

Additional file 7: Table S4

Expression data of iBeetle-detected genes involved in stink gland function

| iB_#     | OGS_#<br>(ass.3.0) | male - thx |         | female - thx |         | male - abd |         | female - abd |         | reference tissue<br>(mid abdomen) |         | log2 FC (sample reads/reference reads) |              |            |              |
|----------|--------------------|------------|---------|--------------|---------|------------|---------|--------------|---------|-----------------------------------|---------|----------------------------------------|--------------|------------|--------------|
|          |                    | reads      | depth   | reads        | depth   | reads      | depth   | reads        | depth   | reads                             | depth   | male - thx                             | female - thx | male - abd | female - abd |
| iB_00081 | Tc_000379          | 2466       | 143,28  | 2331         | 135,44  | 2332       | 135,50  | 3090         | 179,54  | 1031                              | 59,91   | 1,258                                  | 1,177        | 1,178      | 1,584        |
| iB_00105 | Tc_000476          | 29304      | 1718,44 | 30781        | 1805,06 | 27672      | 1622,74 | 17243        | 1011,16 | 17513                             | 1027,00 | 0,743                                  | 0,814        | 0,660      | -0,022       |
| iB_00110 | Tc_000504          | 45         | 0,92    | 99           | 2,02    | 85         | 1,73    | 122          | 2,49    | 13                                | 0,27    | 1,791                                  | 2,929        | 2,709      | 3,230        |
| iB_00185 | Tc_000885          | 144        | 5,85    | 113          | 4,59    | 54         | 2,19    | 10           | 0,41    | 157                               | 6,37    | -0,125                                 | -0,474       | -1,540     | -3,973       |
| iB_00414 | Tc_002616          | 2227       | 58,77   | 2140         | 56,47   | 2323       | 61,30   | 3540         | 93,42   | 1747                              | 46,10   | 0,350                                  | 0,293        | 0,411      | 1,019        |
| iB_00754 | Tc_004698          | 779        | 7,93    | 591          | 6,02    | 820        | 8,35    | 1094         | 11,14   | 2216                              | 22,56   | -1,508                                 | -1,907       | -1,434     | -1,018       |
| iB_01044 | Tc_006408          | 7507       | 270,91  | 7545         | 272,28  | 8356       | 301,55  | 7917         | 285,70  | 14097                             | 508,72  | -0,909                                 | -0,902       | -0,755     | -0,832       |
| iB_01236 | Tc_007650          | 361        | 6,30    | 356          | 6,21    | 423        | 7,38    | 450          | 7,85    | 336                               | 5,86    | 0,104                                  | 0,083        | 0,332      | 0,421        |
| iB_01372 | Tc_008608          | 144        | 1,72    | 69           | 0,83    | 179        | 2,14    | 176          | 2,11    | 2111                              | 25,25   | -3,874                                 | -4,935       | -3,560     | -3,584       |
| iB_01440 | Tc_008936          | 162        | 6,68    | 170          | 7,01    | 174        | 7,18    | 140          | 5,78    | 1216                              | 50,17   | -2,908                                 | -2,839       | -2,805     | -3,119       |
| iB_01644 | Tc_010033          | 926        | 39,76   | 978          | 41,99   | 1311       | 56,29   | 871          | 37,40   | 603                               | 25,89   | 0,619                                  | 0,698        | 1,120      | 0,533        |
| iB_01798 | Tc_011075          | 153        | 10,77   | 105          | 7,39    | 150        | 10,56   | 625          | 43,98   | 3516                              | 247,42  | -4,522                                 | -5,065       | -4,551     | -2,492       |
| iB_01814 | Tc_011159          | 1588       | 55,72   | 1479         | 51,89   | 956        | 33,54   | 847          | 29,72   | 1829                              | 64,18   | -0,204                                 | -0,306       | -0,936     | -1,111       |
| iB_01910 | Tc_011969          | 3          | 0,09    | 0            | 0       | 587        | 16,82   | 2            | 0,06    | 3                                 | 0,09    | 0                                      | -            | 7,612      | -0,585       |
