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Phineas T. Hamilton, Jong S. Leong, Ben F. Koop and Steve J. Perlman

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Transcriptional Responses in a *Drosophila* Defensive Symbiosis

Phineas T. Hamilton[1*], Jong S. Leong[1], Ben F. Koop[1] and Steve J. Perlman[1*]

[1] Department of Biology, University of Victoria, PO Box 1800, STN CSC, Victoria BC, Canada, V8W 2Y2

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***Corresponding Authors:**

Phineas Hamilton, phin.hamilton@gmail.com

Steve Perlman, stevep@uvic.ca

Department of Biology,

University of Victoria, PO Box 1800,

STN CSC, Victoria BC, Canada, V8W 2Y2

Fax: 1 250 721 7120

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Abstract:

Inherited symbionts are ubiquitous in insects and can have important consequences for the fitness of their hosts. Many inherited symbionts defend their hosts against parasites or other natural enemies; however, the means by which most symbionts confer protection is virtually unknown. We examine mechanisms of defense in a recently discovered case of symbiont-mediated protection, where the bacterial symbiont *Spiroplasma* defends the fruit fly *Drosophila neotestacea* from a virulent nematode parasite, *Howardula aoronymphium*. Using quantitative PCR of *Spiroplasma* infection intensities and whole transcriptome sequencing, we attempt to distinguish between the following modes of defense: symbiont-parasite competition, host immune priming, and the production of toxic factors by *Spiroplasma*. Our findings do not support a model of exploitative competition between *Howardula* and *Spiroplasma* to mediate defense, nor do we find strong support for host immune priming during *Spiroplasma* infection. Interestingly, we recovered sequence for putative toxins encoded by *Spiroplasma*, including a novel putative ribosome inactivating protein, transcripts of which are up-regulated in response to nematode exposure. Protection via the production of toxins may be a widely used and important mechanism in heritable defensive symbioses in insects.

Introduction:

It has become increasingly evident that many animals harbor microorganisms that protect against natural enemies (Gil-Turnes *et al.* 1989; Lopanik *et al.* 2004; Haine 2008; Hurst and Hutchence 2010; Oliver et al. 2013).

These defensive symbioses have long resisted study for a number of reasons, including that most host microbiomes are incredibly complex and most symbionts cannot be reared without their hosts. Demonstrating the role of defensive microbes in the wild is also challenging, as it requires intimate knowledge of the host's natural enemies.

Perhaps the best-studied animal defensive symbioses are found in insects, which are commonly infected with facultative bacterial symbionts that are transmitted primarily from mothers to their offspring, often in the egg cytoplasm (Werren and O'Neill 1997; Moran 2006; Moran et al. 2008; Jaenike 2012). While they are not strictly required for the insect host to survive, facultative maternally-transmitted symbionts can act as dynamic sources of heritable variation in host populations, and can increase their own frequency by providing benefits to their hosts, such as by protecting them against natural enemies (Oliver *et al.* 2003; Oliver *et al.* 2008; Haine 2008; Brownlie and Johnson 2009). Defensive heritable symbioses have now been demonstrated in diverse insects, including aphids, fruit flies, and beetles, protecting them against a wide range of organisms, including parasitic wasps and nematodes, pathogenic fungi and RNA viruses, and predatory spiders (Kellner and Dettner 1996; Oliver *et al.* 2003; Teixeira *et al.* 2008; Hedges et al. 2008; Jaenike *et al.* 2010; Łukasik et al. 2013). That defense against diverse parasites can result from infection by taxonomically disparate symbionts suggests that it is a common if not predominant aspect of insect symbioses.

The mechanisms by which symbionts actually defend their hosts remain virtually unknown. Interest in this subject has surged in recent years due to their potential use in controlling human diseases that are vectored by insects (e.g. Hughes *et al*. 2011; Walker *et al*. 2011). For example, *Aedes* and *Anopheles* mosquitoes have been artificially infected with strains of the inherited symbiont *Wolbachia* that block replication of dengue virus and malaria (Moreira *et al*. 2009; Hughes *et al.* 2011). In addition to determining whether a defensive symbiont will provide protection in novel hosts, the specific mechanism of defense can potentially affect the long-term persistence of the symbiont and the ability of the natural enemy to evolve counter-resistance.

Three contrasting mechanisms have been proposed to explain how a symbiont could be expected to block parasite growth and lead to defense of the host (Haine 2008); all have parallels within a more classical ecological framework, being analogous to exploitative, interference and apparent competition between species (Miller 1967; Holt 1977; Dobson 1985; Mideo 2009). First, exploitative competition between symbionts and parasites within a host for limiting factors could limit parasite growth, decreasing parasite-induced pathology and leading to defense. This would likely be mediated through competition for a shared and limiting resource, and provides an indirect mechanism though which a symbiont and parasite could interact. While exploitative competition can be a common feature of coinfecting parasites (Read and Taylor 2001) with important implications for the evolution of parasite virulence (Frank 1996), it has yet to be convincingly demonstrated as a mechanism for host protection in heritable symbionts - although recent work suggests that competition for cholesterol may play a role in *Wolbachia*'s defense against RNA viruses in *Drosophila* (Caragata *et al.* 2013).

Second, symbionts have been proposed to defend their hosts by priming the host immune system (Haine 2008; Kambris *et al*. 2009; Pan *et al*. 2012), increasing the ability of the host to respond effectively to attack by a parasite. This is analogous to apparent competition, in which an increase in one species leads to an increase in a predator that negatively affects a competitor (Holt 1997). In the case of apparent competition between interacting parasites, the host immune system is typically considered to take the place of the predator (Pedersen and Fenton 2007; Mideo 2009), and as such should be evident in symbiont up-regulation of host immunity. The best evidence for immune priming in defensive symbiosis has come from studies of mosquitoes artificially infected with *Wolbachia* that have shown that many host immune genes are constitutively up-regulated during symbiont infection (Kambris *et al*. 2009; Bian *et al*. 2010).

Last, symbionts may directly attack parasites or other enemies, analogous to interference competition. Interference competition arises when one species directly antagonizes another (e.g. Miller 1967; Dobson 1985), possibly through preemption of space or the production of toxic factors. Interference competition is common in bacteria, which produce a ubiquity of bacteriocin toxins, among others, that target closely-related competitors (reviewed by Riley and Wertz 2002), and is also probably the best-substantiated mode of defense by heritable symbionts. In *Paederus* beetles, a heritable *Pseudomonas* symbiont produces a toxin that can deter predation by spiders (Piel 2002). In aphids harboring the defensive symbiont *Hamiltonella defensa,* defense against parasitoid wasps is linked to toxins produced by a bacteriophage associated with *Hamiltonella* (Moran *et al*. 2005; Oliver *et al.* 2009).

In the current study, we performed experiments aiming to test which of the above-described mechanisms explains a defensive symbiosis in *Drosophila*. *Drosophila neotestacea* is a widespread North American woodland fly that is commonly infected by a virulent parasitic nematode, *Howardula aoronymphium* (Jaenike 1992). Parasitism by *Howardula* normally sterilizes flies. Remarkably, flies harboring the inherited defensive bacterial symbiont *Spiroplasma* are no longer sterile when infected with nematodes, and *Howardula* infection intensity is dramatically decreased (Jaenike *et al*. 2010). The selective benefit conferred by *Spiroplasma* has led to its rapid spread throughout *D. neotestacea* (Cockburn *et al.* 2013), but the means by which *Spiroplasma* defends its host remains completely unknown.

First, in order to test for exploitative competition, we measured the intensity of *Spiroplasma* infection in *Howardula*-infected and uninfected flies over time, using quantitative PCR, with the hypothesis that *Spiroplasma* and *Howardula* would exhibit compensatory dynamics if in exploitative competition for common resources (i.e. *Spiroplasma* infection intensity would decrease in the presence of *Howardula*). Second, to test for apparent competition in the form of immune-priming, we performed an RNA-sequencing experiment to look for evidence that *Spiroplasma* up-regulates host immunity in a manner that could explain defense. Last, we screened *Spiroplasma* transcripts assembled during RNA-sequencing for evidence of *Spiroplasma*-encoded genes that could account for defense, such as toxins that could underlie interference competition between *Spiroplasma* and *Howardula*. Our results show little support for exploitative competition or immune priming; rather, we uncovered putative *Spiroplasma* toxins that may be involved in defense.

Materials and Methods:

Drosophila and *Howardula* Stocks

Spiroplasma infected [S+] and uninfected [S-] lines of *D. neotestacea* originally collected in 2006 in Hartford, Connecticut were maintained as described elsewhere (Cockburn *et al*. 2013). These lines initially also harbored *Wolbachia*, which we selectively eliminated by treatment with rifampicin (Jaenike *et al*. 2010). We introgressed S+ and S- fly lines for six generations prior the start of the experiment (Cockburn *et al.* 2013). *Howardula aoronymphium* used in this experiment were also originally collected in Hartford in 2006, and were maintained in the lab in *Drosophila falleni*.

Spiroplasma-*Howardula* Competition: Experimental Design

To test for effects of *Howardula* on *Spiroplasma* infection intensity we exposed the S+ fly line to infective *Howardula* nematodes: we collected eggs by allowing flies to oviposit on mushroom-agar (100g blended *Agaricus bisporus*, 100 mL dH_20, 5 g sucrose, 2.5 g agar and 0.1 g methyl paraben as a mold inhibitor) plugs in petri dishes overnight. Small mushroom (*A. bisporus*) pieces were infected with ~400 infective juvenile nematodes produced by grinding *Howardula*-infected *D.*

falleni in Ringer's solution. We added the same volume of ground *D. falleni* in Ringer's from a *Howardula* uninfected line to additional mushroom pieces for *Howardula*-unexposed (control) treatments, and 20 were transferred eggs to infested (*Howardula* exposed treatment) or uninfested (*Howardula* control) pieces. We transferred these mushrooms to plastic vials containing moistened cheesecloth and a cotton dental plug maintained at 22°C, and monitored fly development.

Individual flies were collected at 5 day intervals (larvae at 5 days, pupae at 10 days, adults at 15, 20, and 25 days), and stored at -20°C. DNA was extracted from individual flies using 75 μL PrepMan Ultra (Applied BioSystems, Foster City, CA). Relative *Spiroplasma* infection intensity was measured using quantitative PCR, standardizing *dnaA* copy number primer with the host gene *triose phosphate isomerase* that we developed for *D. neotestacea* using Primer3 (Koressaar & Remm 2007, Anbutsu & Fukatsu 2003; Table S1). For quantification, we used 20 μL reactions with iTaq Universal SYBR Green Supermix (BioRad) according to the manufacturer's instructions, on a BioRad CFX-96 thermal cycler, with duplicate technical replicates and 1/100 dilutions of template DNA. Primer efficiencies were validated using 5 × 10-fold serial dilutions of S+ *D. neotestacea* DNA (efficiencies and cycling conditions in Table S1). Relative infection intensities were calculated using the efficiency-controlled method of Pfaffl (2001). Flies exposed to nematodes were diagnosed as *Howardula*-infected or uninfected based on triplicate PCR screens using the *aor* primer set (Jaenike and Brekke 2011; see Table S2 for reaction conditions).

We tested for *Howardula* effects on *Spiroplasma* infection using an analysis of covariance (ANCOVA) with crossed treatment (*Howardula*-exposed uninfected; *Howardula*-exposed infected; *Howardula* unexposed) and sampling day as predictor variables and relative *Spiroplasma* infection intensity as the response variable, omitting flies collected made at the first time point when no *Howardula* were detected from this analysis. Throughout experiments, $\log_{10}$ or $\log_2$ transformations of response variables were used to stabilize variance or improve normality for statistical analyses as appropriate.

Transcriptome Sequencing: Experimental Design

We used a 2×2 factorial experimental design, with *Spiroplasma* infection and *Howardula* exposure as crossed factors to assess the transcriptional response of the *D. neotestacea* host to *Spiroplasma* and *Howardula*, resulting in 4 libraries for sequencing. Experimental *Howardula* (HA) infections were generated as detailed above, but included S- lines, to allow for assessment of a total of 4 experimental treatments (HA- S-; HA+ S-; HA- S+; HA+ S+), with 10 vials (containing 20 eggs per vial) set up for each treatment.

One day after eggs had been placed on mushrooms, we collected five *D. neotestacea* eggs from each treatment, and made additional fly collections every five days as flies developed, until six collections had been made (26 days from egg oviposition), giving an aggregate sample of 30 egg, larval, pupal and adult *D. neotestacea* from each treatment. When adult flies emerged, they were immediately (< 24hrs) transferred to solitary individual vials to ensure they remained unmated for the course of the experiment. At each collection time point, we initiated collections at 9 AM and randomized the order of treatments collected to minimize confounding effects of collection time on host gene expression, and also collected flies at random from vials of each treatment. Flies were snap-frozen in liquid nitrogen and stored at -80 C until RNA extraction.

We extracted total RNA from aggregate fly samples for each treatment using a Qiagen RNEasy Kit (Qiagen, USA) after homogenizing flies in Qiagen Buffer RLT in a Mini Beadbeater 8 for 30 sec with 1mm silica-zirconium beads (BioSpec Products). Total RNA was provided to the Michael Smith Genome Sciences Centre for subsequent polyA enrichment for mRNA transcripts, library construction and sequencing of 75 bp paired-end transcripts using an Illumina HiSeq 2000 according to established protocols (www.bcgsc.ca). Because this mRNA enrichment selects for eukaryotic transcripts, the majority of *Spiroplasma* transcripts were not recovered. One library was constructed and lane sequenced per experimental condition.

Bioinformatics Analysis

We pooled raw reads from each experimental condition and assembled a *de novo* reference transcriptome using Trinity (Grabherr *et al.* 2011), with a minimum K-mer count of 3. Trinity has the ability to distinguish putative spliced isoforms of each assembled gene. We found substantial similarity between numerous assembled isoforms and even genes in our transcriptome assembly. Thus, to improve the quality of our *de novo* assembly, we simplified the assembly through an elimination of redundancy by taking a single representative of transcripts that were ≥ 98%

similar over a minimum length of 300 bp, as determined by BLASTN (Altschul *et al.* 1997). This simplified transcript set was further screened by only retaining putative transcripts that were characterized as full-length (Leong *et al*. 2010), those that had a significant match to the SwissProt or Gene Ontology protein databases ($\leq 10^{-5}$), and those that did not show any sequence homology to a known protein but had a predicted open reading frame ≥ 300 bp.

Expression levels for each contig in this reduced assembly were determined by independently mapping raw reads in each experimental condition back to the reduced assembly using the 'RNA-Seq Analysis' tool in the CLC Genomics Workbench software package.

Because the assembled transcriptome was expected to contain transcripts from both the host (*Drosophila*) and parasite (*Howardula*), as well as other potential infectious organisms, including *Spiroplasma*, we used a BLASTX search against the nr (non-redundant) database using standalone BLAST+ 2.2.26 to assign putative taxonomy to each contig. Contigs with BLAST E-values of $< 10^{-4}$ and the top hit as *Drosophila* were characterized as host transcripts, whereas contigs with the top hit as a nematode genus were characterized as *Howardula*. We expected to find *Drosophila* transcripts in all treatments, whereas *Howardula* transcripts should only be present in *Howardula*-exposed treatments. Indeed, this was the case, with the vast majority of putative *Drosophila* transcripts (99.7%) found in all four treatments, and 97.7% of *Howardula* transcripts present in only two. To ensure that all possible *Spiroplasma* transcripts were recovered, we also subjected the initial (unreduced) Trinity assembly to this BLASTX search. Once putative taxonomy was assigned to contigs, additional searches were performed against the FlyBase database for all *Drosophila melanogaster* predicted proteins in order to assign (E-value < 10^{-4}) gene annotations to contigs predicted to be from *Drosophila*. We searched against the SwissProt database to assign annotations to transcripts from other organisms.

The *DESeq* package (Anders & Huber 2010) in R/BioConductor v. 2.14 (the R Core Development Team) was used to test for differential expression (DE) of transcripts in response to treatments. *P*-values were calculated for each *Drosophila* transcript for main effects of *Howardula* exposure and *Spiroplasma* infection, and the statistical interaction between the two. We assessed the significance of effects using an adjusted *P*-value of 0.10 (Benjamini-Hochberg correction). This slightly less stringent corrected *P*-value was used due to the relatively low power of the limited technical replication of our experiment and our concern with type II error (i.e. failing to find *Spiroplasma* effects on immune gene expression when present). While this experiment also allowed us to assess the effect of *Spiroplasma* on *Howardula* gene expression, we found that the substantially lower (nearly ten-fold) *Howardula* read counts in S+ treatments precluded meaningful analysis without further replication.

Finally, we used the *GOSeq* package (Young *et al.* 2010) in BioConductor to test for Gene Ontology enrichment in host transcripts with common responses to infection. DE transcripts were divided into five categories: those having a significant positive (up-regulated) or negative (down-regulated) response to *Howardula* or *Spiroplasma*, or having a significant interaction between infection types (i.e. nonadditive effects of *Howardula* and *Spiroplasma* infection) and tested for GO term enrichment in each of these categories based on GO associations for *Drosophila melanogaster* genes in FlyBase.

