**Table S1**| Statistical results of morphological trait comparisons between white and common stickleback. Each row corresponds to tests for a single trait. The columns are as follows: the correlation coefficient and p value for the relationship between body size (standard length or c-value) for all samples, as determined by standardized major axis regression; the mean difference in standardized trait values (in units of SDs) as determined by either ANCOVA or standardized major axis regression; The standard of the estimated mean trait difference; the type of statistical test used to compare trait values for the species (Wald = Wald Chi Squared test, implement in the sma() function in the R package smatr; ANCOVA = standard ANOVA); the raw p value for the test, the FDR corrected p value (q value) for the test. Traits displaying r2 > 0.4 and p < 0.05 for association with body size were size-controlled via standardized major axis regression, all tests are otherwise simple comparisons via appropriate linear models.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Body Size Correlation | | Test of Species Differences | | | | |
| Trait | r2 | p value | Mean Difference | SE Difference | Test Type | p value | Adjusted  p value |
| Body Depth | 0.895 | 9.06×10-120 | -0.058 | 0.069 | Wald | 0.300 | 0.487 |
| Short Gill Raker Length | 2.34×10-5 | 0.968 | 0.000 | 0.079 | ANOVA | 0.996 | 0.996 |
| Egg Number | 0.624 | 1.37×10-14 | 0.796 | 0.316 | Wald | 0.002 | 0.007 |
| Egg Weight | 0.107 | 0.009 | -0.659 | 0.246 | ANOVA | 0.009 | 0.028 |
| Body Lightness | 0.028 | 0.009 | 0.280 | 0.133 | ANOVA | 0.036 | 0.096 |
| Shape PC1 | 0.006 | 0.277 | 0.131 | 0.126 | ANOVA | 0.302 | 0.487 |
| Shape PC2 | 0.003 | 0.385 | 0.042 | 0.140 | ANOVA | 0.767 | 0.894 |
| Shape PC3 | 0.017 | 0.052 | -0.215 | 0.139 | ANOVA | 0.123 | 0.287 |
| Shape PC4 | 8.56×10-5 | 0.892 | 0.114 | 0.139 | ANOVA | 0.414 | 0.543 |
| Shape PC5 | 0.000 | 0.834 | 0.004 | 0.139 | ANOVA | 0.977 | 0.996 |
| Shape PC6 | 0.014 | 0.080 | -0.163 | 0.140 | ANOVA | 0.245 | 0.468 |
| No. Lateral Plates | 0.064 | 0.035 | -0.075 | 0.080 | ANOVA | 0.348 | 0.487 |
| No. Long Gill Rakers | 0.015 | 0.318 | 0.075 | 0.079 | ANOVA | 0.346 | 0.487 |
| No. Short Gill Rakers | 3.31×10-5 | 0.963 | 0.057 | 0.079 | ANOVA | 0.471 | 0.582 |
| 1st Dorsal Spine Length | 0.216 | 3.64×10-14 | -0.541 | 0.088 | ANOVA | 2.87×10-9 | 2.01×10-8 |
| 2nd Dorsal Spine Length | 0.186 | 3.31×10-12 | -0.566 | 0.103 | ANOVA | 1.01×10-7 | 5.32×10-7 |
| 3rd Dorsal Spine Length | 0.031 | 0.006 | -0.190 | 0.134 | ANOVA | 0.158 | 0.331 |
| Pelvic Spine Length | 0.228 | 5.39×10-15 | -0.898 | 0.122 | ANOVA | 2.78×10-12 | 2.92×10-11 |
| Standard Length | 0.938 | 2.89×10-132 | -1.336 | 0.106 | ANOVA | 9.14×10-28 | 1.92×10-26 |
| Testis Weight | 0.243 | 1.67×10-6 | -0.752 | 0.205 | ANOVA | 0.000 | 0.002 |
| Long Gill Raker Length | 0.027 | 0.174 | 0.019 | 0.079 | ANOVA | 0.811 | 0.897 |