| iB_01975 | Tc_012387          | 2          | 0,03    | 0            | 0       | 2716       | 34,13   | 0            | 0       | 4                                 | 0,05    | -1,000                                 | -            | 9,407      | -            |
| iB_02292 | Tc_014494          | 456        | 13,25   | 492          | 14,29   | 546        | 15,86   | 463          | 13,45   | 372                               | 10,81   | 0,294                                  | 0,403        | 0,554      | 0,316        |
| iB_02297 | Tc_014520          | 556        | 11,40   | 499          | 10,23   | 576        | 11,81   | 521          | 10,68   | 1025                              | 21,01   | -0,882                                 | -1,039       | -0,831     | -0,976       |
| iB_02301 | Tc_014544          | 7          | 0,22    | 20           | 0,64    | 231        | 7,35    | 33           | 1,05    | 65                                | 2,07    | -3,215                                 | -1,700       | 1,829      | -0,978       |
| iB_02367 | Tc_014967          | 115        | 3,71    | 106          | 3,42    | 140        | 4,51    | 116          | 3,74    | 78                                | 2,51    | 0,560                                  | 0,443        | 0,844      | 0,573        |
| iB_02401 | Tc_015095          | 1527       | 39,15   | 1831         | 46,95   | 1367       | 35,05   | 1031         | 26,44   | 881                               | 22,59   | 0,793                                  | 1,055        | 0,634      | 0,227        |
| iB_02416 | Tc_015165          | 550        | 30,42   | 515          | 28,49   | 557        | 30,81   | 425          | 23,51   | 241                               | 13,33   | 1,190                                  | 1,096        | 1,209      | 0,818        |
| iB_02428 | Tc_015203          | 427        | 10,36   | 344          | 8,35    | 515        | 12,50   | 73           | 1,77    | 251                               | 6,09    | 0,767                                  | 0,455        | 1,037      | -1,782       |
| iB_02471 | Tc_015379          | 616        | 16,57   | 487          | 13,10   | 2226       | 59,86   | 3212         | 86,38   | 132                               | 3,55    | 2,222                                  | 1,883        | 4,076      | 4,605        |
| iB_02516 | Tc_015811          | 682        | 21,23   | 757          | 23,56   | 881        | 27,42   | 814          | 25,33   | 367                               | 11,42   | 0,894                                  | 1,045        | 1,263      | 1,149        |
| iB_02517 | Tc_015817          | 4          | 0,44    | 3            | 0,33    | 11         | 1,20    | 5            | 0,55    | 31                                | 3,39    | -2,954                                 | -3,369       | -1,495     | -2,632       |
|          | Tc_015818          | 1563       | 16,68   | 1182         | 12,61   | 2019       | 21,55   | 1442         | 15,39   | 1537                              | 16,40   | 0,024                                  | -0,379       | 0,394      | -0,092       |
| iB_02542 | Tc_015993          | 6654       | 170,62  | 5142         | 131,85  | 1761       | 45,15   | 1126         | 28,87   | 4431                              | 113,62  | 0,587                                  | 0,215        | -1,331     | -1,976       |
| iB_02563 | Tc_016253          | 50         | 2,48    | 65           | 3,23    | 52         | 2,58    | 41           | 2,04    | 234                               | 11,62   | -2,227                                 | -1,848       | -2,170     | -2,513       |
|          | Tc_016254          | 767        | 10,69   | 710          | 9,89    | 3365       | 46,89   | 10312        | 143,69  | 2551                              | 35,55   | -1,734                                 | -1,845       | 0,400      | 2,015        |
| iB_02584 | Tc_030051          | 1210       | 29,08   | 1089         | 26,17   | 1279       | 30,74   | 1205         | 28,96   | 621                               | 14,93   | 0,962                                  | 0,810        | 1,042      | 0,956        |
| iB_02625 | Tc_011255          | 466        | 5,26    | 421          | 4,75    | 836        | 9,43    | 757          | 8,54    | 1731                              | 19,52   | -1,893                                 | -2,040       | -1,050     | -1,193       |
| iB_02627 | Tc_011288          | 156        | 1,66    | 115          | 1,23    | 95         | 1,01    | 60           | 0,64    | 1637                              | 17,44   | -3,391                                 | -3,831       | -4,107     | -4,770       |