Quantitative PCR of Gene Expression Levels

To verify our transcriptomic analysis in an independent experiment, we selected a subset of transcripts responding significantly to treatments and designed RT-qPCR primers to evaluate their expression levels (Table S1). To do this, we repeated experimental infections to generate additional replicate samples appropriate for qPCR-based gene expression analysis. We performed experiments and reared flies as described above, but collected single adult flies from each treatment only once adult flies were 7-days old (~20 days post oviposition). We also diagnosed nematode exposed flies as infected or uninfected, giving a total of six treatments: nematode infected, nematode uninfected and nematode unexposed (control), each with and without *Spiroplasma*. Altogether, 30 flies were included (5 from each treatments; one S+ line individual was diagnosed as S- using PCR and was analyzed as such) in this analysis.

RNA and DNA from individual flies was extracted using Trizol-LS (Invitrogen), eluting RNA into 10 µL of RNase-free water. We confirmed successful DNA extraction by amplifying a portion of the *D. neotestacea tpi* gene (Table S2) and diagnosed *Howardula* infection status using PCR (Table S2). Flies were considered to be negative for *Howardula* if we successfully amplified host DNA but failed to amplify *Howardula* in triplicate PCR reactions. Because we uncovered a cryptic trypanosomatid infection in our experiment during analysis (see results below) we additionally screened these flies for trypanosomatid infection using primers targeting the trypanosomatid spliced leader rRNA sequence (Westenberger *et al*. 2004; Table S2); despite successful amplification from other lab and wild collected flies, we were unable to amplify trypanosomatid DNA in these flies, strongly suggesting they were uninfected by these parasites at the time of collection. Individual flies from S+ treatments were confirmed to be *Spiroplasma*-infected using *Spiroplasma*-specific primers prior to data analysis (Table S2). All PCR reactions contained positive and negative (no-template) controls.

RNA fractions from each fly were treated with DNAse I (Ambion) to digest contaminating DNA, and RNA quality was verified by electrophoresis on a 1% agarose gel. Remaining RNA (5 µL) was used as template for random-primed cDNA synthesis using the Invitrogen Superscript III cDNA Synthesis Kit (Invitrogen).

We measured relative mRNA transcript abundance for genes of interest normalizing expression against the reference gene *rpl28* from *Drosophila* and using 1/20 dilutions of cDNA, but in otherwise the same manner as detailed for the qPCR of *Spiroplasma* infection above. Primers were developed for genes of interest using Primer3, and primer efficiency was verified using a 5 × 5-fold dilution series for more highly expressed transcripts, or a 5 × 2-fold dilution series for less abundant transcripts. Primer specificity was verified by melt-curve analysis and gel electrophoresis of products; efficiencies and cycling conditions for each primer set are presented in Table S1.

Data were analyzed using a 2 × 3 ANOVA in R, with *Spiroplasma* and *Howardula* status (unexposed, exposed uninfected, infected) crossed, and the $\log_2$ of the relative expression value of the gene of interest as the response. For one gene of interest (*lysozyme X*), some (4/30) flies had no detectable transcript abundance; relative expression values for these flies were included in statistical analyses at the expression level of the lowest reliably detected sample.

We also designed primers to amplify the putative RIP toxin of *Spiroplasma* (Table S2), normalizing expression level against *Spiroplasma dnaA* transcript abundance. Initial qPCR analysis of expression level in week-old flies was suggestive of an effect of *Howardula*, but not conclusive; to further examine expression patterns we generated an additional 32 S+, *Howardula*-exposed and control flies for analysis as outlined above, and examined *Spiroplasma* RIP expression in them when they were day-old adults (~13 days post oviposition; 31/32 flies were confirmed as *Spiroplasma* positive with PCR and were used in analysis); we also quantified *Spiroplasma* infection intensity in the DNA fraction from these flies (absolute quantification of DNA standardized to 40 ng/μL) to examine infection intensity effects on RIP expression. We analyzed *Howardula* and *Spiroplasma*-density effects on RIP expression using ANCOVA.

Results:

Spiroplasma Density:

We did not detect any evidence of an effect of *Howardula* exposure or infection on the intensity of *Spiroplasma* infection in *D. neotestacea* (Figure 1: ANCOVA of $\log_2$ transformed infection intensity: infection main effect, $F_{2,47} = 1.06$, $P = 0.355$; infection × time interaction, $F_{2,47} = 1.64$, $P = 0.21$). Based on this, *Spiroplasma* growth appears independent of the presence of *Howardula;* this is counter to the expectation of decreased *Spiroplasma* growth in the presence of *Howardula* if they are in exploitative competition.

RNA Sequencing Gene IDs and Numbers:

Patterns of transcript expression across treatments indicated that taxon classification was accurate, in that the vast majority of putative *Drosophila* transcripts (99.7%) occurred in all four treatments, while those of *Howardula* were limited to HA+ treatments (97.7%). Illumina sequencing provided an average of over 3×10^8 raw 75 bp paired-end reads per treatment that successfully mapped back to the assembled transcriptome. Initial Trinity assembly produced a transcriptome of 129,379 putative isoforms of 65,144 genes, for an average of 1.99 isoforms per gene. Subsequent reduction of this assembly yielded a total of 30,575 transcripts with predicted ORFs longer than 300 bp, 28,520 (93%) of which we were able to provide with a putative taxonomy from BLASTX against the non-redundant database (Figure 2). Of these, 13,650 (50%) were tentatively identified as *Drosophila,* and 12,651 (93%) had annotations in FlyBase (E-value $< 10^{-4}$). We also recovered 6,648 putative nematode transcripts (Figure 2).

We also recovered 568 transcripts that appeared to originate from a cryptic trypanosomatid infection in our samples (Figure 2). Most trypanosomatid reads occurred only in *Howardula*-exposed treatments (505/568 = 89%, most likely reflecting a low number of read-mapping errors). Dissection and microscopic examination subsequently confirmed that *Howardula* infected lab fly lines also harbored trypanosomatids; thus many of the *D. neotestacea* exposed to *Howardula* to generate the transcriptome were likely coinfected with trypanosomatids

Screening the unreduced Trinity assembly for putative *Spiroplasma* genes based on expression pattern and annotation as *Spiroplasma* or related *Mycoplasma* yielded 49 probable *Spiroplasma* transcripts. Few of these (21) had high quality SwissProt annotations, and their low number and relative sequencing depth precluded rigorous tests of differential expression. However, we did find some transcripts of interest encoded by *Spiroplasma*, including two putative toxins: a homolog of *Clostridium* epsilon toxin and a putative ribosome inactivating protein (RIP). Sequence overlap of these two contigs suggests that they are immediately adjacent in the *Spiroplasma* genome and may be co-transcribed. Based on Illumina read counts the putative RIP was ~3 fold up-regulated in *Howardula*-exposed flies and is likely among the more highly-expressed *Spiroplasma* genes, given the low overall number of *Spiroplasma* transcripts recovered. This RIP is also clearly associated with *Spiroplasma*; portions of the contig encoding this gene have high sequence homology to other *Spiroplasma* (BLASTN to *Spiroplasma citri*; E-value $2x10^{-47}$).

Transcriptional Responses of Drosophila

Tests for differential expression in *DESeq* found evidence ($P_{adj} < 0.1$) of *Spiroplasma* or *Howardula* effects on the expression of 693 transcripts. Most of these (324) were up-regulated in response to *Howardula* exposure, whereas fewer (144) were down-regulated. Only 139 genes responded significantly to *Spiroplasma* infection, with 57 up-regulated and 82 down-regulated. An additional 150 genes showed a statistical interaction between *Howardula* and *Spiroplasma.*

Gene Ontology enrichment analysis of transcripts with common expression patterns using *GOSeq* recovered multiple statistically significant functional categories (Table 1). A complete list of differentially expressed genes is available in supplemental Table S3. Additionally, to visualize patterns of host immune-gene expression, we selected all transcripts having GO terms for immune response (GO:0006955), innate immunity (GO:0045087), defense (GO:0006952), or response to stress (GO:0006950) and heat-mapped their expression across treatments (Figure 3; n=167 transcripts). Figure 3 clearly demonstrates that these transcripts are responding predominately to *Howardula* exposure rather than *Spiroplasma* infection, although the majority of their responses were not statistically significant.

More specifically, among transcripts significantly down-regulated in *Howardula*-exposed treatments, there was substantial enrichment of GO terms relating to egg development, mitosis and protein translation (Table 1). This is consistent with an infection that sterilizes the host, and serves as a useful phenotypic anchor that corroborates our ability to detect biologically significant effects of infection with this experimental design.

Numerous transcripts with potential immune activity were up-regulated in response to *Howardula* exposure. These predominately included lectins with carbohydrate binding activity, numerous fibrinogen-like domain containing proteins potentially involved in defense, and proteases (Table S3). Interestingly, GO enrichment analysis did not find significant enrichment of immune-related genes in *Howardula*-exposed treatments, although many such genes were elevated at a non-significant level (Figure 3). There were many genes involved in clotting substantially up-regulated in response to nematode exposure, including *fondue*. Also, genes (23) involved in chitin metabolism were up-regulated in response to *Howardula*, possibly in a defensive capacity, although this is not well established in insects (Nair *et al.* 2005; Castillo *et al.* 2011). It is also possible that many of these genes may be responding to trypanosomatid infection. In contrast to a recent study of *Drosophila melanogaster* infection by axenic nematodes (Castillo *et al*. 2013), we did not find convincing evidence of up-regulation of anti-microbial peptides (AMPs) in response to *Howardula* exposure, although numerous differences in methods preclude direct comparison with this study. We did find moderate up-regulation of one isoform of *defensin*, although another isoform in the dataset did not respond in this way (Table S3).

We found no clear evidence of host immune priming by *Spiroplasma*: GO enrichment analysis failed to find any statistically significant GO categories enriched among transcripts up-regulated during *Spiroplasma* infection, although a few potential immune genes were affected. These were predominately proteases, although *pro-phenol oxidase A1* that may be involved in a defensive melanization response was also moderately up-regulated (Table S3, Lemaitre and Hoffmann 2007). There were no AMPs strongly up-regulated in response to *Spiroplasma*.

Host immune modulation by *Spiroplasma* could also be evident in the potentiation of host defense genes during infection, which would be apparent in a *Spiroplasma* × *Howardula* statistical interaction on expression level. Of the 150 transcripts showing such an interaction, only 14 had a peak of expression in S+HA+ treatments. Among these were two proteases, a fibrinogen-like domain containing protein, a *nimrod* protein – involved in phagocytosis - and a putative allergen that could potentially be involved in host defense (Table S3). While it is not possible to rule out that one or more of these few genes underlies *Spiroplasma*'s defensive properties, comparison with studies that more strongly support immune-priming makes this unlikely (Pan *et al*. 2012; Rancès *et al* 2012), as the up-regulation seen here is idiosyncratic and of low magnitude.

RT-qPCR Validation

Our independent validation of differential expression from the assembled transcriptome was generally in agreement with transcriptomic results. This analysis was more complex in that we diagnosed individual *Howardula*-exposed flies as infected or uninfected: we took this approach to allow an additional level of resolution in interpreting our transcriptomic results. Also, the generation of new biological samples, the use of alternative methods to isolate RNA and construct cDNA libraries, and sampling flies collected at a single time point were different from the transcriptomic analysis, but we are encouraged that we successfully recovered the main trends in the data under such different conditions. Furthermore, we were unable to amplify trypanosomatid DNA in these samples, suggesting they were likely free of this confounding infection. With the five individuals we analyzed from each of the six experimental conditions, we found that four target genes gave results consistent with those of RNA-sequencing, in terms of direction of fold change and a significant response to *Howardula* exposure. The two AMPs we measured gave more variable results, which we discuss below.

The immune-related genes (*lysozyme x*, a *c-type lectin*, and *cysteine-proteinase 1*) that we measured were all consistent with the transcriptome in their significant up-regulation during *Howardula* exposure. Interestingly, they also shared a response in that they responded strongly and positively to nematode exposure but were relatively suppressed during nematode infection (Figure S3). This apparent immune activation and suppression is intriguing, and could reflect successful defense against nematode infection.

More subtle patterns of expression in response to *Spiroplasma* were also recovered in some cases, although not always statistically significantly; an additional validation gene, *spermidine synthase*, showing down-regulation in S+ lines in the transcriptome was also down-regulated in response to *Spiroplasma* in week-old flies using RT-qPCR (Figure S3; $P = 0.08$). In contrast, while *lysx* was down-regulated in response to *Spiroplasma* in the transcriptome, we did not detect an effect during qPCR (Figure S1).

Two AMPs that responded in the transcriptome – *attacin-C* and *diptericin-B* – followed a different pattern of expression during RT-qPCR. However, these genes were characterized by idiosyncratic and extreme up-regulation in a few flies (2 out of 30). We suspect that a few such flies possibly responding to a cryptic bacterial infection rather than experimental treatments drove the low-level differential expression of these genes seen in our RNA-sequencing data. We did find that the expression of the two genes was highly correlated across treatment conditions in both the RNA-sequencing and qPCR results (r = 0.92 and log-log r = 0.71, respectively), suggesting the observed discrepancy represents biological variation rather than technical error.

Spiroplasma *Putative RIP response*

RT-qPCR of the putative *Spiroplasma* RIP in one-day old flies corroborated its strong response to treatments (Figure 4: ANCOVA; $F_{2,27} = 7.2$, $P = 0.003$), and also revealed that its relative expression increased with higher *Spiroplasma* infection intensity ($F_{1,27} = 37.0$, $P < 0.001$ respectively). Interestingly, up-regulation occurred only in *Howardula*-exposed but uninfected flies, and a strong statistical interaction between *Howardula*-status and *Spiroplasma* intensity was driven by increased per-capita RIP expression in *Howardula*-exposed but uninfected flies (Figure 4: $F_{2,27} = 4.2$, $P = 0.03$). *Spiroplasma* infection intensity itself, however, did not respond significantly to treatments (ANOVA; $P = 0.95$), corroborating our experiments on exploitative competition (i.e. no effect of *Howardula* on *Spiroplasma* density).

Discussion:

There has been a recent surge in research on defensive symbionts (e.g. Oliver *et al*. 2003; Koch and Schmid-Hempel 2011), but little is known about the mechanisms by which they provide protection. Transcriptome sequencing is a promising approach that begins to solve this problem. In this study we tested the predominant hypotheses for how symbiont-mediated protection occurs using a recently discovered *Drosophila* defensive symbiosis. We applied a framework of competition between species developed for free-living competitors but also applied to coinfecting parasites (Dobson 1985; Mideo 2009; Johnson and Buller 2011), and while we found no evidence of either apparent or exploitative competition in our transcriptomic or *Spiroplasma* density experiments, we did find multiple putative toxins and a pattern of *Spiroplasma* infection suggestive of interference competition. As such, applying this conceptual framework to symbiont-parasite interactions provides an opportunity to link mechanistic bases of defense to a larger body of ecological and evolutionary theory (e.g. Miller 1967; Holt 1977; Dobson 1985).

The bulk of this work examined the transcriptional response of the *Drosophila* host to *Spiroplasma* and *Howardula*. While there was not strong evidence of immune priming, we also found *Spiroplasma* to have little effect on host gene expression at all, with relatively few genes responding significantly to infection. This is consistent with a recent microarray study of *Spiroplasma* infection in *Drosophila melanogaster* showing relatively little host response to infection (Hutchence *et al*. 2011), as well as studies that examined the expression of specific immunity genes (Anbutsu and Fukatsu 2010; Herren and Lemaitre 2011). It may be surprising that there is little effect on host gene expression despite the fact that unlike *Wolbachia, Spiroplasma* typically occurs extracellularly and at high densities in the hemolymph, where numerous immune effectors are active (Lemaitre and Hoffman 2007). However, *Spiroplasma* has no cell wall and it has been proposed that it evades, and perhaps even suppresses host immunity (Hurst *et al*. 2003; Anbutsu & Fukatsu 2010).

Our results contrast with recent studies that have shown constitutive up-regulation of host immune genes when *Wolbachia* infections are established in novel mosquito hosts (e.g. Kambris *et al.* 2009, 2010; Pan *et al.* 2012) that may account for reduced vector competence. Similar to our results, though, immune-priming by *Wolbachia* appears reduced or absent in native infections (Bourtzis *et al.* 2000; Rancès *et al.* 2012; Wong *et al.* 2012). Some symbionts may also interact with host-immunity by triggering the production of reactive oxygen species that are toxic to parasites and pathogens (Cirimotich *et al.* 2011; Pan *et al.* 2012). To examine this, we looked at the expression of the genes dual oxidase (*duox*) and NADPH oxidase (*nox*) in our transcriptome and found no significant up-regulation under any experimental conditions. Furthermore, we found no significant enrichment of function for oxidoreductase activity among *Spiroplasma* up-regulated genes during our Gene Ontology analysis (GO:0016491 enrichment: $P_{adj} = 1$), making it unlikely that these pathways contribute to defense in this system.

