**Table S5. Statistical analysis of age-dependent expression changes in termite kings.**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene symbol | LR | *P*-value | FDR |
| UBC9 | 11.520  | 0.003  | **<0.001 \*\*\*** |
| RPA1 | 13.684  | 0.001  | **<0.001 \*\*\*** |
| RMI1 | 67.722  | 0.000  | **<0.001 \*\*\*** |
| PARP1 | 6.802  | 0.033  | **<0.001 \*\*\*** |
| †CSNK2A | 6.365  | 0.041  | <0.001 \*\*\* |
| RFC3 | 123.865  | 0.000  | **<0.001 \*\*\***  |
| †RRP1 | 16.845  | 0.000  | <0.001 \*\*\* |
| RAD23B | 4.789  | 0.091  | **<0.001 \*\*\*** |
| APLF | 12.403  | 0.002  | **<0.001 \*\*\*** |
| HUS1 | 2.344  | 0.310  | **0.037 \*** |
| POLG1 | 1.735  | 0.420  | **<0.001 \*\*\*** |
| NBS1 | 10.395  | 0.006  | **<0.001 \*\*\*** |
| XRCC3 | 9.567  | 0.008  | **<0.001 \*\*\*** |
| †SSBP | 25.874  | 0.000  | 0.017 \* |
| CHK1 | 1.457  | 0.483  | **<0.001 \*\*\*** |
| ALKBH1 | 1.569  | 0.456  | **<0.001 \*\*\*** |
| MERIT40 | 0.951  | 0.621  | **<0.001 \*\*\*** |
| MCPH1 | 9.709  | 0.008  | **<0.001 \*\*\*** |
| ALKBH7 | 24.288  | 0.000  | **<0.001 \*\*\*** |
| †TP53 | 4.863  | 0.088  | <0.001 \*\*\* |
| ERCC8 | 61.980  | 0.000  | **<0.001 \*\*\*** |
| XRCC2 | 5.381  | 0.068  | **<0.001 \*\*\*** |
| APTX | 5.149  | 0.076  | **<0.001 \*\*\*** |
| MAPK14 | 5.910  | 0.052  | **<0.001 \*\*\*** |
| NTHL1 | 6.998  | 0.030  | **<0.001 \*\*\*** |
| SSRP1 | 57.543  | 0.000  | **<0.001 \*\*\*** |
| DCLRE1A | 3.560  | 0.169  | **<0.001 \*\*\*** |
| MDC1 | 34.649  | 0.000  | **0.013 \*** |
| EN5 | 114.564  | 0.000  | **0.025 \*** |
| †RTEL1 | 93.255  | 0.000  | <0.001 \*\*\* |
| RAD1 | 18.431  | 0.000  | **<0.001 \*\*\*** |
| RAD9A | 125.513  | 0.000  | **0.005 \*\*** |
| RAD50 | 31.563  | 0.000  | **<0.001 \*\*\*** |
| CDC6 | 232.748  | 0.000  | **<0.001 \*\*\*** |
| GTF2H2 | 21.009  | 0.000  | **<0.001 \*\*\*** |
| BRCA1 | 44.421  | 0.000  | **<0.001 \*\*\*** |
| ABRA1 | 46.829  | 0.000  | **<0.001 \*\*\*** |
| GEN1 | 3.812  | 0.149  | **<0.001 \*\*\*** |
| XRCC4 | 20.167  | 0.000  | 0.313 |
| CDK1 | 2.073  | 0.355  | **<0.001 \*\*\*** |
| ALKBH8 | 25.699  | 0.000  | 0.178 |
| DDB1 | 70.011  | 0.000  | **<0.001 \*\*\*** |
| †DCLRE1C | 74.699  | 0.000  | <0.001 \*\*\* |
| TIM | 75.973  | 0.000  | **<0.001 \*\*\*** |
| MPG | 11.206  | 0.004  | **<0.001 \*\*\*** |
| POLI | 204.229  | 0.000  | **<0.001 \*\*\*** |
| RFC5 | 25.400  | 0.000  | **<0.001 \*\*\*** |
| BRE | 4.661  | 0.097  | **<0.001 \*\*\*** |
| SLX4 | 21.120  | 0.000  | **<0.001 \*\*\*** |
| RAD51C | 29.931  | 0.000  | **<0.001 \*\*\*** |
| MRE11 | 7.797  | 0.020  | **<0.001 \*\*\*** |
| RAD18 | 23.465  | 0.000  | **<0.001 \*\*\*** |
| PCNA | 153.995  | 0.000  | **<0.001 \*\*\*** |
| PIAS1 | 181.702  | 0.000  | **0.001 \*\*** |
| TAOK1 | 287.130  | 0.000  | 0.557  |
| †ALKBH4 | 0.911  | 0.634  | 0.001 \*\* |
| XPC | 57.744  | 0.000  | 0.349  |
| KU80 | 33.278  | 0.000  | **<0.001 \*\*\*** |
| RFC4 | 11.110  | 0.004  | **<0.001 \*\*\*** |
| RNF168 | 141.981  | 0.000  | **<0.001 \*\*\*** |
| †CDK2 | 75.346  | 0.000  | 0.001 \*\* |
| RECQL4 | 19.311  | 0.000  | **<0.001 \*\*\*** |
| RAD51D | 113.362  | 0.000  | **<0.001 \*\*\*** |
| †LIG4 | 30.489  | 0.000  | 0.026 \* |