| iB_02633 | Tc_011371          | 275        | 4,58    | 222          | 3,70    | 265        | 4,41    | 285          | 4,74    | 774                               | 12,88   | -1,493                                 | -1,802       | -1,546     | -1,441       |
| iB_02673 | Tc_000239          | 1          | 0,19    | 1            | 0,19    | 1          | 0,19    | 1            | 0,19    | 10                                | 1,86    | -3,322                                 | -3,322       | -3,322     | -3,322       |
|          | Tc_000240          | 16         | 0,40    | 22           | 0,55    | 16         | 0,40    | 36           | 0,90    | 279                               | 6,97    | -4,124                                 | -3,665       | -4,124     | -2,954       |
| iB_02692 | Tc_003063          | 489        | 2,50    | 363          | 1,86    | 913        | 4,67    | 1518         | 7,77    | 3242                              | 16,59   | -2,729                                 | -3,159       | -1,828     | -1,095       |
| iB_02716 | Tc_002723          | 2823       | 12,35   | 2279         | 9,97    | 3947       | 17,27   | 6931         | 30,33   | 4815                              | 21,07   | -0,770                                 | -1,079       | -0,287     | 0,526        |
| iB_02743 | Tc_003968          | 29         | 1,48    | 19           | 0,97    | 99         | 5,04    | 58           | 2,95    | 56                                | 2,85    | -0,949                                 | -1,559       | 0,822      | 0,051        |
| iB_02774 | Tc_008303          | 419        | 6,28    | 343          | 5,14    | 448        | 6,72    | 449          | 6,73    | 620                               | 9,29    | -0,565                                 | -0,854       | -0,469     | -0,466       |
| iB_02931 | Tc_011810          | 660        | 76,70   | 547          | 63,57   | 698        | 81,11   | 148          | 17,20   | 136                               | 15,80   | 2,279                                  | 2,008        | 2,360      | 0,122        |
|          | Tc_011812          | 7031       | 261,94  | 7559         | 281,61  | 8061       | 300,31  | 2731         | 101,74  | 951                               | 35,43   | 2,886                                  | 2,991        | 3,083      | 1,522        |
| iB_03294 | Tc_002074          | 347        | 4,33    | 314          | 3,92    | 384        | 4,79    | 340          | 4,24    | 806                               | 10,06   | -1,216                                 | -1,360       | -1,070     | -1,245       |
| iB_03401 | Tc_002550          | 607        | 13,05   | 503          | 10,82   | 699        | 15,03   | 637          | 13,70   | 668                               | 14,37   | -0,138                                 | -0,409       | 0,065      | -0,069       |
| iB_03552 | Tc_003409          | 44         | 1,86    | 49           | 2,07    | 40         | 1,69    | 53           | 2,24    | 19                                | 0,80    | 1,212                                  | 1,367        | 1,074      | 1,480        |
| iB_03637 | Tc_003857          | 0          | 0       | 0            | 0       | 2          | 0,07    | 0            | 0       | 45                                | 1,50    | -                                      | -            | -4,492     | -            |
| iB_03693 | Tc_004126          | 91         | 0,56    | 41           | 0,25    | 25         | 0,15    | 17           | 0,10    | 821                               | 5,02    | -3,173                                 | -4,324       | -5,037     | -5,594       |
| iB_03695 | Tc_004129          | 8          | 0,18    | 6            | 0,13    | 8          | 0,18    | 0            | 0       | 41                                | 0,92    | -2,358                                 | -2,773       | -2,358     | -            |
| iB_03780 | Tc_004533          | 370        | 19,21   | 357          | 18,53   | 364        | 18,90   | 470          | 24,40   | 249                               | 12,93   | 0,571                                  | 0,520        | 0,548      | 0,917        |
|          | Tc_004534          | 847        | 34,28   | 783          | 31,69   | 903        | 36,54   | 876          | 35,4505 | 384                               | 15,5399 | 1,141                                  | 1,028        | 1,234      | 1,190        |
| iB_03913 | Tc_005167          | 670        | 9,19    | 672          | 9,22    | 1101       | 15,11   | 1069         | 14,67   | 1211                              | 16,62   | -0,854                                 | -0,850       | -0,137     | -0,180       |