There was little effect of *Spiroplasma* on host gene expression, but we did detect a clear response to *Howardula* exposure, in terms of systematic down-regulation of transcripts related to egg production and reproduction, as would be expected from a parasite that sterilizes its host. Surprisingly little is known about the insect immune response to parasitic nematodes (Hallem et al. 2007; Castillo *et al.* 2011), and our dataset provides some interesting clues in this regard. For example, we found up-regulation of potential clotting factors, including *fondue,* which has recently been implicated in *D. melanogaster*'s defense against entomopathogenic nematodes (Hyrsl *et al.* 2011), as well as many genes containing fibrinogen-like domains and numerous lectins with carbohydrate binding activity that are potentially important in insect defense. Intriguingly, quantitative-PCR consistently suggested that some probable defense genes were up-regulated in flies that were exposed to nematodes but did not become infected (i.e. flies that had successfully defended against nematode attack). However, the presence of the trypanosomatid infection in the transcriptome makes it unclear what is necessarily driving this response. The presence of these interacting parasites and symbionts makes this a promising system to evaluate the dynamic interplay between infectious agents in *Drosophila*, but it unfortunately precludes a clear analysis of *Howardula*'s effects on host immunity at this time.

In general, little is known about the effect and distribution of trypanosomatids in *Drosophila* though they appear to be diverse and ubiquitous parasites of *Drososphila* (Ebbert *et al*. 2001; Wilfert *et al.* 2011; Maslov *et al.* 2013). Trypanosomatids and *Howardula* occupy different tissues in *D. neotestacea*, with the former predominately infecting the host midgut (personal observation), while *Howardula* infect larval flies by piercing the cuticle and reside in the hemolymph of adults. These parasites likely cause divergent responses in the host, but *Drosophila* immune responses to both are poorly defined (Boulanger *et al.* 2001; Castillo *et al.*

2011). Importantly, trypanosomatid coinfection has no effect on the defensive properties of *Spiroplasma* (unpublished data). Thus, although trypanosomatid infection complicates our ability to examine host immune response to *Howardula* in this study, the defensive effects of *Spiroplasma* are robust to it, and should still be observable.

Our primary intent in our RNA sequencing experiment was to sequence host mRNA, but our *de novo* transcriptome assembly also produced transcripts for putative *Spiroplasma* genes. Our very high depth of sequencing that allowed us to capture low abundance transcripts helps to explain our sequencing of bacterial genes even after mRNA enrichment. Among these *Spiroplasma* sequences are two putative toxins, including an apparently *Spiroplasma* encoded ribosome inactivating protein (RIP), with no sequenced homolog yet found in other *Spiroplasma*. This putative RIP shows up-regulation in response to nematode exposure in both transcriptomic and qPCR analyses, and is also increased at higher *Spiroplasma* densities in day-old flies. Interestingly, similar to some assayed immune genes, up-regulation occurs in nematode exposed but uninfected flies (Figure 4). As yet, we are uncertain of the reason for this; though we have not found evidence that *Spiroplasma* prevents nematode infection (unpublished data), it is probable that the flies diagnosed as uninfected here were attacked by nematodes during exposure (i.e. juvenile nematodes pierced the cuticle to invade the fly) but managed to shed the infection, potentially helping to explain the pattern of up-regulation. It is also interesting that expression of this putative toxin was detected in all experimental conditions, even control flies.

RIPs are important virulence factors in bacteria; for example, phage-mobilized RIP shiga or shiga-like toxins are responsible for the virulence of human toxigenic *E. coli* strains (reviewed by Johannes and Römer 2010). RIPs are also capable of being highly specific against certain tissue types and/or organisms due to differential rates of endocytosis into the cell where they exhibit their toxic activity through the N-glycosidic cleavage of ribosomes (Johannes and Romer 2010), providing a plausible mechanism for toxin specificity in defensive symbiosis. Intriguingly, phage-encoded RIPs have been implicated in one of the best-studied insect defensive symbioses, the gamma-proteobacterium *Hamiltonella defensa* that protects its aphid host against parasitoid wasps (Degnan & Moran 2008; Oliver *et al.* 2009). We cannot rule out that the putative RIP in *Spiroplasma* is mobilized by a phage, although we found no evidence for such a phage in the transcriptome. However, while the *Spiroplasma* RIP has high homology to the A subunit of type I and II RIPs, the phage-encoded *Hamiltonella* RIP bears low homology to the B_5 subunit of type II RIPs (van der Wilk *et al.* 1999), suggesting that these putative toxins may not be directly comparable.

We propose that toxins encoded by *Spiroplasma* could underlie host defense through interference competition in this system, although further work characterizing the function of putative *Spiroplasma* toxins will be necessary to demonstrate this conclusively. Nonetheless, *Spiroplasma* and *Howardula* co-inhabit the fly hemocoel in close proximity, providing ample opportunity for *Spiroplasma*-derived factors to interact with *Howardula*. Further, interference competition can be expected to result in an asymmetrical effect of one parasite on the other (e.g. Dobson 1985), concordant with *Spiroplasma*'s effects on *Howardula.*

Together, these results provide the strongest support for a model of interference competition involving *Spiroplasma*-encoded toxins mediating defense. But is there reason to believe that interference may be more generally true of inherited defensive symbioses in insects? While there is evidence for all forms of competition (e.g. Caragata *et al*. 2013; Pan *et al*. 2012), we suggest that interference competition will predominate in heritable defensive symbioses, largely due to the vertical transmission of symbionts. Theory has long recognized that facultative heritable symbionts must walk an evolutionary tightrope: they are transmitted through the successful reproduction of their hosts, but are also expected to impose metabolic costs that lead to decreased relative fitness of infected hosts (e.g. Werren and O'Neill 1997; Moran 2006; Jaenike 2012). While on the one hand this trade-off can help to explain the evolution of conditional mutualisms such as defense, it also implies strong selection against heritable symbionts that have high metabolic costs in their hosts. Such costs may be exacerbated by strong exploitative competition between parasites and symbionts, or constitutive up-regulation of immunity. This may also explain why immune priming can be pronounced in artificial lab-established symbiont infections relative to naturally occurring ones (e.g. Rancès *et al.* 2012; Wong *et al*. 2012; Pan *et al*. 2012). For example, *Wolbachia* infections established in *Anopheles* mosquitoes produce an enormous amount of reactive oxygen species that appear to block malaria transmission; an added consequence is an extreme reduction in host fecundity (Bian *et al.* 2013). This balance may be particularly important for symbionts that do not manipulate host reproduction and appear to rely on the selective advantage of defense for their maintenance and spread such as *Hamiltonella* in pea aphids and *Spiroplasma* in *D. neotestacea* (Oliver *et al.* 2008; Cockburn *et al.* 2013) Producing parasite-specific toxins is a very effective evolutionary strategy for heritable symbionts, as it may allow targeted effects on natural enemies in the absence of collateral damage to the host that would result in decreased host fitness and thus symbiont transmission. Given the known specificity of toxicity by RIPs, they make attractive candidates for defensive factors in this respect. Indeed, toxins are increasingly observed in the genetic repertoire of insect symbionts (Piel 2002; Degnan & Moran 2008; Nakabachi *et al.* 2013) and may be important to diverse symbioses.

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Figures and Tables:

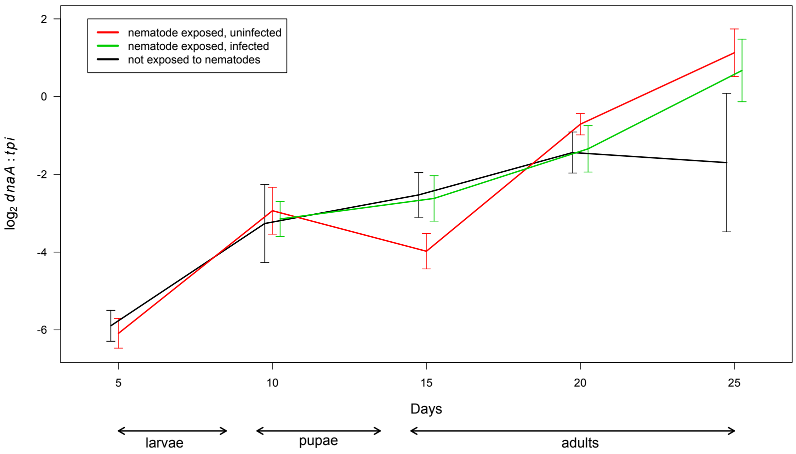

Figure 1. *Spiroplasma* infection intensity (mean ± SE of $\log_2$ of *Spiroplasma dnaA* normalized against host *tpi*) over the development of *Drosophila neotestacea*. Error bars are staggered for clarity. There were no discernible effects of *Howardula* exposure or infection status on *Spiroplasma* infection (n = 69).

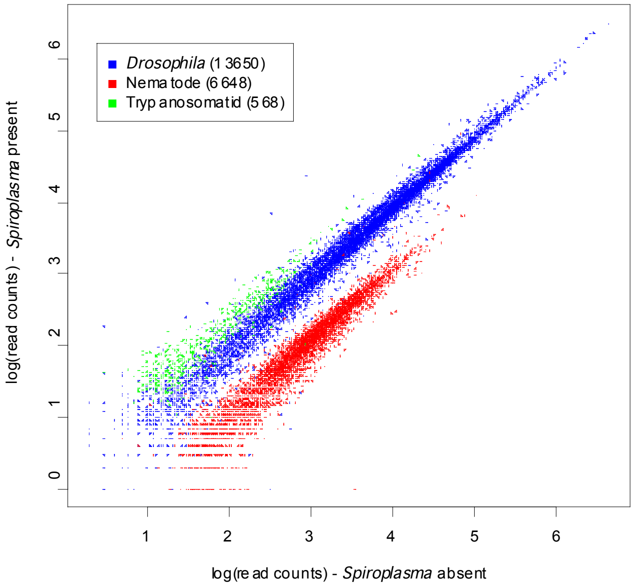

Figure 2. Raw expression levels of assembled transcripts in the reduced transcriptome, with taxonomy assigned by BLASTX against the non-redundant database. Treatments containing both host and parasites are shown (S-HA+ and

S+HA+), with total numbers of contigs for the host and parasites presented in legend. Nematode transcript abundance is ~10 fold lower in the S+ line.

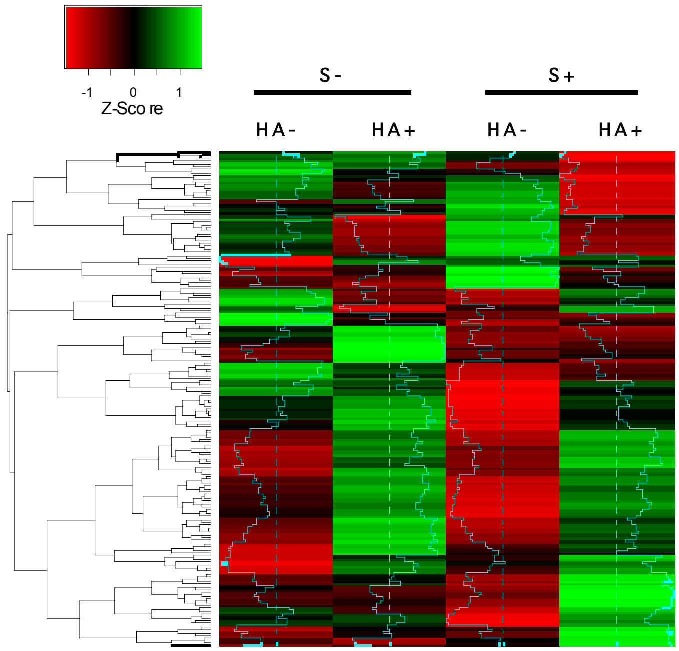

Figure 3. Heatmap of expression levels of transcripts with immune, stress or defense function, based on Gene Ontology. Transcripts are clustered on the y-axis based on similarity in expression levels across treatments (Euclidean distance of scaled responses), with the blue trace reflecting the relative magnitude of expression across transcripts (as Z-scores). Expression patterns demonstrate a large immune gene response to *Howardula* (HA) exposure but little response to *Spiroplasma* (S-); note that most of these transcripts are not statistically significant in their responses to treatments.

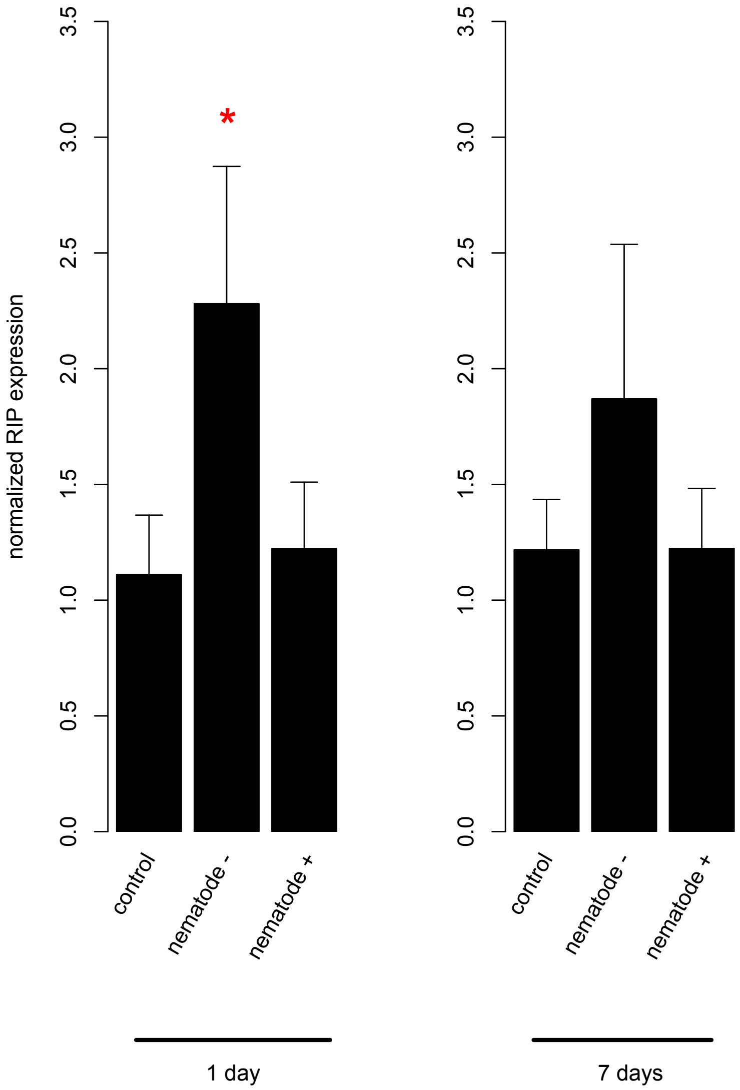

Figure 4. Expression of the putative *Spiroplasma* ribosome inactivating protein in one-day (n=31) and seven-day (n=14) old flies. Experimental treatments are unexposed (control), nematode-exposed and uninfected (nematode -), and nematode exposed and infected (nematode +). Expression is significantly higher in day-old nematode - flies. Flies in the seven-day experiment were also screened for trypanosomatid infection; all flies tested negative.

Table 1. Selected Gene Ontology categories significantly enriched in transcripts responding to *Howardula* and *Spiroplasma* infection. *** $P_{adj} < 0.01$, ** $P_{adj} < 0.05$, * $P_{adj} < 0.1$.

GO Term	**No. of transcripts**	**Sig.**

Up-regulated in response to *Howardula*			
carbohydrate binding (GO:0030246)	MF	14	***
extracellular region (GO:0005576)	CC	39	***
nutrient reservoir activity (GO:0045735)	MF	4	***
diazepam binding (GO:0050809)	MF	4	**
extracellular matrix (GO:0031012)	CC	9	***
phosphatidylcholine 1-acylhydrolase activity (GO:0008970)	MF	5	***
sphingomyelin catabolic process (GO:0006685)	MF	3	***
structural constituent of chitin-based cuticle (GO:0005214)	MF	23	***
enzyme inhibitor activity (GO:0004857)	MF	4	**
Down-regulated in response to *Howardula*			
chorion (GO:0042600)	CC	13	***
chorion containing eggshell formation (GO:0007304)	MF	10	***
mitotic sister chromatid segregration (GO:0000070)	BP	5	**
positive regulation of translation (GO:0045727)		4	*
tube development (GO:0000982)	MF	2	*
egg activation (GO:0007343)	BP	3	*
Up-regulated in response to *Spiroplasma*			
N/A			
Down-regulated in response to *Spiroplasma*			
chorion (GO:0042600)	CC	6	***
extracellular matrix structural constituent (GO:0005201)	MF	5	**
myosin light chain kinase activity (GO:0004687)	MF	3	**
long chain fatty acid transporter activity (GO:0005324)	MF	4	**
***Spiroplasma* × *Howardula* Interaction (positive or negative)**			
integral to plasma membrane (GO:0005887)	CC	16	***
chitin-based cuticle development (GO:0040003)	BP	9	***
extracellular region (GO:0005576)	CC	24	***

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Data Accessibility:

The transcriptome assembly used in analyses, expression profiles of transcripts and infection intensities across treatments, and transcript annotations including taxonomy are archived in Dryad (doi:10.5061/dryad.5cs38).