| BLM | 6.322  | 0.042  | **<0.001 \*\*\*** |
| HELQ | 78.811  | 0.000  | **<0.001 \*\*\*** |
| TP53BP1 | 166.229  | 0.000  | **<0.001 \*\*\*** |
| SHPRH | 77.425  | 0.000  | **0.042 \*** |
| †ALKBH6 | 7.311  | 0.026  | <0.001 \*\*\* |
| PRIM2 | 44.264  | 0.000  | **<0.001 \*\*\*** |
| RAD52 | 38.930  | 0.000  | **<0.001 \*\*\*** |
| TOPBP1 | 14.300  | 0.001  | **<0.001 \*\*\*** |
| ERCC1 | 43.971  | 0.000  | **<0.001 \*\*\*** |
| RFC2 | 110.170  | 0.000  | **0.004 \*\*** |
| ERCC5 | 43.309  | 0.000  | **<0.001 \*\*\*** |
| ERCC6 | 2.106  | 0.349  | **<0.001 \*\*\*** |
| DCLRE1B | 14.073  | 0.001  | 0.634  |
| RAD54-like | 1.169  | 0.557  | **<0.001 \*\*\*** |
| MLH1 | 59.919  | 0.000  | **<0.001 \*\*\*** |
| BRCA2 | 60.365  | 0.000  | **<0.001 \*\*\*** |
| CHK2 | 2.175  | 0.337  | **<0.001 \*\*\*** |
| BRCC3 | 15.904  | 0.000  | **<0.001 \*\*\*** |
| SLX1 | 102.970  | 0.000  | **<0.001 \*\*\*** |
| PMS1 | 30.859  | 0.000  | 0.097  |
| ASCC3b | 21.055  | 0.000  | **<0.001 \*\*\*** |
| MSH4 | 64.312  | 0.000  | **<0.001 \*\*\*** |
| POLB | 48.574  | 0.000  | **0.004 \*\*** |
| HERC2 | 84.046  | 0.000  | **<0.001 \*\*\*** |
| SMARCAL1 | 24.457  | 0.000  | **<0.001 \*\*\*** |
| ASCC3a | 53.525  | 0.000  | **<0.001 \*\*\*** |
| PNKP | 3.451  | 0.178  | **<0.001 \*\*\*** |
| RMI2 | 489.236  | 0.000  | 0.355  |
| ALKBH5 | 2.323  | 0.313  | **<0.001 \*\*\*** |
| XPF | 223.466  | 0.000  | 0.149  |
| CLASPIN | 184.827  | 0.000  | **<0.001 \*\*\*** |
| ERCC2 | 28.295  | 0.000  | **<0.001 \*\*\*** |
| MGMT | 74.780  | 0.000  | **<0.001 \*\*\*** |
| †UBC13 | 79.869  | 0.000  | <0.001 \*\*\* |
| ATR | 10.684  | 0.005  | **<0.001 \*\*\*** |
| ATM | 27.389  | 0.000  | **<0.001 \*\*\*** |
| MSH6 | 8.727  | 0.013  | **<0.001 \*\*\*** |
| MSH3 | 18.502  | 0.000  | 0.169  |
| KU70 | 52.963  | 0.000  | **<0.001 \*\*\*** |
| RNF8 | 86.397  | 0.000  | **0.030 \*** |
| H2AFY | 102.170  | 0.000  | 0.052  |
| ECT2 | 76.372  | 0.000  | 0.076  |
| ERCC3 | 78.133  | 0.000  | 0.068  |
| FANCM | 20.888  | 0.000  | **<0.001 \*\*\*** |
| CRY1 | 21.298  | 0.000  | 0.088  |
| PMS2 | 37.776  | 0.000  | **<0.001 \*\*\*** |
| DDX1 | 281.680  | 0.000  | **0.008 \*\*** |
| XPA | 29.335  | 0.000  | 0.621  |
| RAD17 | 42.386  | 0.000  | 0.456  |
| RAD51A | 55.338  | 0.000  | 0.483  |
| †REV1 | 8.898  | 0.012  | <0.001 \*\*\* |
| BRIP1 | 8.095  | 0.017  | **<0.001 \*\*\*** |
| NHEJ1 | 167.933  | 0.000  | **0.008 \*\*** |
| †MAPKAPK2 | 63.215  | 0.000  | 0.006 \*\* |
| RFC1 | 46.606  | 0.000  | 0.420  |
| XRCC1 | 6.567  | 0.037  | 0.310  |
| †POLH | 113.077  | 0.000  | 0.002 \*\* |
| MUS81 | 15.923  | 0.000  | 0.091  |
| RAD54B | 55.686  | 0.000  | **<0.001 \*\*\*** |
| BARD1 | 48.277  | 0.000  | **0.041 \*** |
| †EME1 | 44.582  | 0.000  | 0.033 \* |
| MLH3 | 239.105  | 0.000  | **<0.001 \*\*\*** |
| PRKDC | 36.703  | 0.000  | **0.001 \*\*** |

Comparison of normalized counts per million among castes was conducted using the edgeR package. Bold letters indicate significant differences (\*FDR < 0.05, \*\*FDR < 0.01, \*\*FDR < 0.001). LR: likelihood ratio, FDR: false discovery rate. The expression of several genes did not differ between young and mature primary kings (dagger footnote).