| iB_04066 | Tc_006098          | 12         | 0,07    | 16           | 0,09    | 40         | 0,23    | 36           | 0,21    | 2391                              | 13,94   | -7,638                                 | -7,223       | -5,901     | -6,053       |
| iB_04137 | Tc_006423          | 2328       | 35,79   | 2109         | 32,42   | 1977       | 30,39   | 1778         | 27,33   | 1746                              | 26,84   | 0,415                                  | 0,273        | 0,179      | 0,026        |
| iB_04205 | Tc_006735          | 248        | 4,47    | 232          | 4,19    | 3447       | 62,20   | 351          | 6,33    | 874                               | 15,77   | -1,817                                 | -1,914       | 1,980      | -1,316       |
| iB_04420 | Tc_008047          | 0          | 0       | 0            | 0       | 0          | 0       | 0            | 0       | 0                                 | 0       | -                                      | -            | -          | -            |
| iB_04702 | Tc_009790          | 404        | 33,8896 | 360          | 30,20   | 368        | 30,8698 | 183          | 15,35   | 450                               | 37,75   | -0,156                                 | -0,322       | -0,290     | -1,298       |
|          | Tc_009792          | 2016       | 60,37   | 1991         | 59,62   | 1705       | 51,06   | 1261         | 37,76   | 1457                              | 43,63   | 0,468                                  | 0,450        | 0,227      | -0,208       |
| iB_04717 | Tc_009877          | 3          | 0,07    | 4            | 0,09    | 82         | 1,92    | 20           | 0,47    | 26                                | 0,61    | -3,115                                 | -2,700       | 1,657      | -0,379       |
| iB_04797 | Tc_010251          | 29710      | 760,26  | 33432        | 855,50  | 39562      | 1012,36 | 14185        | 362,98  | 1510                              | 38,64   | 4,298                                  | 4,469        | 4,711      | 3,232        |
| iB_04839 | Tc_010449          | 963        | 62,23   | 754          | 48,73   | 406        | 26,24   | 866          | 55,97   | 555                               | 35,87   | 0,795                                  | 0,442        | -0,451     | 0,642        |
| iB_04850 | Tc_010484          | 341        | 11,16   | 172          | 5,63    | 312        | 10,21   | 1354         | 44,32   | 3204                              | 104,87  | -3,232                                 | -4,219       | -3,360     | -1,243       |
| iB_05119 | Tc_011865          | 8620       | 328,88  | 7351         | 280,46  | 11479      | 437,954 | 11409        | 435,283 | 3498                              | 133,458 | 1,301                                  | 1,071        | 1,714      | 1,706        |
| iB_05264 | Tc_012539          | 245        | 1,60    | 190          | 1,24    | 280        | 1,82    | 403          | 2,63    | 984                               | 6,41    | -2,006                                 | -2,373       | -1,813     | -1,288       |
| iB_05278 | Tc_012607          | 0          | 0       | 0            | 0       | 1          | 0,10    | 0            | 0       | 3                                 | 0,31    | -                                      | -            | -1,585     | -            |
|          | Tc_012609          | 8          | 0,21    | 5            | 0,13    | 8          | 0,21    | 105          | 2,78    | 7                                 | 0,      |                                        |              |            |              |

Additional file 7: Table S4

Expression data of iBeetle-detected genes involved in stink gland function

|                 |                  |                      |              |             |              |             |               |             |              |           |             |              |              |              |              |
|-----------------|------------------|----------------------|--------------|-------------|--------------|-------------|---------------|-------------|--------------|-----------|-------------|--------------|--------------|--------------|--------------|
| IB_05719        | Tc_014887        | 210                  | 10.43        | 168         | 8.35         | 504         | 25.04         | 2334        | 115.94       | 437       | 21.71       | -1,057       | -1,379       | 0,206        | 2,417        |