Author Contributions:

PH, BK and SP designed the study, PH conducted experiments, PH and JL analyzed data, and PH and SP wrote the manuscript with input from BK and JL.

Supplemental Figures and Tables:

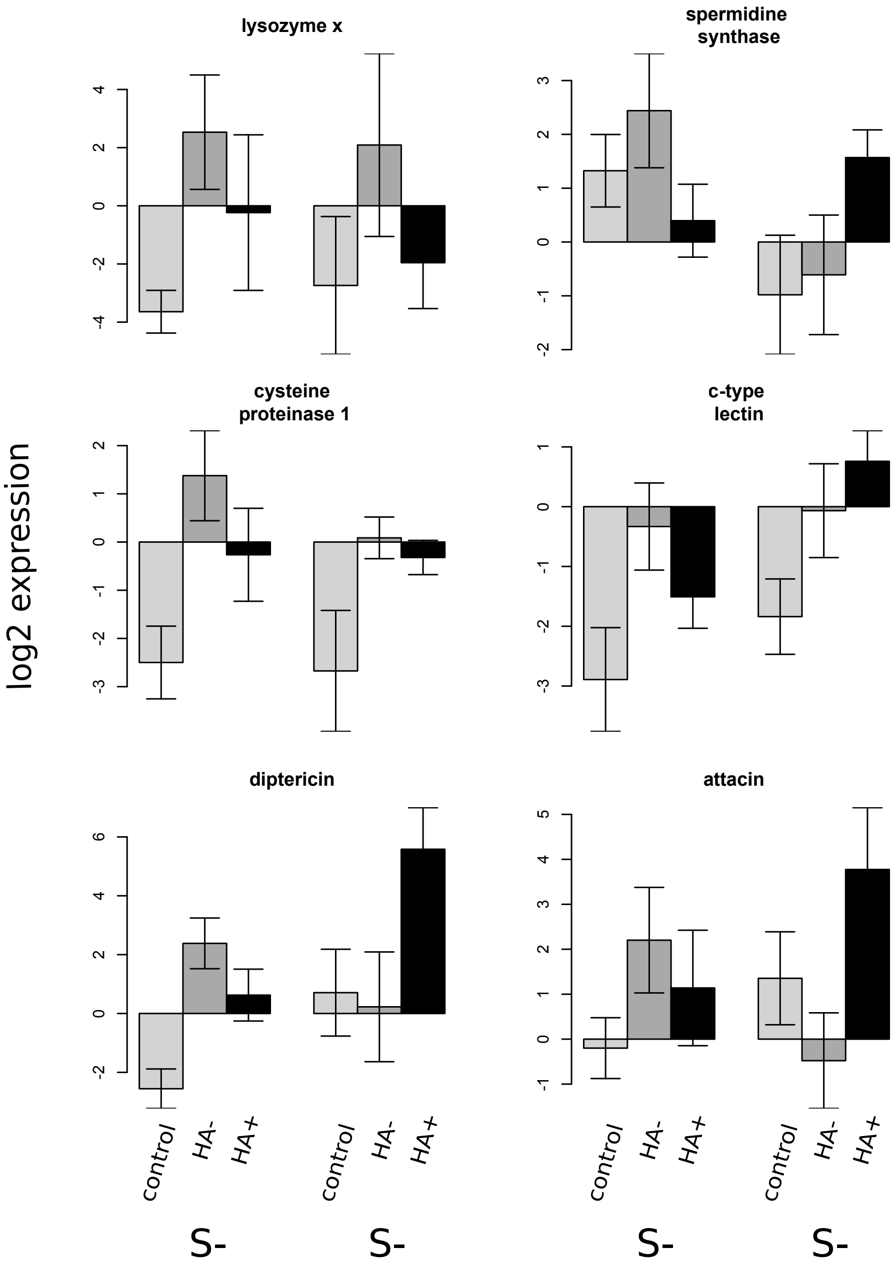

Figure S1. Results of RT-qPCR of selected *Drosophila neotestacea* genes, in response to *Spiroplasma* infection (S) and *Howardula* exposure and infection (HA). Nematode exposed flies were diagnosed as infected or uninfected using PCR (HA+ and HA-, respectively).

Table S1: PCR Primers and thermal cycling conditions used for diagnostic amplification of host and parasite DNA. All reactions were 12.5 μL in volume (1.25 μL 10x PCR mastermix, 0.2 mM dNTPs, 1.5 mM $MgCl_2$, 0.625 μL of 0.25 μM forward and reverse primers, and 0.31 units of taq polymerase (ABM, Richmond BC) with 0.5 μL of DNA template).

		Diagnostic Primers		
Name	**Target**	**Primer Sequence**	**Reference**	**Thermal Cycle**
p58	*Spiroplasma* putative adhesin 58	p58F: GTTGGTTGAATAATATCTGTTG p58R: GATGGTGCTAAATTATATTGAC	Montenegro *et al.* 2005	95°C 3min; 35x(94°C 60s, 54°C 60s, 72°C 90s); 72°C 10min
aor	*Howardula* cytochrome C	aorF: TTCGTTTGGAGCTTTCCAAACCTGG aorR: AACACTYGAACCCACATGACCCAA	Jaenike and Brekke 2011	95°C 3min; 35x(94°C 60s, 54°C 60s, 72°C 90s); 72°C 10min
tpi	*Drosophila* triose phosphate isomerase	tpiF: CAACTGGAAGATGAAYGGICACC tpiR: TTCTTGGCATAGGCGCACATYTG	Cockburn *et al.* 2013	95°C 3min; 35x(94°C 60s, 54°C 60s, 72°C 90s); 72°C 10min
m167 & m168	Trypanosomatid spliced leader RNA	m167: gggaagcTTCTGTACTWTATTGGTA m168: gggaattCAATAWAGTACAGAAACTG	Westenberger *et al.* 2004	95°C 5min; 4x(95°C 30s, 42°C 60s, 65°C 150s); 36x(95°C 30s, 50°C 60s, 72°C 120s)

Table S2. Primers and cycling conditions for qPCR and rt-qPCR. Thermal cycles for all reactions were 95°C for 3min, followed by 40 cycles of 90°C for 15 sec, the annealing temp for 45 sec, 72°C for 15 sec, and a melt curve analysis from 65-95°C. All dilution series to calculate primer efficiency had an $R^2 > 0.9875$.

		RT-qPCR & qPCR primers	
Name	**Target**	**Primer Sequence**	**Efficiency and Annealing Temp**
lysX	Lysozyme X (FBgn000431)	F: CACATAATCCGCAATGAACG R: CTCTGCTGCAGTTGTTCCTG	103% (58°C)
SpdS	Spermidine synthase (FBgn0037723)	F: CATTTTCCCAAAGTGGCCTA R: CTTTTCCACCCAACGAGGTA	87% (55°C)
Cp1	Cysteine proteinase 1 (FBgn0013770)	F: CCATTGAGCATGACATACCG R: ATTGATTGGCGTGAAAAAGG	102 % (55°C)
CG14500	c-type lectin (FBgn0034318)	F: GTGTGTGCAGGCAATCAACT R: TCCCGAAGTCCAGACGTATC	99 % (55°C)
dptB	Diptericin-B (FBgn0034407)	F: GTCCACTAGATGGGGCTTGA R: GGAGAAGGATTGGGATAGGC	96% (55°C)
attC	attacin-C (FBgn0041579)	F: TGGCCAACTGATTCTGTGAG R: CCGCGGGTAATACACAATCT	93% (55°C)

Rpl28	60S ribosomal protein L28 (FBgn0035422)	F: TACCTGGGTCAGATCCTTGC R: CGTGCCGTTAAGAACACCAC	97% (60°C)
Spiro_RIP	Putative ribosome inactivating protein	F: GGCCGCAAGTTCTTATCAAA R: GGCCGCAAGTTCTTATCAAA	99% (55°C)
dnaA	*Spiroplasma* dnaA	F: TTAAGAGCAGTTTCAAAATCGGG R: TGAAAAAAACAAACAAATTGTTATTACTTC	90% (60°C)
tpi_Q	*triose phosphate isomerase*	F: CGGACAGAATGCCTACAAAG R: CGGAGTGAGCCAAAATAACC	99 % (60°C)

Table S3. List of all transcripts significantly affected by treatments ($P_{adj} < 0.1$).
(See attached file: TableS3.csv)

Supp Table S3

FlyBase Gen	FlyBase Nam	Unigene Ide	Top Taxon BLAST ID	Contig Lengt	FlyBase BLAS	Adjusted P: S	Adjusted P:	Adjusted P:	Normalized	Normalized	Normalized	Normalized Read Count (S+ HA+)
FBgn002980	CG3108	10160898	Drosophila ananassae	3458	0	NA	NA	3.02E-07	4844.22681	441.330884	759.568133	779.186535
FBgn003626	CG11529	10161288	Drosophila mojavensis	1393	4.00E-113	8.91E-05	0.03826625	0.99999986	1277.83889	785.237733	3826.04744	1810.73647
FBgn003566	Jon65Aiii	10161331	Drosophila melanogaster	994	9.00E-47	0.08984243	0.88574872	0.99999986	10333.9418	11071.2675	7340.81298	5141.46816
FBgn002076	Acp65Aa	10161383	Drosophila mojavensis	607	2.00E-41	NA	NA	0.06873467	4275.81184	7634.14748	11963.7018	6605.64107
FBgn000035	Cp36	10161394	Drosophila virilis	1771	6.00E-99	0.55091143	0.01254242	0.99999986	369213.112	209724.723	258616.831	133693.291
FBgn003592	CG5804	10161397	Drosophila virilis	627	4.00E-32	0.99977843	0.04052787	0.99704785	50998.8218	60915.3529	25231.9669	64270.0965
FBgn003711	Cpr78E	10161406	Drosophila virilis	827	3.00E-44	NA	NA	0.00017833	28763.1988	20930.58	7771.97367	30629.0086
FBgn000398	Vm26Ab	10161421	Drosophila mojavensis	691	6.00E-14	0.99977843	0.08607549	0.65685503	100267.875	91551.3154	124614.506	49556.2636
FBgn004087	CG12479	10161432	Drosophila ananassae	756	4.00E-19	0.99977843	0.05086988	0.99999986	12923.7771	18860.3192	9500.64597	19181.9443
FBgn005240	Cpr65Av	10161474	Drosophila persimilis	458	2.00E-26	NA	NA	0.00169237	535.133354	2655.77923	1410.33871	1244.37253
FBgn000464	yl	10161484	Drosophila virilis	6616	0	0.99977843	0.01165572	0.99999986	479490.871	312927.953	482123.28	214093.712
FBgn000422	mex1	10161677	Drosophila pseudoobscur	553	2.00E-08	0.99977843	0.01579751	0.99999986	3271.23254	5464.5142	2853.92112	6068.35125
FBgn002270	Cht4	10161732	Drosophila mojavensis	2117	1.00E-163	0.03067771	0.90011106	0.99999986	35086.7059	30796.7121	49420.2831	73122.5859
FBgn003772	SpdS	10161758	Drosophila grimshawi	1239	1.00E-143	3.14E-13	0.96398078	0.99999986	27634.2514	25537.7626	6440.21097	6005.55114
FBgn026214	MtnE	10161767	Drosophila melanogaster	309	2.00E-18	0.99977843	0.02964893	0.99999986	3695.13523	4626.66748	2788.4411	7451.11661
FBgn000451	dy	10161866	Drosophila grimshawi	2608	0	0.99977843	0	0.99999986	5356.58854	250.379773	4751.83406	252.3634
FBgn004347	lambdaTry	10161964	Drosophila virilis	899	1.00E-53	NA	NA	0.00054518	331.064498	76.9649887	9.06646313	100.014988
FBgn001155	thetaTry	10162488	Drosophila virilis	913	1.00E-91	0.99977843	0.00016785	0.94436676	6913.81784	10905.6466	3864.32806	13377.5861
FBgn000128	Jon44E	10162489	Drosophila grimshawi	1005	1.00E-45	0.00011401	0.43664987	0.99999986	10187.6779	9755.06875	5700.79054	2960.90883
FBgn005108	CG31089	10162505	Drosophila virilis	1374	1.00E-92	NA	NA	0.00021118	13705.0192	15845.0453	7309.58405	1538.60267
FBgn000056	Eh	10162533	Drosophila grimshawi	977	4.00E-36	0.99977843	1.96E-13	0.99999986	313.547857	2292.38757	335.459136	1500.22482
FBgn003124	CG11911	10162564	Drosophila virilis	1391	2.00E-114	0.99977843	3.33E-06	0.80807906	42889.4932	76588.9319	25241.0333	99523.0539
FBgn003156	CG16712	10162580	Drosophila ananassae	382	1.00E-24	0.99977843	1.09E-05	0.99999986	10921.6251	26848.1159	9083.58867	23557.0186
FBgn001377	Cp1	10162585	Drosophila virilis	1340	2.00E-79	NA	NA	0.09147984	15419.0224	8533.37134	1626.92644	2831.81972
FBgn000114	GstD1	10162586	Drosophila virilis	1107	1.00E-74	NA	NA	0.00037769	1905.81044	25501.7157	1384.1467	3495.87272
FBgn001038	Def	10162682	Drosophila grimshawi	2186	8.00E-10	0.99977843	6.33E-06	0.99999986	2257.01907	5348.57959	1529.21011	4780.94902
FBgn006636	dyl	10162750	Drosophila virilis	3192	0	0.99977843	0	0.93421905	14313.7224	1016.1327	7317.64313	1159.47608
FBgn005210	CG32107	10162902	Drosophila mojavensis	3632	4.00E-14	0.00214282	0.80491819	0.99999986	544.767507	906.043537	241.77235	246.548575
FBgn003907	CG17380	10162967	Drosophila melanogaster	477	4.00E-16	0.99977843	0.0495143	0.99999986	890.721148	1302.55937	658.829654	1642.10655
FBgn026039	CG17147	10162984	Drosophila virilis	1195	7.00E-113	0.99977843	0.05761133	0.99999986	2708.07256	3835.58431	2779.37464	5981.12888
FBgn000253	Lcp1	10163084	Drosophila virilis	595	2.00E-38	0.99977843	7.31E-11	0.99999986	183584.898	583286.473	136838.113	542363.836
FBgn003360	Cpr47Ec	10163146	Drosophila erecta	527	3.00E-25	0.99977843	0.00132524	0.99999986	1215.65482	4104.47465	1440.56025	2186.37416
FBgn003706	Cpr78Ca	10163174	Drosophila mojavensis	966	6.00E-37	0.99977843	0.00234341	0.99999986	149.767273	502.708027	181.329263	507.05273
FBgn000335	Jon99Ci	10163207	Drosophila willistoni	881	6.00E-31	NA	NA	6.55E-05	158.525593	237.714649	483.5447	25.5852295
FBgn000035	Cp19	10163237	Drosophila virilis	1559	1.00E-26	0.20590115	0.00094978	0.99999986	439717.588	181033.344	234528.246	129087.95
FBgn003947	CG6277	10163242	Drosophila virilis	1226	8.00E-149	0.99977843	0.00878374	0.99999986	34953.5795	51427.226	32348.1331	79128.1371
FBgn003709	Est-Q	10163262	Drosophila grimshawi	3480	2.00E-170	0.0719702	0.84171073	0.99999986	8262.59913	5593.11392	3742.4345	3897.09564
FBgn003156	CG16713	10163276	Drosophila virilis	1497	1.00E-14	0.99977843	0.01449495	0.99999986	13916.9705	27808.7169	15794.7862	26857.5132
FBgn002545	CREG	10163288	Drosophila virilis	1078	7.00E-67	0.99977843	0.04717972	0.99999986	12048.8209	19482.8588	10767.936	19773.8935
FBgn003156	CG16713	10163366	Drosophila melanogaster	1202	5.00E-27	0.99977843	0.0008159	0.99999986	4437.84076	12386.492	5400.58987	9132.76397
FBgn003623	CG11570	10163372	Drosophila virilis	894	6.00E-45	0.71799684	7.27E-07	0.74578252	9449.35149	17806.1911	4235.04567	18191.0982
FBgn002234	CG10340	10163391	Drosophila grimshawi	1952	1.00E-124	0.01047536	0.94817652	0.99999986	15651.9937	18838.8859	8844.83847	8824.57825
FBgn003695	CG17145	10163527	Drosophila virilis	1452	1.00E-115	0.99977843	0.00012576	0.12841238	4012.18641	5604.80481	2195.09146	9359.54214
FBgn008524	CG34217	10163553	Drosophila virilis	1398	1.00E-44	0.05754699	0.09997413	0.99999986	2950.67802	4281.7864	1371.0507	2707.38247
FBgn003778	Fancl	10163604	Drosophila virilis	2737	1.00E-127	0.56546361	0.00894526	0.99999986	12148.6657	19588.0767	15498.615	34641.2378
FBgn003929	CG11852	10163605	Drosophila virilis	1149	1.00E-112	0.14950792	3.52E-09	0.99999986	13589.4094	31060.7313	5607.10375	26717.9574
FBgn000122	Hsp67Bc	10163610	Drosophila grimshawi	2413	2.00E-74	0.99977843	0.05894413	0.99999986	9566.71298	16410.1047	9550.00783	16055.8945
FBgn003800	CG3916	10163649	Drosophila virilis	974	3.00E-96	NA	NA	3.92E-05	605.199915	1928.99592	2544.65398	1019.92029
FBgn003447	Obp56g	10163660	Drosophila virilis	554	3.00E-34	0.00020711	3.94E-05	0.99999986	1613.28255	635.204717	670.918271	174.444747
FBgn003475	CG13510	10163662	Drosophila virilis	1267	9.00E-34	0.99977843	0.06084782	0.99999986	4105.90044	6488.44082	3332.42889	6252.09972
FBgn003567	CG10472	10163682	Drosophila mojavensis wi	914	2.00E-44	NA	NA	0.04026209	11443.621	17051.1548	16074.8391	7080.13078
FBgn003450	CG11192	10163690	Drosophila virilis	1104	5.00E-73	NA	NA	0.0615393	988.814333	1732.19937	2535.58752	1190.87614
FBgn003335	CG13748	10163702	Drosophila grimshawi	744	5.00E-49	0.05503489	0.51538698	0.14480142	309.168697	906.043537	1270.31222	990.846161
FBgn002895	CG15255	10163705	Drosophila virilis	1148	5.00E-98	0.99977843	0.0072998	0.99999986	1308.49301	2656.75347	1455.67102	3003.93854
FBgn003634	Syx13	10163734	Drosophila virilis	1074	2.00E-55	0.06675926	0.00770852	0.99999986	119.988985	455.94449	399.931762	737.319796
FBgn001354	l(2)dtl	10163759	Drosophila virilis	2862	0	0.99977843	0.05086988	0.99999986	15017.8914	10067.7999	19036.5504	9622.37222
FBgn003359	Cpr47Ea	10163765	Drosophila virilis	910	6.00E-55	0.00731454	0.83644959	0.31374984	2337.59562	3195.50839	7966.39893	4026.18475
FBgn000257	Kaz-m1	10163784	Drosophila virilis	653	1.00E-53	0.99977843	0.03782725	0.99999986	2743.98167	5172.24209	2895.22389	4930.9715
FBgn003616	CG7551	10163821	Drosophila virilis	1222	3.00E-81	0.02439474	0.97404608	0.99999986	1028.22677	1001.51909	1889.85387	2220.10014
FBgn000301	osk	10163842	Drosophila virilis	2915	1.00E-159	0.99977843	0.0517323	0.99999986	263140.222	183686.201	302819.868	150075.978

