.053 | 1.564 | 0.142 |
| Strain LEW | 9.000 | 6.989 | 1.288 | 0.220 |
| Strain PWD | -3.290 | 6.380 | -0.516 | 0.615 |
| Strain SKIVE | -4.205 | 6.053 | -0.695 | 0.499 |
| Strain KAZ | -5.837 | 6.380 | -0.915 | 0.377 |

Supplemental Table 23

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Male Long Bivalent**  **SC Length** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 86.400 | 4.942 | 17.482 | 0.000 |
| Strain G | 9.469 | 6.053 | 1.564 | 0.142 |
| Strain LEW | 9.000 | 6.989 | 1.288 | 0.220 |
| Strain PWD | 14.546 | 6.380 | 2.280 | 0.040 |
| Strain MOLF | 11.457 | 8.560 | 1.338 | 0.204 |
| Strain SKIVE | 13.631 | 6.053 | 2.252 | 0.042 |
| Strain KAZ | 11.999 | 6.380 | 1.881 | 0.083 |
| Strain CZECH | 17.836 | 6.989 | 2.552 | 0.024 |

Supplemental Table 24

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **M1 Normalized Foci Position** | **p values** |  |  | **Coefficients (fixed estimates)** | **Random Effects (standard deviation)** |
| Subspecies | 0.124 |  | Intercept | 0.559 |  |
| Sex | 0.000 |  | Subspecies Musculus | 0.009 |  |
| Subspecies\*Sex | 0.056 |  | Subspecies Molossinus | 0.016 |  |
| Strain(random) | 0.003 |  | Sex(male) | 0.137 |  |
|  |  |  | Musculus\*male | -0.031 |  |
|  |  |  | Molosinus\*male | 0.020 |  |
|  |  |  | Intercept |  | 0.019 |
|  |  |  | Strain |  | 0.031 |

Supplemental Table 25

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M2 Normalized Foci Position** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.590 | 0.018 | 32.808 | 0.000 |
| Subspecies Musculus | -0.043 | 0.023 | -1.907 | 0.061 |
| Subspecies Molossinus | -0.016 | 0.024 | -0.659 | 0.512 |
| Strain G | -0.039 | 0.022 | -1.753 | 0.085 |
| Strain LEW | -0.051 | 0.021 | -2.406 | 0.019 |
| Strain PWD | 0.028 | 0.017 | 1.653 | 0.103 |
| Strain SKIVE | 0.030 | 0.021 | 1.440 | 0.155 |
| Sex (male) | 0.142 | 0.023 | 6.251 | 0.000 |
| Subspecies Musculus \* Sex (male) | -0.010 | 0.032 | -0.313 | 0.755 |
| Subspecies Molossinus \* Sex (male) | 0.014 | 0.035 | 0.402 | 0.689 |
| Strain G \* Sex (male) | -0.025 | 0.028 | -0.876 | 0.385 |
| Strain LEW \* Sex (male) | 0.010 | 0.029 | 0.360 | 0.720 |
| Strain PWD \* Sex (male) | -0.040 | 0.028 | -1.409 | 0.164 |
| Strain SKIVE \* Sex (male) | -0.030 | 0.030 | -1.007 | 0.318 |

Supplemental Table 26

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M3 Normalized Foci Position** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.590 | 0.018 | 32.808 | 0.000 |
| Strain G | -0.039 | 0.022 | -1.753 | 0.085 |
| Strain LEW | -0.051 | 0.021 | -2.406 | 0.019 |
| Strain PWD | -0.016 | 0.020 | -0.769 | 0.445 |
| Strain MSM | -0.016 | 0.024 | -0.659 | 0.512 |
| Strain SKIVE | -0.013 | 0.024 | -0.559 | 0.578 |
| Strain KAZ | -0.043 | 0.023 | -1.907 | 0.061 |
| Sex (male) | 0.142 | 0.023 | 6.251 | 0.000 |
| Strain G \* Sex (male) | -0.025 | 0.028 | -0.876 | 0.385 |
| Strain LEW \* Sex (male) | 0.010 | 0.029 | 0.360 | 0.720 |
| Strain PWD \* Sex (male) | -0.050 | 0.028 | -1.765 | 0.082 |
| Strain MSM \* Sex (male) | 0.014 | 0.035 | 0.402 | 0.689 |
| Strain SKIVE \* Sex (male) | -0.040 | 0.030 | -1.343 | 0.184 |
| Strain KAZ \* Sex (male) | -0.010 | 0.032 | -0.313 | 0.755 |