| IB_05874        | Tc_015692        | 137                  | 3.59         | 108         | 2.83         | 73          | 1.91          | 101         | 2.65         | 141       | 3.70        | -0,042       | -0,385       | -0,950       | -0,481       |
| IB_05942        | Tc_016013        | 0                    | 0            | 2           | 0.31         | 0           | 0             | 1           | 0.15         | 7         | 1.07        | -            | -1,807       | -            | -2,807       |
|                 | Tc_016016        | 3                    | 0.09         | 3           | 0.09         | 5           | 0.15          | 3           | 0.09         | 19        | 0.59        | -2,663       | -2,663       | -1,926       | -2,663       |
|                 | Tc_016017        | 2                    | 0.15         | 6           | 0.46         | 2           | 0.15          | 9           | 0.69         | 20        | 1.53        | -3,322       | -1,737       | -3,322       | -1,152       |
|                 | Tc_016018        | 51                   | 1.61         | 53          | 1.67         | 38          | 1.20          | 107         | 3.37         | 124       | 3.91        | -1,282       | -1,226       | -1,706       | -0,213       |
| IB_06333        | Tc_014550        | 7                    | 0.34         | 4           | 0.19         | 137         | 6.60          | 17          | 0.82         | 24        | 1.16        | -1,778       | -2,585       | 2,513        | -0,498       |
| IB_06359        | Tc_015905        | 0                    | 0            | 0           | 0            | 180         | 12            | 0           | 0            | 6         | 0.40        | -            | -            | 4,907        | -            |
|                 | Tc_015926        | 31                   | 2.97         | 47          | 4.51         | 57          | 5.47          | 66          | 6.33         | 46        | 4.41        | -0,569       | 0,031        | 0,309        | 0,521        |
| IB_06684        | Tc_001853        | 1                    | 0.04         | 3           | 0.11         | 0           | 0             | 1           | 0.04         | 2         | 0.07        | -1,000       | 0,585        | -            | -1,000       |
|                 | Tc_001855        | 2                    | 0.06         | 0           | 0            | 0           | 0             | 1           | 0.03         | 3         | 0.09        | -0,585       | -            | -            | -1,585       |
| IB_06779        | Tc_004179        | 19                   | 2.97         | 20          | 3.13         | 20          | 3.13          | 24          | 3.75         | 18        | 2.81        | 0,078        | 0,152        | 0,152        | 0,415        |
| IB_06806        | Tc_000393        | 163                  | 3.96         | 284         | 6.89         | 210         | 5.10          | 7112        | 172.58       | 1192      | 28.92       | -2,870       | -2,069       | -2,505       | 2,577        |
| IB_06868        | Tc_003208        | 535                  | 23.21        | 501         | 21.73        | 761         | 33.01         | 500         | 21.69        | 406       | 17.61       | 0,398        | 0,303        | 0,906        | 0,300        |
| IB_07043        | Tc_003827        | 234                  | 5.59         | 238         | 5.69         | 248         | 5.93          | 324         | 7.74         | 185       | 4.42        | 0,339        | 0,363        | 0,423        | 0,808        |
| IB_07188        | Tc_008176        | 1                    | 0.02         | 6           | 0.11         | 15          | 0.27          | 0           | 0            | 9         | 0.16        | -3,170       | -0,585       | 0,737        | -            |
| IB_07361        | Tc_009459        | 1                    | 0.11         | 0           | 0            | 38          | 4.01          | 1           | 0.11         | 4         | 0.42        | -2,000       | -            | 3,248        | -2,000       |
| IB_07747        | Tc_010623        | 1                    | 0.06         | 1           | 0.06         | 1           | 0.06          | 2           | 0.11         | 1         | 0.06        | 0            | 0            | 0            | 1            |
|                 | Tc_010625        | 11                   | 0.11         | 2           | 0.02         | 7           | 0.07          | 14          | 0.14         | 26        | 0.25        | -1,241       | -3,700       | -1,893       | -0,893       |