FBgn003947	CG6295	10163844	Drosophila grimshawi	1175	3.00E-165	NA	NA	0.02845995	56281.8404	79120.0084	32100.3164	154880.187
FBgn000397	Vm26Aa	10163852	Drosophila grimshawi	1094	1.00E-38	0.99977843	0.08380699	0.76777352	175089.328	157337.87	210740.869	84989.4805
FBgn000253	Lcp4	10163856	Drosophila erecta	561	2.00E-31	0.66991195	1.37E-08	0.99999986	53480.9297	115995.006	24961.9878	113443.745
FBgn000122	Hsp26	10163857	Drosophila virilis	1170	4.00E-59	0.99977843	0.00738851	0.99999986	202501.994	130994.411	319569.655	135728.48
FBgn003567	CG10472	10163865	Drosophila mojavensis ba	946	3.00E-42	NA	NA	0.01460739	1170.11156	2495.02957	4654.11774	2420.13012
FBgn005399	CG33998	10163910	Drosophila mojavensis	848	4.00E-27	0.99977843	1.12E-05	0.99999986	6491.66681	1798.44771	4339.81368	2189.86305
FBgn003695	CG6996	10163931	Drosophila virilis	1259	3.00E-119	0.99977843	0.0588065	0.99999986	192.683041	456.91873	330.422212	664.053002
FBgn003661	Cpr72Ea	10164124	Drosophila virilis	993	2.00E-36	0.99977843	0.00568842	0.80662929	30210.0733	39775.3113	14694.722	42890.1484
FBgn008651	Cpr47Eg	10164127	Drosophila ananassae	946	3.00E-19	0.02985124	0.00317511	0.99999986	10659.7513	18887.5979	5093.33751	11630.8127
FBgn005319	MtnD	10164143	Drosophila willistoni	863	5.00E-21	0.99977843	0.01517719	0.99999986	2481.23207	5538.55646	2855.93589	4614.64503
FBgn000114	GstD1	10164196	Drosophila mojavensis	774	4.00E-87	2.03E-06	0.2243501	0.99999986	4346.75424	9892.43664	2203.15054	2349.18925
FBgn000114	GstD1	10164197	Drosophila willistoni	773	7.00E-93	2.10E-08	5.96E-05	0.99999986	3891.32159	13085.0223	1604.76397	2882.99018
FBgn003956	CG4815	10164198	Drosophila virilis	1050	9.00E-40	0.00228818	0.99897354	0.72525889	399.379394	226.023764	640.696728	1103.65376
FBgn003885	CG17279	10164207	Drosophila persimilis	1121	1.00E-68	0.99977843	0.01206733	0.99999986	2668.66012	4683.17342	1846.53632	3945.94017
FBgn003873	CG11407	10164208	Drosophila virilis	1715	3.00E-172	NA	NA	0.09007627	539.512515	2733.71846	273.001279	4829.79355
FBgn000196	NimC3	10164209	Drosophila virilis	1623	8.00E-87	NA	NA	0.00561028	4072.61882	3403.99583	1473.80395	5385.69081
FBgn003947	CG6296	10164237	Drosophila virilis	1405	3.00E-123	0.99977843	1.83E-06	0.45411162	6922.57616	12248.1498	3364.66521	14792.9145
FBgn003900	Cyp6d4	10164250	Drosophila virilis	1881	0	0.99977843	0.00097905	0.99999986	2544.29197	5410.93098	2863.99496	6418.40371
FBgn003938	MCO3	10164306	Drosophila virilis	2103	0	0.47398197	0.06226382	0.46060634	394.124402	40.9180952	53.391394	41.8667392
FBgn003649	CG33259	10164334	Drosophila virilis	1089	2.00E-20	NA	NA	0.04748898	1734.14737	1517.86649	1169.57374	3815.68809
FBgn003766	St2	10164335	Drosophila virilis	1301	2.00E-153	0.01093066	0.01054104	0.23844131	42.0399362	29.2272109	527.869631	44.1926691
FBgn003947	CG17191	10164422	Drosophila willistoni	1214	5.00E-111	0.99977843	0.03232228	0.74578252	191.807209	264.993379	91.6720161	509.37866
FBgn006349	GstE5	10164424	Drosophila virilis	1059	1.00E-77	0.99977843	0.02713298	0.99999986	4069.99132	9137.40036	6441.21836	9353.72731
FBgn006423	Idgf5	10164466	Drosophila virilis	1713	2.00E-173	0.99977843	0.08036511	0.99999986	4866.12261	8557.72735	4963.38487	7959.3323
FBgn003213	CG4382	10164470	Drosophila virilis	2094	0	NA	NA	2.12E-05	1057.12923	3084.44499	5797.49948	2325.92995
FBgn001377	Cp1	10164487	Drosophila virilis	2108	4.00E-95	0.10719316	0.0362222	0.99999986	9384.53992	16403.285	15962.012	27947.2114
FBgn005037	CG30375	10164543	Drosophila virilis	1660	2.00E-144	NA	NA	0.00089812	1368.92542	3194.53415	3967.08131	1713.04741
FBgn003033	CG9360	10164730	Drosophila virilis	1799	8.00E-103	0.99977843	0.00288781	0.99999986	1455.63279	3430.30032	1355.93993	2646.90829
FBgn003431	CG14500	10164756	Drosophila virilis	763	7.00E-38	0.5251019	2.81E-05	0.99999986	1511.68604	3274.42186	1967.4225	6059.04753
FBgn026475	CG44008	10164763	Drosophila mojavensis	1802	9.00E-15	0.99977843	0.00051764	0.99999986	10914.6184	21435.2365	9107.7659	21983.527
FBgn000370	thr	10164846	Drosophila grimshawi	4515	0	0.99977843	0.06312613	0.99999986	12901.8813	8864.61306	16268.257	8236.11797
FBgn003591	Cdc6	10164894	Drosophila americana	3820	0	0.99977843	0.09886899	0.99999986	10027.4006	7411.04644	12814.9419	6388.16662
FBgn002174	C901	10164909	Drosophila mojavensis	1992	5.00E-174	0.99977843	0.01844525	0.99999986	506.230898	154.904218	352.584677	159.326202
FBgn004157	AttC	10164925	Drosophila grimshawi	1081	2.00E-88	NA	NA	0	1544.09182	3694.31946	16040.588	1068.76481
FBgn003947	CG17191	10164947	Drosophila grimshawi	1229	5.00E-141	0.99977843	0.00042833	0.56025308	8976.40221	12998.3149	4989.57687	17337.4819
FBgn003947	CG6283	10164949	Drosophila virilis	1151	4.00E-159	NA	NA	7.31E-08	9450.22732	10879.3421	2525.51367	27152.9063
FBgn003947	CG6283	10164950	Drosophila virilis	1128	1.00E-158	0.99977843	0.00200148	0.99999986	27297.9319	41867.0054	18560.0574	50786.6806
FBgn004158	AttB	10164955	Drosophila virilis	823	5.00E-93	0.99977843	0.09081116	0.73083134	22722.5855	20646.1018	28851.5004	11518.0051
FBgn003849	CG5292	10164957	Drosophila grimshawi	2648	3.00E-74	NA	NA	0.05532527	17582.3275	5900.97388	5979.83612	6609.12997
FBgn003005	CG12111	10165006	Drosophila virilis	1688	6.00E-94	0.99977843	0.09997413	0.99999986	1086.90752	1958.22313	1038.61372	1766.5438
FBgn003873	CG4572	10165019	Drosophila yakuba	2052	0	3.81E-07	0.99279774	0.99999986	5110.47974	5676.89859	16027.492	15389.5155
FBgn003948	CG14258	10165024	Drosophila virilis	1394	6.00E-74	0.27555154	7.08E-05	0.69058445	796.131292	3245.19465	2110.47114	3483.08011
FBgn003980	Cpr100A	10165040	Drosophila grimshawi	1398	2.00E-53	0.99977843	1.23E-05	0.99999986	85100.2167	184436.366	61941.0687	177102.122
FBgn003641	Sox21a	10165060	Drosophila virilis	1861	1.00E-44	0.09487213	0.84888051	0.99999986	325.809506	470.558095	777.701059	840.823679
FBgn003641	Sox21a	10165061	Drosophila virilis	970	3.00E-28	9.95E-05	0.93504358	0.99999986	31.5299521	29.2272109	177.299723	289.578279
FBgn003500	CG4563	10165097	Drosophila virilis	1735	1.00E-176	0.99977843	1.42E-06	0.99999986	77.0732164	408.206712	58.4283179	417.504427
FBgn005223	CG32230	10165104	Drosophila simulans	534	2.00E-31	0.99977843	0.00635693	0.99999986	78925.601	136969.427	58950.1432	125067.58
FBgn005002	CG30025	10165113	Drosophila virilis	1136	5.00E-81	8.19E-07	8.96E-08	0.38111738	26178.6186	49944.4322	5755.18932	27547.1514
FBgn000386	alphaTry	10165114	Drosophila virilis	1122	4.00E-110	1.41E-06	0.0058202	0.99999986	100227.587	48262.8933	253305.899	141929.409
FBgn005002	CG30025	10165116	Drosophila virilis	1100	6.00E-85	0.99977843	1.61E-07	0.99999986	29569.8401	59483.2196	22108.0666	93954.7775
FBgn000386	alphaTry	10165117	Drosophila mojavensis	934	5.00E-97	0.81076757	3.15E-06	0.99999986	23436.3886	54249.6004	29778.2944	88373.7086
FBgn003471	CG3292	10165169	Drosophila virilis	2029	0	0.99977843	0.05412842	0.99999986	2619.61352	5492.76717	3391.86459	4942.60115
FBgn003471	CG3292	10165170	Drosophila virilis	1960	0	0.99977843	0.05279069	0.99999986	16400.8301	28994.3674	14163.8302	23287.2107
FBgn005048	Cyp12d1-p	10165231	Drosophila virilis	1766	0	0.07085905	0.99774851	0.99999986	2183.44919	3021.11937	5400.58987	3998.27359
FBgn003331	CG8642	10165244	Drosophila virilis	1789	3.00E-65	0.00152081	0.96788002	0.99999986	5875.95692	5610.65025	2375.41334	2877.17535
FBgn000302	otu	10165271	Drosophila virilis	4582	0	0.99977843	0.02251455	0.99999986	62079.8483	49071.5128	74694.5602	28989.228
FBgn003331	CG8642	10165291	Drosophila virilis	1564	8.00E-52	0.00026119	0.97233116	0.99999986	1128.07162	730.680272	255.875737	338.422808
FBgn003949	grass	10165340	Drosophila virilis	1272	5.00E-58	0.07786412	0.92775039	0.99999986	7758.11989	9703.43401	4919.05994	4947.25301
FBgn004077	CoVIIc	10165344	Drosophila willistoni	473	1.00E-29	0.99977843	0.07024219	0.99999986	113242.451	166977.004	83556.5242	157279.384
FBgn003976	CG15533	10165373	Drosophila virilis	2612	0	0.99977843	0.00011567	0.99999986	7004.90437	11801.9478	4371.04261	14433.5583
FBgn003803	CG10096	10165375	Drosophila virilis	2231	2.00E-160	4.17E-11	0.92430062	0.99999986	5467.8192	5174.19057	1426.45687	1181.57242
FBgn000035	Cp16	10165391	Drosophila virilis	936	2.00E-30	0.00512219	0.12799971	0.99999986	135804.759	76758.4497	61343.6895	42635.459