Supplemental Table 27

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Female**  **Normalized Foci Position** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.507 | 0.008 | 64.388 | 0.000 |
| Subspecies Musculus | -0.007 | 0.013 | -0.573 | 0.566 |
| Subspecies Molossinus | -0.017 | 0.012 | -1.407 | 0.160 |
| Strain G | -0.044 | 0.011 | -3.891 | 0.000 |
| Strain LEW | -0.063 | 0.011 | -5.466 | 0.000 |
| Strain PWD | -0.010 | 0.012 | -0.868 | 0.385 |
| Strain SKIVE | -0.003 | 0.014 | -0.231 | 0.817 |

Supplemental Table 28

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Female**  **Normalized Foci Position** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.507 | 0.008 | 64.388 | 0.000 |
| Strain G | -0.044 | 0.011 | -3.891 | 0.000 |
| Strain LEW | -0.063 | 0.011 | -5.466 | 0.000 |
| Strain PWD | -0.018 | 0.010 | -1.688 | 0.091 |
| Strain MSM | -0.017 | 0.012 | -1.407 | 0.160 |
| Strain SKIVE | -0.010 | 0.013 | -0.829 | 0.407 |
| Strain KAZ | -0.007 | 0.013 | -0.573 | 0.566 |

Supplemental Table 29

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Male**  **Normalized Foci Position** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.733 | 0.014 | 52.208 | 0.000 |
| Subspecies Musculus | -0.042 | 0.023 | -1.827 | 0.076 |
| Subspecies Molossinus | -0.142 | 0.021 | -6.743 | 0.000 |
| Strain G | -0.063 | 0.018 | -3.611 | 0.001 |
| Strain LEW | -0.040 | 0.020 | -2.034 | 0.050 |
| Strain PWD | -0.024 | 0.023 | -1.033 | 0.309 |
| Strain MSM | 0.140 | 0.027 | 5.169 | 0.000 |
| Strain SKIVE | -0.012 | 0.022 | -0.541 | 0.592 |
| Strain KAZ | -0.012 | 0.026 | -0.453 | 0.653 |

Supplemental Table 30

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Male**  **Normalized Foci Position** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.733 | 0.014 | 52.208 | 0.000 |
| Strain G | -0.063 | 0.018 | -3.611 | 0.001 |
| Strain LEW | -0.040 | 0.020 | -2.034 | 0.050 |
| Strain PWD | -0.066 | 0.020 | -3.303 | 0.002 |
| Strain MSM | -0.001 | 0.026 | -0.056 | 0.955 |
| Strain MOLF | -0.142 | 0.021 | -6.743 | 0.000 |
| Strain SKIVE | -0.054 | 0.018 | -2.916 | 0.006 |
| Strain KAZ | -0.053 | 0.023 | -2.334 | 0.026 |
| Strain CZECH | -0.042 | 0.023 | -1.827 | 0.076 |

Supplemental Table 31

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **M1 Normalized Interfocal Distance** | **p values** |  |  | **Coefficients (fixed estimates)** | **Random Effects (standard deviation)** |
| Subspecies | 0.031 |  | Intercept | 0.475 |  |
| Sex | 0.000 |  | Subspecies Musculus | 0.006 |  |
| Subspecies\*Sex | 0.047 |  | Subspecies Molossinus | -0.003 |  |
| Strain(random) | 0.244 |  | Sex(male) | 0.069 |  |
|  |  |  | Musculus\*male | 0.052 |  |
|  |  |  | Molossinus\*male | -0.008 |  |
|  |  |  | Intercept (strain) |  | 0.009 |
|  |  |  | Strain (residual) |  | 0.048 |