| IB_07759        | Tc_030320        | 0                    | 0            | 0           | 0            | 0           | 0             | 0           | 0            | 0         | 0           | -            | -            | -            | -            |
| IB_07760        | Tc_016034        | 79                   | 1.59         | 26          | 0.52         | 53          | 1.07          | 32          | 0.65         | 371       | 7.48        | -2,231       | -3,835       | -2,807       | -3,535       |
| IB_07764        | Tc_005075        | 0                    | 0.00         | 0           | 0.00         | 8           | 0.15          | 6           | 0.11         | 6         | 0.11        | -            | -            | 0,415        | 0,000        |
| IB_07772        | Tc_011144        | 583                  | 16.30        | 514         | 14.37        | 639         | 17.87         | 600         | 16.78        | 430       | 12.02       | 0,439        | 0,257        | 0,571        | 0,481        |
| IB_07782        | Tc_006837        | 84                   | 4.84         | 75          | 4.32         | 64          | 3.68          | 51          | 2.94         | 114       | 6.56        | -0,441       | -0,604       | -0,833       | -1,160       |
| IB_07783        | Tc_002154        | 7                    | 0.24         | 4           | 0.14         | 4           | 0.14          | 0           | 0            | 0         | 0           | -            | -            | -            | -            |
|                 | Tc_002155        | 1                    | 0.02         | 0           | 0            | 0           | 0             | 0           | 0            | 0         | 0           | -            | -            | -            | -            |
| IB_07900        | Tc_001243        | 161                  | 3.47         | 150         | 3.23         | 197         | 4.24          | 126         | 2.71         | 134       | 2.89        | 0,265        | 0,163        | 0,556        | -0,089       |
| IB_07902        | Tc_001275        | 0                    | 0            | 0           | 0            | 0           | 0             | 0           | 0            | 0         | 0           | -            | -            | -            | -            |
| IB_07917        | Tc_000183        | 319                  | 25.25        | 336         | 26.60        | 277         | 21.93         | 238         | 18.84        | 226       | 17.89       | 0,497        | 0,572        | 0,294        | 0,075        |
| IB_07918        | Tc_013776        | 703                  | 21.20        | 724         | 21.83        | 521         | 15.71         | 444         | 13.39        | 179       | 5.40        | 1,974        | 2,016        | 1,541        | 1,311        |
| IB_07926        | Tc_003231        | 8                    | 0.50         | 17          | 1.06         | 10          | 0.62          | 6           | 0.37         | 104       | 6.46        | -3,700       | -2,613       | -3,379       | -4,115       |
| IB_08184        | Tc_032964        | newly annotated gene |              |             |              |             |               |             |              |           |             |              |              |              |              |
| IB_08303        | Tc_030655        | 407                  | 27.57        | 345         | 23.37        | 484         | 32.78         | 282         | 19.10        | 361       | 24.45       | 0,173        | -0,065       | 0,423        | -0,356       |
| IB_08398        | Tc_033206        | newly annotated gene |              |             |              |             |               |             |              |           |             |              |              |              |              |
| IB_08468        | Tc_015328        | 1526                 | 124.71       | 1615        | 131.98       | 2087        | 170.55        | 1157        | 94.55        | 1006      | 82.21       | 0,601        | 0,683        | 1,053        | 0,202        |
| IB_08506        | Tc_015537        | 740                  | 40.93        | 570         | 31.53        | 816         | 45.14         | 528         | 29.21        | 461       | 25.50       | 0,683        | 0,306        | 0,824        | 0,196        |
| IB_08561        | Tc_004632        | 367                  | 33.44        | 255         | 23.24        | 141         | 12.85         | 781         | 71.17        | 6         | 0.55        | 5,935        | 5,409        | 4,555        | 7,024        |
| IB_08587        | Tc_009420        | 462                  | 4.19         | 455         | 4.13         | 667         | 6.05          | 1071        | 9.71         | 764       | 6.93        | -0,726       | -0,748       | -0,196       | 0,487        |