FBgn000478	Ccp84Ab	10165407	Drosophila grimshawi	720	9.00E-32	NA	NA	0.03272224	1107.92749	2258.28916	2698.78386	1395.55797
FBgn003567	CG10469	10165424	Drosophila mojavensis so	921	3.00E-35	0.00593707	0.99050427	0.99999986	15514.4881	21753.8131	11210.178	7353.42755
FBgn000041	Sap-r	10165443	Drosophila virilis	2912	1.00E-50	0.0401272	0.63283516	0.99999986	7153.79581	8169.00544	3384.8129	5131.00148
FBgn001377	Cp1	10165474	Drosophila virilis	1859	5.00E-83	0.00919497	0.00243512	0.99999986	3087.30781	9171.49878	8827.71293	12741.4443
FBgn001377	Cp1	10165476	Drosophila virilis	1742	2.00E-81	NA	NA	0.04408844	1145.58826	4898.48054	100.738479	1697.92887
FBgn004026	Ugt36Ba	10165554	Drosophila grimshawi	1861	0	0.99977843	1.85E-05	0.99999986	1141.2091	4496.11928	1584.61628	2943.46436
FBgn002894	Cyp28a5	10165555	Drosophila grimshawi	2576	0	0.99977843	0.00020629	0.99999986	13242.5799	34516.3618	12828.0379	25060.7323
FBgn003783	Art1	10165567	Drosophila virilis	1907	8.00E-54	0.99977843	0.09420824	0.99999986	3188.90433	2117.99855	4083.93795	2129.38887
FBgn003532	yellow-g2	10165616	Drosophila mojavensis	1681	0	0.99977843	0.0024504	0.99999986	24353.3847	15836.2771	33115.7603	12311.1473
FBgn003975	CG9733	10165638	Drosophila mojavensis	2143	2.00E-161	0.99977843	0.09886899	0.99999986	977.428517	621.565352	1366.01378	638.467773
FBgn003808	CG5724	10165823	Drosophila virilis	1911	0	0.99977843	1.63E-07	0.99999986	1597.51758	6845.01279	1765.94554	4009.90324
FBgn003808	CG5724	10165824	Drosophila virilis	1902	0	0.99977843	5.25E-07	0.99999986	916.996108	2606.09297	708.191509	2556.19702
FBgn003080	wus	10165852	Drosophila virilis	3215	7.00E-159	0.99977843	0.09420824	0.99999986	8895.82567	5463.53996	9067.47051	5378.71302
FBgn003446	Obp56a	10165871	Drosophila mojavensis	1210	1.00E-16	NA	NA	0.04997633	175.166401	803.748299	1146.40389	1172.2687
FBgn003490	CG5532	10165895	Drosophila grimshawi	643	1.00E-32	0.00357508	0.3149078	0.99999986	3130.22358	5122.55583	7203.80865	9656.09821
FBgn003444	CG10073	10165969	Drosophila mojavensis	3066	0	0.17678843	0.00578807	0.99999986	11609.1532	18045.8542	5555.72713	13711.3571
FBgn003948	Cpr97Eb	10166016	Drosophila pseudoobscur	1238	2.00E-78	0.99977843	0.02511299	0.99999986	29301.8355	46350.4595	21339.432	42819.2075
FBgn002675	XRCC1	10166117	Drosophila virilis	661	2.00E-58	0.0063644	0.9951899	0.99999986	427.406018	425.743039	999.325713	1068.76481
FBgn003979	Spn100A	10166139	Drosophila virilis	2283	0	0.00026996	0.99908088	0.13755514	10319.9285	17614.2658	41129.5063	24146.6418
FBgn000253	Lcp1	10166145	Drosophila virilis	1142	7.00E-41	0.99977843	3.28E-07	0.99999986	66691.9796	185671.703	55345.7205	156506.012
FBgn003156	CG10031	10166169	Drosophila grimshawi	4402	8.00E-31	0.99977843	0.0004268	0.99999986	12449.9519	27940.2394	9705.14508	20724.0359
FBgn001172	Tig	10166173	Drosophila virilis	9939	0	0.99977843	0.07999553	0.99999986	24714.2275	42182.6592	22215.8568	35666.9729
FBgn002063	Lcp65Ag2	10166227	Drosophila simulans	450	4.00E-34	0.00920039	0.00966865	0.99999986	11573.2441	26985.4838	7251.15573	11198.1898
FBgn002063	Lcp65Af	10166229	Drosophila ananassae	450	2.00E-26	0.01029304	0.00346232	0.43580105	6291.97712	20303.1692	5008.71719	6466.08527
FBgn002064	Lcp65Ab2	10166230	Drosophila ananassae	382	1.00E-27	0.66991195	0.00025178	0.99999986	37999.7232	60068.7381	18036.2173	57690.0407
FBgn003780	CG3999	10166240	Drosophila virilis	3185	0	0.99977843	0.06132248	0.99999986	18661.3525	27204.6879	13509.0301	26455.1273
FBgn026198	Pxt	10166248	Drosophila grimshawi	3640	0	0.99977843	0.0346923	0.99999986	68315.7721	47172.7184	85522.9393	40490.9516
FBgn003676	CG5535	10166289	Drosophila willistoni	3287	0	0.99977843	0.03522368	0.99999986	25724.0618	17493.46	32719.858	15647.6938
FBgn005108	CG31089	10166308	Drosophila virilis	1542	2.00E-171	NA	NA	0.05473681	3344.80242	4764.03537	1705.50245	8279.14767
FBgn003331	CG8642	10166319	Drosophila grimshawi	1483	4.00E-39	NA	NA	0.05693232	699.789771	355.597732	133.982177	396.571057
FBgn004010	lectin-24Db	10166323	Drosophila grimshawi	2272	4.00E-31	0.99977843	0.02622174	0.99999986	2477.72874	4133.70186	2148.75176	4390.19279
FBgn002321	Elongin-C	10166375	Drosophila willistoni	1665	3.00E-42	0.53882311	0.00016289	0.86922839	323.18201	1620.16172	314.304055	565.200979
FBgn002973	CG6927	10166476	Drosophila virilis	1898	0	0.99977843	0.04717972	0.99999986	10762.2237	7722.80336	14025.8185	6475.38899
FBgn002557	Lcp9	10166486	Drosophila grimshawi	522	5.00E-18	0.99977843	0	0.99999986	19210.4992	83974.6481	10502.9938	92679.005
FBgn005029	Ipk1	10166502	Drosophila virilis	4633	5.00E-116	0.65201489	0.00944389	0.99999986	6800.83551	19024.9658	6609.45162	8745.49663
FBgn003868	Cyp12a5	10166505	Drosophila virilis	1839	3.00E-166	0.99977843	0.00534362	0.99999986	365.221946	748.216599	385.828375	1104.81673
FBgn003808	CG5724	10166521	Drosophila virilis	3051	0	0.99977843	9.40E-05	0.99999986	68.3148963	405.283991	82.6055529	322.141299
FBgn001503	Cyp4c3	10166532	Drosophila mojavensis	2091	0	0.99977843	0.00790845	0.99999986	1377.68374	3479.98658	1897.91295	3076.04237
FBgn003373	Cpr49Ah	10166568	Drosophila virilis	1821	1.00E-87	NA	NA	0.07897621	1462.63945	2474.57052	2995.96237	1453.70622
FBgn003336	Ance-4	10166577	Drosophila virilis	1970	0	0.99977843	0.02379309	0.99999986	18274.2348	31951.1869	17427.7569	31903.6182
FBgn003967	Obp99a	10166596	Drosophila grimshawi	765	4.00E-57	NA	NA	0.00149461	68476.0494	55570.6703	22675.2243	82744.9581
FBgn026303	CG43333	10166599	Drosophila virilis	3193	0	0.113018	1.17E-05	0.99999986	12604.0984	3477.06386	5244.44523	2786.46409
FBgn003191	CG15818	10166664	Drosophila grimshawi	1521	2.00E-27	0.99977843	0.01791487	0.99999986	651.619011	1788.70531	746.472131	1158.31312
FBgn000040	CycA	10166689	Drosophila virilis	3234	7.00E-170	0.99977843	0.05761133	0.99999986	114161.198	77602.1419	152041.565	78512.9286
FBgn000044	Hr46	10166808	Drosophila virilis	2610	0	0.99977843	0.05103761	0.99999986	11488.2884	7645.83837	11351.2118	5729.92844
FBgn000125	ImpE1	10166886	Drosophila grimshawi	6041	0	0.71799684	0.00944389	0.99999986	23462.6636	9425.77551	12235.6957	8380.32563
FBgn000035	Cp18	10166970	Drosophila virilis	1734	2.00E-29	0.99977843	0.00393989	0.99999986	237696.427	145763.895	206457.469	87071.1878
FBgn005107	CG31075	10166971	Drosophila mojavensis	3118	0	0.99977843	8.80E-07	0.99999986	9520.29388	26723.4132	8861.96401	23951.2637
FBgn026136	proPO-A1	10167074	Drosophila virilis	2314	0	0.03505729	0.85754047	0.99999986	1343.52629	1162.26875	1900.9351	3142.33137
FBgn000099	dup	10167085	Drosophila virilis	3017	0	0.99977843	0.04769943	0.99999986	37800.9093	25534.8399	44740.9808	22484.7649
FBgn003678	CG7320	10167141	Drosophila mojavensis	2360	0	0.99977843	0.06480333	0.99999986	641.984859	1326.91537	849.22538	1433.93582
FBgn003574	CG8629	10167237	Drosophila virilis	638	2.00E-28	0.99977843	0.00025992	0.99999986	54564.3339	132782.142	54391.7271	109674.575
FBgn003331	CG8642	10167326	Drosophila grimshawi	1267	2.00E-56	0.99977843	0.09148424	0.99999986	425.654354	859.28	356.614216	676.845617
FBgn002619	PH4alphaMP	10167341	Drosophila virilis	3540	0	0.26970756	0.09450747	0.99999986	1205.14484	1982.57914	1928.13449	3464.47267
FBgn026163	CG42713	10167345	Drosophila grimshawi	542	2.00E-26	0.99977843	0.04887266	0.75899536	44296.0794	17086.2275	28628.8684	24807.2059
FBgn000442	LysD	10167360	Drosophila mojavensis	1295	2.00E-64	0.99977843	0.09849993	0.99999986	154780.535	239856.029	147929.42	251777.266
FBgn003870	CG3739	10167507	Drosophila virilis	1685	7.00E-168	NA	NA	0.00961954	68838.6439	85202.1909	107330.805	34972.6828
FBgn003813	PK2-R2	10167547	Drosophila virilis	2847	0	0.99977843	0.04237006	0.99999986	422.151026	916.760181	538.950864	1021.08325
FBgn003574	CG15829	10167558	Drosophila virilis	656	2.00E-33	0.99977843	8.85E-05	0.99999986	16639.9322	27619.7143	11771.2913	39289.6088
FBgn026152	NT1	10167630	Drosophila mojavensis	4277	3.00E-147	0.99977843	0.03910037	0.99999986	2826.30988	1343.47746	2336.12533	1439.75064
FBgn003335	CG8213	10167664	Drosophila virilis	5204	0	0.99977843	0	0.99999986	8736.42424	1251.89887	6096.69276	1093.18708
FBgn003440	DptB	10167737	Drosophila grimshawi	692	2.00E-15	0.1418068	0.02090142	0.99999986	14657.9244	9812.54894	29777.2871	13553.1938

FBgn000064	Fcp3C	10167773	Drosophila mojavensis	986	5.00E-07	0.99977843	0.00684771	0.99999986	2856.08817	1785.78259	3234.71257	1223.43916
FBgn003529	CG1140	10167817	Drosophila buzzatii	10759	0	0.00038107	0.99279774	0.99999986	44930.1818	37073.7428	15958.9899	20610.0653
FBgn003964	CG14516	10167889	Drosophila grimshawi	5107	0	0.99977843	0.04814095	0.99999986	30162.7784	19986.541	34284.3266	17570.0749
FBgn003431	nopo	10167951	Drosophila buzzatii	7961	1.00E-05	7.09E-09	0.25408885	0.99999986	2010.91028	3880.39937	652.785345	836.171819
FBgn003156	CG16713	10168013	Drosophila virilis	412	2.00E-11	NA	NA	1.54E-09	1807.71726	1816.95828	52.3840092	1075.7426
FBgn003478	CG9825	10168018	Drosophila virilis	2468	3.00E-178	0.00152081	0.99222853	0.99999986	2381.38722	2337.20263	1045.66541	975.727616
FBgn000539	Yp2	10168092	Drosophila virilis	1719	0	0.58371504	0.09967734	0.99999986	1771756.47	1240605.47	1351121.61	732807.491
FBgn000036	Cp38	10168102	Drosophila virilis	1172	6.00E-51	0.48926169	0.00151448	0.99999986	515815.128	266986.675	361802.248	166080.703
FBgn000404	Yp3	10168108	Drosophila virilis	1642	2.00E-155	0.99977843	0.09603085	0.99999986	618599.269	436214.174	515612.78	275940.189
FBgn025920	Mlp60A	10168119	Drosophila erecta	781	1.00E-38	0.99977843	0.09148424	0.99999986	64734.4951	122053.807	73794.9655	104828.5
FBgn000462	Cys	10168122	Drosophila virilis	533	7.00E-32	0.99977843	0.06471129	0.99999986	51943.8445	82836.7353	45326.2713	79787.5382
FBgn000443	LysX	10168140	Drosophila grimshawi	1600	1.00E-24	0.00512219	0.00196041	0.28664456	38026.874	48833.7982	11522.4673	38723.2449
FBgn001038	Dbi	10168142	Drosophila virilis	803	4.00E-37	0.99977843	0.05155132	0.99999986	17353.7353	27952.9045	13161.4823	23839.6191
FBgn004347	lambdaTry	10168194	Drosophila virilis	971	1.00E-54	5.28E-10	0.79448428	0.99999986	3202.91764	3328.00508	9817.97218	14077.6911
FBgn004211	Cpr65Au	10168204	Drosophila virilis	555	1.00E-35	0.99977843	0.00819489	0.99999986	3068.03951	7464.62966	4002.33978	6278.84791
FBgn003372	Cpr49Af	10168208	Drosophila virilis	600	3.00E-38	0.99977843	0.00025003	0.99999986	2598.59356	7812.43347	4690.38359	8295.42918
FBgn003846	CG4009	10168217	Drosophila mojavensis	3112	0	0.38831384	0.01676441	0.99999986	41388.3172	23596.1016	27834.0418	14654.5217
FBgn005240	CG32407	10168223	Drosophila grimshawi	1510	6.00E-91	0.99977843	0.00122502	0.99999986	9439.71734	14790.9172	6663.8504	19077.2775
FBgn003567	CG10472	10168238	Drosophila mojavensis ba	992	2.00E-21	3.98E-09	0.99279774	0.99999986	8225.81418	10915.389	3043.30946	2472.46354
FBgn003375	muskelin	10168240	Drosophila virilis	3089	0	0.99977843	0.09148424	0.99999986	26675.2154	20141.4453	35925.3564	17581.7045
FBgn003602	CG18180	10168279	Drosophila grimshawi	933	1.00E-54	NA	NA	0.0523127	1422.35118	3832.66159	1095.02727	10196.8769
FBgn002064	Lcp65Ac	10168299	Drosophila virilis	511	2.00E-37	0.35557222	9.75E-10	0.99999986	1436.36449	4972.52281	824.04076	3295.84275
FBgn002064	Lcp65Ac	10168338	Drosophila ananassae	362	3.00E-32	0.01227756	0.16518232	0.99999986	2336.71979	4135.65034	1250.16453	1873.53658
FBgn003191	CG15818	10168369	Drosophila grimshawi	828	2.00E-23	0.99977843	0.04887266	0.99999986	3258.09506	4868.27909	2383.47242	4971.67528
FBgn005227	CG32277	10168371	Drosophila virilis	1254	5.00E-80	NA	NA	0.01819298	1800.7106	2190.09234	3202.47625	936.186807
FBgn002298	rpk	10168406	Drosophila virilis	2314	0	0.99977843	0.03596393	0.99999986	5137.63054	3721.59819	7026.50892	3003.93854
FBgn005205	CG32055	10168452	Drosophila virilis	2520	0	0.99977843	0.00756759	0.99999986	5145.51302	8415.48825	4063.79025	9421.17928
FBgn001038	Def	10168487	Drosophila grimshawi	568	2.00E-15	NA	NA	0.00344778	2026.67526	83.7846712	558.091175	160.489167
FBgn003661	CG4998	10168548	Drosophila willistoni	3388	0	NA	NA	1.82E-08	2653.77097	9322.50603	8418.71471	2755.06403
FBgn003017	CG2990	10168566	Drosophila virilis	4093	0	0.99977843	0.00600924	0.99999986	7730.9691	4800.08227	9021.13081	3720.32496
FBgn001165	mas	10168572	Drosophila mojavensis	3701	0	0.99977843	1.56E-05	0.99999986	9520.29388	3294.88091	6726.30826	2958.5829
FBgn003057	CG5321	10168835	Drosophila mojavensis	1425	3.00E-176	0.08210968	0.11930448	0.99999986	782.993812	928.451066	229.683733	712.897531
FBgn026281	CG43187	10169920	Drosophila pseudoobscur	589	1.00E-14	0.99977843	0.08886379	0.99999986	79.7007124	302.988753	99.7310944	195.378116
FBgn008523	CG34206	10169943	Drosophila mojavensis	1373	2.00E-43	NA	NA	0.00082491	1145.58826	283.503946	135.996947	325.630194
FBgn002976	CG3239	10170020	Drosophila virilis	2084	1.00E-52	0.99977843	0.03610918	0.99999986	476.45261	1255.79583	456.345311	734.993866
FBgn005240	Cpr65Av	10170159	Drosophila ananassae	381	3.00E-34	NA	NA	0.02225783	322.306178	864.151202	1046.6728	534.96389
FBgn004027	Osi14	10170180	Drosophila virilis	1139	2.00E-102	2.70E-05	3.99E-13	0.99999986	7282.54311	1205.13533	2086.2939	581.482489
FBgn003331	CG8642	10170223	Drosophila virilis	1008	2.00E-39	0.99977843	0.02121702	0.99999986	364.346114	975.214603	477.500391	845.475538
FBgn003083	CG8661	10170307	Drosophila mojavensis	365	2.00E-19	0.99977843	1.24E-07	0.99999986	2348.1056	5263.82068	1700.46553	7392.96836
FBgn003009	CG12057	10170313	Drosophila virilis	773	4.00E-67	NA	NA	0.00391899	4876.6326	4061.60807	1965.40773	7272.02
FBgn003667	CG13023	10170369	Drosophila virilis	1915	7.00E-47	0.00094398	0.93114109	0.99999986	277195.574	373999.184	723042.375	663279.63
FBgn003092	CG15043	10170400	Drosophila virilis	803	1.00E-39	0.99977843	0.02247712	0.99999986	6234.17221	13906.3069	10217.9039	15062.7224
FBgn003053	CG1368	10170408	Drosophila ananassae	339	7.00E-16	0.99977843	0.00388431	0.99999986	2214.97914	6495.2605	4327.72507	6217.21077
FBgn003569	CG13299	10170418	Drosophila virilis	1044	2.00E-17	0.99977843	0.00788287	0.99999986	2487.36289	1504.22712	2646.39985	1030.38697
FBgn003429	CG5767	10170444	Drosophila virilis	907	7.00E-51	0.99977843	0.01900295	0.99999986	12643.5108	21234.543	14742.069	28965.9687
FBgn008527	CG34247	10170473	Drosophila grimshawi	405	2.00E-20	0.99977843	0.00013553	0.99999986	7995.47037	14378.8135	6752.50026	20212.3313
FBgn005266	CG32667	10170509	Drosophila willistoni	422	3.00E-14	0.99977843	0.09886899	0.16717256	2939.29221	2896.4166	1953.31911	5812.49896
FBgn008536	CG34331	10170511	Drosophila virilis	637	4.00E-14	0.99977843	0.00411658	0.99999986	1311.12051	2706.43973	1179.64759	2578.29335
FBgn026153	CG42662	10170525	Drosophila virilis	1355	8.00E-05	0.99977843	0.09450747	0.99999986	1408.33786	2523.28254	1119.2045	1892.14402
FBgn003663	CG13033	10170714	Drosophila virilis	528	6.00E-12	0.99977843	0.08870523	0.99999986	261.873769	467.635374	291.134205	701.267881
FBgn003722	TwdlF	10170764	Drosophila mojavensis	1255	1.00E-58	NA	NA	0.02768992	185.676385	139.316372	30.2215438	300.044964
FBgn003611	CG14147	10170871	Drosophila virilis	816	1.00E-12	NA	NA	0.00089812	46.4190962	77.939229	322.363133	10.4666848
FBgn004055	CG11686	10170911	Drosophila virilis	429	3.00E-12	0.99977843	0.06969397	0.99999986	2175.5667	3914.49778	1880.78741	3162.10177
FBgn003712	CG14569	10170913	Drosophila mojavensis	685	3.00E-28	0.99977843	0.00738851	0.99999986	357.339458	540.703401	214.572961	932.697912
FBgn008525	CG34227	10170923	Drosophila virilis	571	2.00E-12	NA	NA	5.83E-13	916.996108	10718.5925	14086.2615	9107.17874
FBgn001042	TpnC73F	10170928	Drosophila virilis	365	3.00E-31	0.99977843	0.00087472	0.99999986	7347.35468	15641.429	7687.35335	16489.6804
FBgn003195	TwdlE	10170936	Drosophila virilis	1323	1.00E-36	NA	NA	0.00125302	54415.4424	106475.704	150560.709	64608.5193
FBgn003945	CG14245	10170938	Drosophila mojavensis	554	1.00E-21	0.99977843	0.00738851	0.79974678	19717.6059	56736.836	36394.7978	47187.304
FBgn003158	CG15423	10170955	Drosophila virilis	693	2.00E-20	0.99977843	0.0745691	0.99999986	8096.19105	14010.5507	9420.05519	15254.6116
FBgn001667	Lectin-galC1	10170974	Drosophila persimilis	437	3.00E-26	NA	NA	3.21E-05	684.900627	4.87120181	13.0960023	10.4666848
FBgn003676	CG16775	10170987	Drosophila mojavensis	744	6.00E-54	0.0012848	0.00134322	0.99999986	585.931611	1746.81297	259.905276	565.200979
FBgn003709	CG7173	10171109	Drosophila grimshawi	1303	2.00E-51	0.99977843	0.00137432	0.99999986	835.543732	329.293243	1119.2045	415.178497