Supplemental Table 32

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M2 Normalized Interfocal Distance** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.461 | 0.023 | 19.812 | 0.000 |
| Subspecies Musculus | 0.021 | 0.031 | 0.659 | 0.512 |
| Subspecies Molossinus | 0.003 | 0.048 | 0.061 | 0.952 |
| Sex (male) | 0.082 | 0.031 | 2.619 | 0.011 |
| Strain G | 0.027 | 0.030 | 0.892 | 0.375 |
| Strain LEW | 0.012 | 0.028 | 0.432 | 0.667 |
| Strain PWD | -0.002 | 0.026 | -0.073 | 0.942 |
| Strain MSM | 0.009 | 0.036 | 0.247 | 0.806 |
| Strain SKIVE | 0.000 | 0.031 | 0.010 | 0.992 |
| Subspecies Musculus \* Sex (male) | -0.043 | 0.046 | -0.934 | 0.354 |
| Subspecies Molossinus \* Sex (male) | -0.016 | 0.047 | -0.338 | 0.736 |
| Strain G \* Sex (male) | -0.029 | 0.040 | -0.739 | 0.462 |
| Strain LEW \* Sex (male) | 0.000 | 0.041 | -0.007 | 0.995 |
| Strain PWD \* Sex (male) | 0.085 | 0.043 | 1.993 | 0.050 |
| Strain SKIVE \* Sex (male) | 0.121 | 0.045 | 2.699 | 0.009 |

Supplemental Table 33

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M3 Normalized Interfocal Distance** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.461 | 0.023 | 19.812 | 0.000 |
| Sex (male) | 0.082 | 0.031 | 2.619 | 0.011 |
| Strain G | 0.027 | 0.030 | 0.892 | 0.375 |
| Strain LEW | 0.012 | 0.028 | 0.432 | 0.667 |
| Strain PWD | 0.019 | 0.028 | 0.668 | 0.506 |
| Strain MSM | 0.012 | 0.033 | 0.357 | 0.722 |
| Strain MOLF | -0.013 | 0.031 | -0.418 | 0.678 |
| Strain SKIVE | 0.021 | 0.033 | 0.635 | 0.528 |
| Strain KAZ | 0.021 | 0.031 | 0.659 | 0.512 |
| Strain G \* Sex (male) | -0.029 | 0.040 | -0.739 | 0.462 |
| Strain LEW \* Sex (male) | 0.000 | 0.041 | -0.007 | 0.995 |
| Strain PWD \* Sex (male) | 0.042 | 0.041 | 1.038 | 0.303 |
| Strain MSM \* Sex (male) | -0.016 | 0.047 | -0.338 | 0.736 |
| Strain SKIVE \* Sex (male) | 0.078 | 0.043 | 1.821 | 0.073 |
| Strain KAZ \* Sex (male) | -0.043 | 0.046 | -0.934 | 0.354 |

Supplemental Table 34

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Female**  **Normalized Interfocal Distance** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.461 | 0.026 | 18.066 | 0.000 |
| Subspecies Musculus | 0.021 | 0.034 | 0.601 | 0.552 |
| Subspecies Molossinus | 0.012 | 0.036 | 0.325 | 0.747 |
| Strain G | 0.027 | 0.033 | 0.814 | 0.422 |
| Strain LEW | 0.012 | 0.031 | 0.394 | 0.696 |
| Strain PWD | -0.002 | 0.028 | -0.067 | 0.947 |
| Strain SKIVE | 0.000 | 0.034 | 0.009 | 0.993 |

Supplemental Table 35

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Female**  **Normalized Interfocal Distance** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.461 | 0.026 | 18.066 | 0.000 |
| Strain G | 0.027 | 0.033 | 0.814 | 0.422 |
| Strain LEW | 0.012 | 0.031 | 0.394 | 0.696 |
| Strain PWD | 0.019 | 0.031 | 0.609 | 0.546 |
| Strain MSM | 0.012 | 0.036 | 0.325 | 0.747 |
| Strain SKIVE | 0.021 | 0.036 | 0.579 | 0.567 |
| Strain KAZ | 0.021 | 0.034 | 0.601 | 0.552 |

Supplemental Table 36

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M4 Male**  **Normalized Interfocal Distance** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.543 | 0.019 | 29.268 | 0.000 |
| Subspecies Musculus | -0.017 | 0.030 | -0.564 | 0.576 |
| Subspecies Molossinus | -0.013 | 0.028 | -0.469 | 0.642 |
| Strain G | -0.003 | 0.023 | -0.110 | 0.913 |
| Strain LEW | 0.012 | 0.026 | 0.459 | 0.649 |
| Strain PWD | 0.078 | 0.030 | 2.573 | 0.014 |
| Strain MSM | 0.009 | 0.032 | 0.277 | 0.783 |
| Strain SKIVE | 0.116 | 0.029 | 4.046 | 0.000 |
| Strain KAZ | -0.005 | 0.034 | -0.160 | 0.874 |