| IB_08666        | Tc_009201        | 302                  | 2.49         | 180         | 1.49         | 303         | 2.50          | 314         | 2.59         | 438       | 3.61        | -0,536       | -1,283       | -0,532       | -0,480       |
| IB_08760        | Tc_009422        | 781                  | 48.97        | 714         | 44.77        | 819         | 51.36         | 518         | 32.48        | 415       | 26.02       | 0,912        | 0,783        | 0,981        | 0,320        |
| IB_08861        | Tc_006177        | 0                    | 0            | 0           | 0            | 0           | 0             | 1           | 0.08         | 2         | 0.16        | -            | -            | -            | -1,000       |
| IB_09043        | Tc_016314        | 665                  | 28.75        | 623         | 26.93        | 1315        | 56.85         | 1283        | 55.47        | 322       | 13.92       | 1,046        | 0,952        | 2,030        | 1,994        |
| IB_09050        | Tc_013879        | 159                  | 5.19         | 119         | 3.88         | 145         | 4.73          | 120         | 3.92         | 210       | 6.86        | -0,401       | -0,819       | -0,534       | -0,807       |
|                 | Tc_013880        | 0                    | 0            | 0           | 0            | 0           | 0             | 0           | 0            | 1         | 0.20        | -            | -            | -            | -            |
| IB_09103        | Tc_014482        | 4                    | 0.25         | 2           | 0.12         | 90          | 5.56          | 0           | 0            | 5         | 0.31        | -0,322       | -1,322       | 4,170        | -            |
| IB_09239        | Tc_008912        | 257                  | 16.95        | 207         | 13.66        | 170         | 11.22         | 203         | 13.39        | 294       | 19.40       | -0,194       | -0,506       | -0,790       | -0,534       |
| IB_09272        | Tc_006097        | 57                   | 2.28         | 63          | 2.53         | 36          | 1.44          | 43          | 1.72         | 34        | 1.36        | 0,745        | 0,890        | 0,082        | 0,339        |
| IB_09308        | Tc_005489        | 12                   | 0.44         | 12          | 0.44         | 4           | 0.15          | 1           | 0.04         | 11        | 0.41        | 0,126        | 0,126        | -1,459       | -3,459       |
| IB_09311        | Tc_006635        | 0                    | 0            | 0           | 0            | 1           | 0.05          | 0           | 0            | 8         | 0.37        | -            | -            | -3,000       | -            |
| IB_09326        | Tc_030081        | 1                    | 0.07         | 0           | 0            | 0           | 0             | 3           | 0.20         | 1         | 0.07        | 0,000        | -            | -            | 1,585        |
| IB_09329        | Tc_030130        | 0                    | 0            | 0           | 0            | 0           | 0             | 0           | 0            | 0         | 0           | -            | -            | -            | -            |
| IB_09337        | Tc_030243        | 1                    | 0.03         | 0           | 0            | 1           | 0.03          | 8           | 0.25         | 4         | 0.13        | -2,000       | -            | -2,000       | 1,000        |
| IB_09340        | Tc_000166        | 4                    | 0.13         | 18          | 0.6          | 7           | 0.23          | 0           | 0            | 1         | 0.03        | 2,000        | 4,170        | 2,807        | -            |
|                 | Tc_030316        | 2                    | 0.07         | 2           | 0.07         | 3           | 0.10          | 0           | 0            | 0         | 0           | -            | -            | -            | -            |
| IB_09355        | Tc_006363        | 161                  | 8.22         | 126         | 6.44         | 119         | 6.08          | 159         | 8.12         | 97        | 4.95        | 0,731        | 0,377        | 0,295        | 0,713        |
| IB_09403        | Tc_034170        | newly annotated gene |              |             |              |             |               |             |              |           |             |              |              |              |              |