FBgn003632	CG14118	10171130	Drosophila virilis	1649	7.00E-125	NA	NA	4.60E-05	4552.57476	1028.79782	330.422212	586.134349
FBgn003474	CG4269	10171511	Drosophila virilis	1913	1.00E-25	0.0174189	0.00072064	0.99999986	3328.16162	7157.74395	1655.13321	3807.54734
FBgn003567	CG10472	10172407	Drosophila arizonae	329	1.00E-18	2.20E-10	0.90076003	0.99999986	0	0	160.174182	94.2001632
FBgn000257	m	10172680	Drosophila virilis	2580	0	0.99977843	0.04336685	0.13755514	2742.23001	2647.01107	6372.71619	1984.01825
FBgn002090	Jon25Bi	10173179	Drosophila virilis	572	9.00E-59	0.00052976	0.22470925	0.18968362	65.6874003	75.9907483	729.346589	138.392832
FBgn001485	Eig71Ej	10173307	Drosophila virilis	303	2.00E-08	0.99977843	0.01210484	0.89133243	1660.57748	463.738413	825.048145	608.230683
FBgn001023	Lac	10173413	Drosophila virilis	402	8.00E-24	0.99977843	0.05662308	0.99999986	352.960298	567.982132	195.43265	586.134349
FBgn003179	CG9486	10174114	Drosophila virilis	733	2.00E-39	0.99977843	0.03967488	0.99999986	1039.61259	1813.06132	1243.11283	2486.41912
FBgn003772	Fst	10174142	Drosophila americana	1536	2.00E-10	0.99977843	0.03575008	0.99999986	1128.94745	2284.59365	1224.97991	2135.2037
FBgn003035	Sclp	10174330	Drosophila mojavensis	1814	4.00E-73	0.99977843	0.08641944	0.99999986	7594.33931	13883.8994	7290.44374	10992.345
FBgn026298	CG43294	10174522	Drosophila simulans	797	7.00E-30	0.66991195	8.64E-11	0.96639027	2498.74871	6529.35891	1099.05681	6428.87039
FBgn001446	Cp7Fa	10174529	Drosophila virilis	1985	3.00E-83	0.01309552	0.0562225	0.99999986	21631.2988	10217.8329	9061.4262	6561.4484
FBgn003683	CG3819	10174544	Drosophila virilis	1555	0	0.00245768	0.55973788	0.99999986	14926.8048	12583.2885	8101.3885	5279.861
FBgn003683	CG6839	10174545	Drosophila mojavensis	1345	0	0.99977843	0.00081039	0.99999986	4623.51715	8457.38059	4203.81674	10853.9521
FBgn026285	CG43218	10174638	Drosophila persimilis	1113	5.00E-15	3.33E-06	0.82473542	0.99999986	545.643339	443.279365	1802.21139	1446.72843
FBgn003428	CG10910	10174674	Drosophila mojavensis	862	1.00E-21	0.99977843	0.07807642	0.99999986	10449.5516	18059.4936	12033.2113	19309.8705
FBgn000125	ImpE3	10174684	Drosophila mojavensis	1319	1.00E-103	NA	NA	4.01E-05	1819.9789	137.367891	109.804942	111.644638
FBgn005162	CG31626	10174708	Drosophila virilis	672	2.00E-11	NA	NA	1.01E-05	4126.04457	12269.5831	12887.4736	5527.57254
FBgn005162	CG31626	10174709	Drosophila virilis	486	8.00E-23	NA	NA	9.84E-05	1350.53295	4439.61333	4061.77548	2078.21841
FBgn003372	Cpr49Ac	10174714	Drosophila virilis	3453	5.00E-62	0.99977843	0.01670105	0.99999986	33058.279	56289.6597	30844.1076	60152.0375
FBgn003741	Osi7	10174778	Drosophila willistoni	3011	9.00E-98	NA	NA	7.13E-07	144814.443	4322.70449	25622.8322	6020.66969
FBgn008533	CG34301	10174793	Drosophila mojavensis	629	3.00E-25	0.99977843	0.02903492	0.99999986	1050.12257	1726.35392	989.251866	2231.72979
FBgn004073	CG16836	10174870	Drosophila grimshawi	526	2.00E-05	0.99977843	0.0083991	0.99999986	851.308708	1766.29778	776.693675	1682.81032
FBgn003945	CG6403	10174963	Drosophila mojavensis	975	5.00E-27	0.99977843	0.07999553	0.74578252	780.366316	895.326894	537.943479	1671.18067
FBgn003431	CG14500	10175036	Drosophila virilis	597	5.00E-28	0.99977843	0.001739	0.99999986	544.767507	1108.68553	370.717603	1149.0094
FBgn003667	CG11905	10175135	Drosophila virilis	5129	0	0.02517844	1.04E-06	0.29691026	9527.30054	16668.2784	3093.6787	14296.3285
FBgn004347	lambdaTry	10175138	Drosophila erecta	835	4.00E-55	2.18E-06	0.92542745	0.99999986	1074.64587	1301.58513	3418.0566	3616.82108
FBgn000398	Vm26Ab	10175306	Drosophila mojavensis	812	4.00E-05	NA	NA	3.12E-07	510.610058	546.548844	547.009942	18.6074396
FBgn003550	CG15005	10175351	Drosophila virilis	2542	8.00E-68	NA	NA	0.04026209	268.004593	804.72254	1319.67408	857.105188
FBgn003043	CG12716	10175456	Drosophila grimshawi	1739	1.00E-44	0.11413736	0.00125874	0.60472951	4771.53276	1310.35329	1658.15537	1159.47608
FBgn003252	CG16956	10175468	Drosophila virilis	990	8.00E-38	0.99977843	0.02438698	0.99999986	1190.25569	529.012517	847.21061	429.134077
FBgn002687	CG13358	10175563	Drosophila virilis	653	3.00E-07	0.99977843	0.0004016	0.99999986	59.5565763	350.726531	133.982177	398.896987
FBgn002687	CG13358	10175564	Drosophila virilis	1105	6.00E-07	0.99977843	0.01204069	0.99999986	135.753961	365.340136	165.211106	483.793431
FBgn002752	Osi6	10175663	Drosophila virilis	3096	1.00E-79	NA	NA	0	67400.5277	4295.42576	3335.45105	5260.09059
FBgn026235	CG43055	10175708	Drosophila mojavensis	443	2.00E-22	0.99977843	1.43E-05	0.99999986	57.8049123	222.126803	36.2658525	418.667392
FBgn025924	laccase2	10176051	Drosophila melanogaster	1684	1.00E-144	NA	NA	0.00016013	111.230665	247.457052	1126.2562	194.215151
FBgn004062	CG18673	10176052	Drosophila melanogaster	483	1.00E-35	NA	NA	1.49E-12	126.995641	857.331519	3026.18391	693.127126
FBgn004062	CG18673	10176053	Drosophila melanogaster	374	4.00E-46	NA	NA	1.84E-12	136.629793	1009.31302	2912.34943	753.601305
FBgn003742	Osi15	10176109	Drosophila mojavensis	1345	2.00E-80	NA	NA	7.88E-08	3869.42579	417.949116	400.939147	587.297314
FBgn005300	CG33003	10176131	Drosophila virilis	1917	2.00E-100	NA	NA	0.00034262	1016.84096	59.4286621	50.3692396	52.333424
FBgn002757	CG14526	10176230	Drosophila virilis	2372	0	0.99977843	0.06760341	0.99999986	6705.36982	11194.996	5967.74751	10234.0918
FBgn003366	CG13183	10176288	Drosophila virilis	2364	0	0.99977843	0.01817781	0.99999986	4747.88529	6923.92626	3174.26948	7561.59828
FBgn000539	fs(1)M3	10176305	Drosophila virilis	5775	0	0.99977843	0.04796878	0.99999986	40074.5692	29293.4592	42091.5588	19490.1301
FBgn003466	CG4386	10176309	Drosophila virilis	1584	5.00E-162	0.99977843	9.56E-05	0.99999986	1043.11592	401.38703	1258.22361	375.637688
FBgn005260	Muc12Ea	10176391	Drosophila pseudoobscur	677	5.00E-33	2.03E-06	0.77180998	0.99999986	4353.76089	2689.87764	1115.17496	1159.47608
FBgn003049	CG15756	10176404	Drosophila virilis	749	1.00E-45	NA	NA	1.98E-08	1104.42416	8.76816327	5.03692396	10.4666848
FBgn003197	Sirup	10176439	Drosophila simulans	1525	2.00E-58	0.99977843	0.01124774	0.99999986	34922.0495	58286.8524	31986.4819	66604.1672
FBgn026303	CG43326	10176494	Drosophila willistoni	507	2.00E-26	0.99977843	0.08769037	0.99999986	387.117746	791.083175	361.65114	691.964161
FBgn003971	CG15515	10176526	Drosophila ananassae	1281	6.00E-46	0.99977843	0.00944389	0.99999986	3918.47239	7274.65279	3340.48797	6698.67827
FBgn003520	CG9184	10176585	Drosophila virilis	1627	3.00E-10	NA	NA	0.0045586	269.756257	851.486077	687.036428	301.207929
FBgn008531	CG34284	10176659	Drosophila virilis	552	1.00E-05	0.99977843	0.09815038	0.99999986	9375.7816	17632.7763	9944.90266	14231.2024
FBgn003124	CG11912	10176662	Drosophila virilis	930	2.00E-87	0.99977843	9.19E-05	0.17673432	32458.3341	46130.2812	15524.807	61624.3512
FBgn002885	CG15263	10176684	Drosophila persimilis	1057	9.00E-19	0.99977843	0.0058202	0.99999986	23892.6971	43267.963	23539.5604	48531.6915
FBgn008524	CG34215	10176756	Drosophila grimshawi	589	5.00E-12	0.99977843	0.03344921	0.99999986	4614.75883	10055.1348	6062.44168	8836.2079
FBgn003005	CG12111	10176779	Drosophila grimshawi	457	4.00E-16	0.15481167	0.00114783	0.99999986	406.38605	1499.35592	1133.30789	1829.34391
FBgn003161	CG3355	10176792	Drosophila melanogaster	1397	3.00E-141	NA	NA	0	71254.1885	2763.91991	2693.74693	3152.79805
FBgn008524	CG34215	10176832	Drosophila virilis	657	1.00E-19	NA	NA	0.09387227	728.692227	3197.45687	1255.20145	1565.35086
FBgn008524	CG34215	10176833	Drosophila virilis	646	5.00E-22	0.99977843	0.00298841	0.99999986	1612.40672	3984.64308	1666.21445	3036.50156
FBgn008524	CG34215	10176834	Drosophila virilis	561	5.00E-18	0.99977843	0.00401584	0.99999986	4885.39092	10431.1916	3682.9988	6960.34539
FBgn008531	CG34288	10177004	Drosophila ananassae	711	1.00E-12	0.99977843	0.00307665	0.99999986	1417.97201	2602.19601	1007.38479	2579.45632
FBgn003567	CG10472	10177033	Drosophila mojavensis ba	871	2.00E-31	NA	NA	0.07569145	3736.29933	5097.22558	5189.03906	2143.34445
FBgn005325	CG33258	10177076	Drosophila virilis	315	2.00E-11	0.00680958	0.21850125	0.99999986	1029.10261	1963.09433	2607.11184	3467.96156