Supplemental Table 37

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M5 Male**  **Normalized Interfocal Distance** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 0.543 | 0.019 | 29.268 | 0.000 |
| Strain G | -0.003 | 0.023 | -0.110 | 0.913 |
| Strain LEW | 0.012 | 0.026 | 0.459 | 0.649 |
| Strain PWD | 0.061 | 0.026 | 2.320 | 0.026 |
| Strain MSM | -0.004 | 0.030 | -0.140 | 0.889 |
| Strain MOLF | -0.013 | 0.028 | -0.469 | 0.642 |
| Strain SKIVE | 0.099 | 0.024 | 4.065 | 0.000 |
| Strain KAZ | -0.022 | 0.030 | -0.743 | 0.462 |
| Strain CZECH | -0.017 | 0.030 | -0.564 | 0.576 |

Supplemental Table 38

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **M1 Raw**  **Interfocal Distance** | **p values** |  |  | **Coefficients (fixed estimates)** | **Random Effects (standard deviation)** |
| Subspecies | 0.128 |  | Intercept | 57.461 |  |
| Sex | 0.026 |  | Subspecies Musculus | -0.713 |  |
| Subspecies\*Sex | 0.084 |  | Subspecies Molossinus | 2.932 |  |
| Strain(random) | 0.409 |  | Sex(male) | -6.68 |  |
|  |  |  | Musculus \*male | 7.364 |  |
|  |  |  | Molosinus\*male | -4.536 |  |
|  |  |  | Intercept (strain) |  | 0 |
|  |  |  | Strain (residual) |  | 7.78 |

Supplemental Table 39

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M2 Raw**  **Interfocal Distance** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 53.713 | 3.788 | 14.179 | 0.000 |
| Subspecies Musculus | 8.732 | 5.082 | 1.718 | 0.090 |
| Subspecies Molossinus | 4.038 | 7.886 | 0.512 | 0.610 |
| Sex (male) | -5.769 | 5.082 | -1.135 | 0.260 |
| Strain G | 6.534 | 4.890 | 1.336 | 0.186 |
| Strain LEW | 3.532 | 4.639 | 0.761 | 0.449 |
| Strain PWD | -6.918 | 4.226 | -1.637 | 0.106 |
| Strain MSM | 2.642 | 5.786 | 0.457 | 0.649 |
| Strain SKIVE | -10.073 | 5.082 | -1.982 | 0.052 |
| Subspecies Musculus \* Sex (male) | -8.650 | 7.513 | -1.151 | 0.254 |
| Subspecies Molossinus \* Sex (male) | -3.938 | 7.701 | -0.511 | 0.611 |
| Strain G \* Sex (male) | -2.717 | 6.463 | -0.420 | 0.676 |
| Strain LEW \* Sex (male) | 0.376 | 6.670 | 0.056 | 0.955 |
| Strain PWD \* Sex (male) | 18.610 | 6.962 | 2.673 | 0.009 |
| Strain SKIVE \* Sex (male) | 21.876 | 7.291 | 3.000 | 0.004 |

Supplemental Table 40

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **M3 Raw**  **Interfocal Distance** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 53.713 | 3.788 | 14.179 | 0.000 |
| Sex (male) | -5.769 | 5.082 | -1.135 | 0.260 |
| Strain G | 6.534 | 4.890 | 1.336 | 0.186 |
| Strain LEW | 3.532 | 4.639 | 0.761 | 0.449 |
| Strain PWD | 1.814 | 4.553 | 0.398 | 0.692 |
| Strain MSM | 6.680 | 5.357 | 1.247 | 0.217 |
| Strain MOLF | 0.100 | 5.082 | 0.020 | 0.984 |
| Strain SKIVE | -1.341 | 5.357 | -0.250 | 0.803 |
| Strain KAZ | 8.732 | 5.082 | 1.718 | 0.090 |
| Strain G \* Sex (male) | -2.717 | 6.463 | -0.420 | 0.676 |
| Strain LEW \* Sex (male) | 0.376 | 6.670 | 0.056 | 0.955 |
| Strain PWD \* Sex (male) | 9.960 | 6.610 | 1.507 | 0.137 |
| Strain MSM \* Sex (male) | -3.938 | 7.701 | -0.511 | 0.611 |
| Strain SKIVE \* Sex (male) | 13.226 | 6.956 | 1.902 | 0.062 |
| Strain KAZ \* Sex (male) | -8.650 | 7.513 | -1.151 | 0.254 |