| <b>IB_09413</b> | <b>Tc_005389</b> | <b>4693</b>          | <b>97.77</b> | <b>4731</b> | <b>98.56</b> | <b>5706</b> | <b>118.88</b> | <b>1632</b> | <b>34.00</b> | <b>25</b> | <b>0.52</b> | <b>7,552</b> | <b>7,564</b> | <b>7,834</b> | <b>6,029</b> |
| IB_09430        | Tc_005306        | 1414                 | 34.51        | 1313        | 32.04        | 1591        | 38.83         | 1202        | 29.34        | 1226      | 29.92       | 0,206        | 0,099        | 0,376        | -0,029       |
| IB_09661        | Tc_001099        | 860                  | 35.03        | 874         | 35.60        | 1025        | 41.75         | 849         | 34.58        | 301       | 12.26       | 1,515        | 1,538        | 1,768        | 1,496        |
| IB_09736        | Tc_003166        | 0                    | 0            | 0           | 0            | 0           | 0             | 0           | 0            | 0         | 0           | -            | -            | -            | -            |
| IB_09896        | Tc_007557        | 36                   | 0.32         | 17          | 0.15         | 25          | 0.22          | 45          | 0.40         | 245       | 2.18        | -2,767       | -3,849       | -3,293       | -2,445       |
| IB_09910        | Tc_007292        | 214                  | 7.93         | 149         | 5.52         | 282         | 10.44         | 298         | 11.04        | 598       | 22.15       | -1,483       | -2,005       | -1,084       | -1,005       |
| IB_09924        | Tc_008270        | 65                   | 2.23         | 65          | 2.23         | 75          | 2.57          | 37          | 1.27         | 168       | 5.77        | -1,370       | -1,370       | -1,163       | -2,183       |
| IB_09988        | Tc_014025        | 1515                 | 43.32        | 1535        | 43.89        | 1041        | 29.77         | 588         | 16.81        | 841       | 24.05       | 0,849        | 0,868        | 0,308        | -0,516       |
| IB_09991        | Tc_014033        | 325                  | 22.87        | 336         | 23.64        | 133         | 9.36          | 97          | 6.83         | 179       | 12.60       | 0,860        | 0,909        | -0,429       | -0,884       |
| IB_10007        | Tc_033075        | newly annotated gene |              |             |              |             |               |             |              |           |             |              |              |              |              |
| IB_10104        | Tc_013627        | 295                  | 1.87         | 205         | 1.30         | 130         | 0.82          | 651         | 4.13         | 10437     | 66.23       | -5,145       | -5,670       | -6,327       | -4,003       |
| IB_10133        | Tc_014774        | 584                  | 9.48         | 538         | 8.74         | 596         | 9.68          | 610         | 9.91         | 535       | 8.69        | 0,126        | 0,008        | 0,156        | 0,189        |
| IB_10156        | Tc_015307        | 3197                 | 52.94        | 2938        | 48.65        | 3400        | 56.30         | 4317        | 71.48        | 1868      | 30.93       | 0,775        | 0,653        | 0,864        | 1,209        |
| IB_10159        | Tc_015429        | 12498                | 401.73       | 14782       | 475.23       | 19055       | 612.60        | 8154        | 262.14       | 2891      | 92.94       | 2,112        | 2,354        | 2,721        | 1,496        |
| IB_10181        | Tc_015547        | 638                  | 48.39        | 589         | 44.67        | 613         | 46.50         | 619         | 46.95        | 344       | 26.09       | 0,891        | 0,776        | 0,833        | 0,848        |
| IB_10206        | Tc_015049        | 215                  | 2.51         | 181         | 2.11         | 211         | 2.46          | 180         | 2.10         | 196       | 2.29        | 0,133        | -0,115       | 0,106        | -0,123       |
| IB_10701        | Tc_014985        | 276                  | 26.09        | 334         | 31.57        | 265         | 25.05         | 303         | 28.64        | 252       | 23.82       | 0,131        | 0,406        | 0,073        | 0,266        |
| IB_10748        | Tc_007828        | 1                    | 0.12         | 0           | 0.00         | 2036        | 243.30        | 0           | 0            | 0         | 0           | -            | -            | -            | -            |

**bold** identified both by the phenotypic iBeetle screen as well as transcriptomics