FBgn003894	CG5391	10177201	Drosophila virilis	798	1.00E-62	0.00054913	0.42756931	0.15030731	702.417267	861.228481	3306.23689	1209.48358
FBgn004347	lambdaTry	10177223	Drosophila virilis	832	2.00E-64	0.99977843	7.70E-05	0.99999986	4486.01153	7965.38921	3538.94277	11593.5979
FBgn003253	CG16885	10177226	Drosophila willistoni	898	4.00E-31	0.99977843	0.01420233	0.99999986	35351.2072	59505.6271	28616.7798	57524.8996
FBgn005143	Muc96D	10177253	Drosophila mojavensis	653	8.00E-29	0.00645833	0.25408885	0.99999986	155.022265	32.149932	10.0738479	2.32592995
FBgn004177	tral	10177264	Drosophila virilis	1920	3.00E-56	0.99977843	0.01947907	0.99999986	148500.82	103041.506	169050.249	74540.2402
FBgn003934	CG5107	10177269	Drosophila mojavensis	670	6.00E-26	0.99977843	0.01556549	0.99999986	14082.5028	19897.8852	12697.0779	30618.5419
FBgn003743	Osi20	10177328	Drosophila grimshawi	1437	4.00E-95	NA	NA	7.86E-10	2584.58024	230.894966	182.336647	390.756232
FBgn003534	CG16762	10177353	Drosophila virilis	1360	1.00E-64	0.99977843	0.08215029	0.99999986	60280.0135	109387.708	82752.6311	123941.83
FBgn003742	Osi19	10177374	Drosophila mojavensis	1133	2.00E-91	NA	NA	1.89E-10	1638.68168	80.8619501	96.70894	204.681836
FBgn003694	CG7298	10177410	Drosophila virilis	589	4.00E-26	0.99977843	5.80E-05	0.99999986	324.057842	1602.6254	438.212384	835.008854
FBgn000396	Uro	10177453	Drosophila virilis	898	2.00E-128	0.0055422	0.83381578	0.11707676	4.37916002	16.5620862	265.949585	37.2148793
FBgn002885	CG15263	10177486	Drosophila pseudoobscur	1418	2.00E-25	0.99977843	0.01206733	0.99999986	2205.34499	5650.5941	3294.14827	4796.06757
FBgn003438	CG18609	10177501	Drosophila virilis	996	7.00E-66	0.01828564	0.99699351	0.99999986	3293.12834	2457.0342	1248.14976	1602.56574
FBgn003641	CG7906	10177510	Drosophila virilis	1093	8.00E-55	NA	NA	0.00172111	1361.91877	259.147937	504.699781	681.497477
FBgn026078	mxc	10177648	Drosophila mojavensis	2744	2.00E-142	0.99977843	0.09290167	0.99999986	9779.54016	7226.91501	11888.1479	5850.8768
FBgn003813	Osi22	10177679	Drosophila mojavensis	1221	2.00E-84	NA	NA	0	55.1774163	1373.67891	10939.1915	361.682108
FBgn004079	CG13064	10177683	Drosophila mojavensis	2083	1.00E-23	NA	NA	0.00165414	218.958001	1024.90086	1203.82483	839.660714
FBgn003283	CG10659	10177693	Drosophila virilis	947	2.00E-74	0.00393893	0.74297072	0.99999986	345.07781	389.696145	72.531705	143.044692
FBgn003431	CG14500	10177720	Drosophila virilis	828	4.00E-26	0.99977843	0	0.99999986	318.80285	1544.17098	159.166797	1893.30698
FBgn008527	CG34244	10177878	Drosophila mojavensis	588	2.00E-23	NA	NA	0	4785.54607	18.5105669	12.0886175	15.1185447
FBgn026150	CG42654	10177880	Drosophila melanogaster	590	1.00E-13	0.04452444	0.99279774	0.99999986	70.0665603	64.299864	207.521267	255.852295
FBgn002974	Rpn13R	10178111	Drosophila virilis	2116	1.00E-31	0.99977843	0.07154047	0.99999986	1379.43541	2333.30567	1234.04637	2299.18176
FBgn003280	CG13081	10178134	Drosophila virilis	969	1.00E-17	NA	NA	0	124.368145	3346.51565	3449.28553	2104.96661
FBgn005819	CG40198	10178204	Drosophila virilis	1327	4.00E-14	0.99977843	0.08607549	0.99999986	1212.15149	2180.34993	1101.07158	1903.77367
FBgn003439	CG15098	10178224	Drosophila grimshawi	1828	2.00E-10	0.01989504	9.14E-06	0.34508574	1522.19602	6666.7268	4825.37315	8002.36201
FBgn003813	CG15888	10178249	Drosophila grimshawi	1408	5.00E-81	NA	NA	0.02338781	497.472578	290.323628	4141.35888	548.919469
FBgn003593	CG13312	10178344	Drosophila grimshawi	1070	9.00E-93	0.99977843	0.00175188	0.99999986	980.056013	2241.72708	904.631543	2043.32947
FBgn002892	CG8997	10178365	Drosophila virilis	1150	3.00E-93	0.99977843	0.03705969	0.99999986	81230.7909	111861.304	65211.0397	143701.767
FBgn005028	CG30281	10178389	Drosophila ananassae	894	7.00E-43	NA	NA	0.09600417	18560.6318	15868.427	13719.5735	35651.8543
FBgn003124	CG11911	10178489	Drosophila virilis	802	6.00E-109	NA	NA	0.07193594	6164.10564	11070.2932	3167.21779	18171.3278
FBgn003370	CG13170	10178520	Drosophila virilis	716	1.00E-24	0.02985124	0.55504134	0.99999986	267.128761	484.19746	733.376128	907.112682
FBgn003614	CG7607	10178569	Drosophila virilis	705	1.00E-71	0.12876871	0.0111272	0.99999986	1612.40672	2886.6742	794.826601	1818.87722
FBgn026163	CG42713	10178640	Drosophila virilis	1325	6.00E-13	0.04308792	0.13072545	0.99999986	597.317427	887.532971	204.499113	509.37866
FBgn026163	CG42713	10178641	Drosophila virilis	1097	4.00E-13	0.00143384	0.63616925	0.99999986	524.62337	551.420045	1012.42172	1831.66984
FBgn003431	CG14500	10178649	Drosophila ananassae	444	3.00E-27	0.3575658	4.14E-06	0.99999986	390.621074	1625.03293	882.469078	2081.70731
FBgn005104	CG31041	10178698	Drosophila virilis	945	6.00E-19	0.56195155	0.00029697	0.99999986	9701.59111	29268.129	19733.6607	32689.7825
FBgn005104	CG31041	10178699	Drosophila virilis	502	2.00E-16	0.99977843	0.0045864	0.99999986	959.911876	2179.37569	1390.19101	2763.20479
FBgn003429	Muc55B	10178804	Drosophila virilis	775	2.00E-41	0.68556883	0.09512657	0.13003985	413.392706	402.36127	344.525599	1401.3728
FBgn003956	CG4815	10178834	Drosophila virilis	491	2.00E-19	0.00013906	0.93266409	0.99999986	72.6940563	53.58322	236.735426	454.719306
FBgn008547	CG34445	10178893	Drosophila melanogaster	695	3.00E-46	0.99977843	0.07435289	0.99999986	551.774163	1136.9385	594.357027	1039.69069
FBgn003418	CG6967	10178897	Drosophila virilis	1328	5.00E-68	0.99977843	0.00175188	0.99999986	72.6940563	266.941859	131.967408	473.326746
FBgn000462	Cys	10178915	Drosophila grimshawi	1238	4.00E-16	0.99977843	0.00254405	0.99999986	11431.3593	18719.0543	7966.39893	20087.8941
FBgn003944	TwdlN	10178927	Drosophila grimshawi	1820	2.00E-70	NA	NA	4.36E-08	1401.33121	4349.98322	1246.13499	304.696824
FBgn003676	CG16775	10178968	Drosophila virilis	1005	8.00E-54	0.13702218	0.06911782	0.99999986	12589.2092	25399.4205	25377.0303	35377.3946
FBgn003555	CG11350	10178990	Drosophila virilis	510	2.00E-14	0.25081676	0.07004631	0.99999986	100631.346	155566.701	58410.185	104851.759
FBgn003558	CG13705	10179026	Drosophila mojavensis	1001	3.00E-34	0.02073623	0.26740441	0.99999986	5209.44876	9788.19293	3390.85721	4125.03677
FBgn004123	Gr59d	10179029	Drosophila virilis	1304	2.00E-67	0.01545216	0.99882974	0.99999986	47.2949282	45.7892971	196.440034	208.170731
FBgn008526	CG34232	10179104	Drosophila grimshawi	1099	7.00E-08	0.99977843	3.02E-05	0.99999986	3299.25916	7949.80136	2807.58142	7275.5089
FBgn005276	CG32762	10179113	Drosophila virilis	1286	1.00E-40	NA	NA	5.03E-05	5945.14764	518.295873	1383.13932	873.386698
FBgn003923	CG13640	10179115	Drosophila virilis	745	8.00E-09	0.31885823	0.00926004	0.99999986	282.017905	565.05941	95.7015552	379.126583
FBgn005330	CG33306	10179142	Drosophila grimshawi	1405	4.00E-58	0.99977843	0.0021256	0.99999986	9040.33795	15515.752	6838.12797	16788.5624
FBgn002917	TwdlT	10179145	Drosophila virilis	721	7.00E-08	NA	NA	9.04E-05	3043.51621	7397.40708	8054.04141	3223.73892
FBgn002917	TwdlT	10179146	Drosophila willistoni	1168	2.00E-41	NA	NA	3.01E-05	6768.42973	15069.5499	21779.6592	7670.91699
FBgn002757	CG14526	10179159	Drosophila virilis	2174	0	0.99977843	1.31E-05	0.99999986	1083.40419	2585.63392	648.755806	2202.65567
FBgn008528	CG34253	10179231	Drosophila virilis	1008	1.00E-16	0.99977843	0.00208601	0.99999986	1059.75673	1876.38694	600.401336	1803.75868
FBgn003050	CG11162	10179245	Drosophila virilis	970	8.00E-106	0.61106053	0.00321582	0.99999986	627.971547	1026.84934	721.287511	2309.64845
FBgn003815	yellow-e3	10179291	Drosophila grimshawi	1599	7.00E-165	0.01116242	0.59947966	0.99999986	37.6607762	132.496689	285.089896	267.481945
FBgn003948	Cpr97Ea	10179335	Drosophila virilis	909	2.00E-46	0.99977843	0.01682039	0.99999986	8351.93399	12564.778	6446.25528	14602.1883
FBgn004060	CG14545	10179361	Drosophila virilis	1803	1.00E-30	0.99977843	0.01102583	0.99999986	4777.66358	3414.71247	7311.59882	2720.17508
FBgn003887	CG5892	10179424	Drosophila virilis	2457	0	NA	NA	0.00149461	1839.24721	666.380408	370.717603	871.060768
FBgn003431	CG14500	10179431	Drosophila grimshawi	666	1.00E-27	0.73082191	1.47E-11	0.99999986	95.4656884	849.537596	55.4061636	448.904481
FBgn003431	CG14500	10179432	Drosophila virilis	654	5.00E-36	0.99977843	0.01109109	0.99999986	1453.0053	3008.45424	1555.40212	2964.39773

FBgn002969	CG15570	10179459	Drosophila virilis	2264	8.00E-69	0.00581135	0.46165316	0.99999986	20603.0721	14221.9608	9873.37834	7383.66464
FBgn002894	CG7631	10179473	Drosophila simulans	1019	3.00E-101	0.99977843	0.02021985	0.99999986	146.263945	330.267483	128.945253	438.437796
FBgn003916	CG17786	10179552	Drosophila simulans	1071	9.00E-24	0.99977843	0.06704665	0.99999986	1054.50173	366.314376	578.238871	407.037742
FBgn005190	Mur29B	10179561	Drosophila virilis	1369	4.00E-09	0.99977843	0.01844629	0.99999986	8993.04302	17636.6733	11815.6162	20054.1681
FBgn026477	CG44014	10179568	Drosophila grimshawi	934	2.00E-13	0.99977843	0.01138335	0.99999986	5574.67071	10849.1407	5924.42996	10871.3966
FBgn004209	CG18735	10179591	Drosophila virilis	1079	3.00E-151	0.00500687	0.82768304	0.99999986	10300.6602	16014.5631	27104.6952	24907.2209
FBgn008536	Vml	10179612	Drosophila mojavensis	750	1.00E-05	NA	NA	0.0042007	33453.2792	35459.4265	42608.3472	10937.6856
FBgn000256	Lsp2	10179621	Drosophila willistoni	635	6.00E-76	0.99977843	0.00074742	0.99999986	74137.4275	230250.993	136920.719	202980.418
FBgn000256	Lsp2	10179622	Drosophila virilis	1716	0	0.99977843	0.01040058	0.99999986	407455.441	1078235.65	804386.682	1075964.73
FBgn000458	Eig71Eb	10179673	Drosophila virilis	1423	3.00E-11	0.99977843	0.00295567	0.99999986	49844.4752	18515.4381	31670.1631	21067.1106
FBgn005328	CG33281	10179707	Drosophila willistoni	1564	1.00E-122	0.99977843	0.0745691	0.99999986	374.856098	792.057415	361.65114	691.964161
FBgn000114	gsb-n	10179732	Drosophila virilis	2032	4.00E-107	3.03E-06	0.57172974	0.99999986	547.395003	610.848708	1398.25009	2472.46354
FBgn003588	Jon66Ci	10179738	Drosophila virilis	738	7.00E-98	NA	NA	0.00017705	4524.54813	4374.33923	552.046866	3258.62787
FBgn002854	CG16884	10179743	Drosophila willistoni	2027	3.00E-34	0.99977843	0.00208601	0.99999986	65634.8504	110111.569	46594.5688	114442.732
FBgn003641	CG7924	10179751	Drosophila virilis	617	1.00E-35	NA	NA	0	16349.156	119.831565	132.974793	148.859517
FBgn003439	CG15098	10179796	Drosophila virilis	1304	3.00E-35	NA	NA	0	566.663307	3447.83664	6072.51553	1052.4833
FBgn003439	CG15098	10179797	Drosophila virilis	1123	8.00E-29	NA	NA	0	587.683275	4099.60345	3982.19208	997.82395
FBgn002349	Lip1	10179847	Drosophila virilis	1383	0	0.09882347	0.92863176	0.99999986	307.417033	258.173696	72.531705	136.066902
FBgn005224	CG32241	10179848	Drosophila virilis	365	1.00E-09	0.99977843	0.00816532	0.99999986	5858.44028	10930.9769	5129.60336	10206.1806
FBgn003542	CG14960	10179881	Drosophila virilis	996	7.00E-92	NA	NA	2.91E-07	1036.10926	61.3771429	56.4135483	123.274288
FBgn003829	CG3984	10179893	Drosophila virilis	1489	4.00E-59	0.99977843	0.01358087	0.99999986	1090.41085	2073.18349	927.801393	1989.83308
FBgn003742	Osi18	10179900	Drosophila simulans	1302	3.00E-92	NA	NA	0.00161812	1340.8988	180.234467	225.654193	260.504155
FBgn003676	CG5506	10179901	Drosophila virilis	693	5.00E-50	0.99977843	0.03912738	0.99999986	6056.37831	11978.2853	7028.52369	10951.6412
FBgn003984	lox	10179970	Drosophila virilis	1273	3.00E-144	NA	NA	2.45E-11	11548.7208	751.13932	1516.11411	1637.45469
FBgn026236	CG43064	10180005	Drosophila mojavensis	2335	1.00E-06	0.99977843	0.08703543	0.99999986	982.683509	1582.16635	796.84137	1600.23981
FBgn003740	Osi1	10180181	Drosophila virilis	1230	4.00E-82	2.18E-05	8.97E-13	0.10096112	97.2173524	20.4590476	1206.84698	36.0519143
FBgn003622	CG17826	10180265	Drosophila virilis	1170	1.00E-13	0.99977843	0.01435751	0.99999986	359.091122	692.684898	208.528652	631.489983
FBgn004124	Gr28a	10180266	Drosophila grimshawi	1305	1.00E-94	0.05577897	0.00170017	0.80662929	301.286209	1210.00653	1002.34787	1525.81005
FBgn004095	Muc26B	10180311	Drosophila grimshawi	729	4.00E-32	0.99977843	0.00098427	0.55470852	985.311005	3664.11801	1797.17447	2586.43411
FBgn004095	Muc26B	10180314	Drosophila grimshawi	634	3.00E-31	0.99977843	0.05304367	0.99999986	1153.47075	2300.1815	1201.81006	2008.44052
FBgn005133	CG31337	10180363	Drosophila persimilis	1569	2.00E-32	0.99977843	0.00122502	0.18278593	2762.37414	3601.76662	1337.807	5208.92013
FBgn003919	CG17781	10180394	Drosophila virilis	1584	3.00E-101	NA	NA	0.05532527	523.747538	161.7239	45.3323156	125.600218
FBgn002999	CG2233	10180459	Drosophila virilis	1655	3.00E-69	0.99977843	1.39E-05	0.99999986	6973.37442	16509.4772	5635.31053	15134.8262
FBgn003235	Osi21	10180474	Drosophila mojavensis	1423	5.00E-90	NA	NA	1.49E-10	80.5765444	195.822313	2009.73266	132.578007
FBgn003451	Cpr57A	10180540	Drosophila mojavensis	1484	8.00E-38	0.58607413	0.03788136	0.99999986	1577.37344	4100.57769	3477.4923	4421.59284
FBgn003416	CG5550	10180583	Drosophila virilis	1273	2.00E-70	0.99977843	0.05401547	0.99999986	7960.43708	13470.8215	9726.30017	16794.3772
FBgn000011	Argk	10180597	Drosophila melanogaster	1177	3.00E-06	0.99977843	0.05326302	0.99999986	3578.64957	5238.49043	2765.27125	5771.79518
FBgn003566	Jon65Aiii	10180672	Drosophila virilis	596	3.00E-31	0.99977843	0.03638084	0.99999986	5128.87222	9259.18041	4773.99653	8283.79953
FBgn003566	Jon65Aiii	10180673	Drosophila erecta	848	3.00E-70	0.99977843	1.23E-06	0.99999986	2811.42073	7857.24853	2078.23483	5969.49923
FBgn005334	CG33346	10180686	Drosophila virilis	1165	3.00E-67	0.08170774	0.77019764	0.99999986	17230.243	29120.0445	13578.5396	12166.9396
FBgn003741	Osi8	10180688	Drosophila mojavensis	1238	4.00E-89	NA	NA	0	28.9024561	68.1968254	2529.54321	54.6593539
FBgn003741	Osi11	10180720	Drosophila virilis	1279	2.00E-121	NA	NA	0	37.6607762	100.346757	1898.92033	38.3778443
FBgn003043	CG15721	10180771	Drosophila virilis	1284	5.00E-05	0.00045956	0.87914898	0.99999986	4281.06684	3393.27918	1669.2366	1544.41749
FBgn004687	Obp83ef	10180777	Drosophila virilis	3347	5.00E-88	0.99977843	0.00860259	0.99999986	2344.60228	3444.91392	1585.62366	4327.39268
FBgn003693	CG7365	10180807	Drosophila virilis	1648	0	0.99977843	0.01092574	0.99999986	2635.3785	4643.22957	1877.76525	4051.76998
FBgn003741	Osi12	10180825	Drosophila mojavensis	1005	3.00E-63	NA	NA	0.00546293	299.534545	280.581225	2331.08841	366.333968
FBgn000466	sim	10180834	Drosophila virilis	498	1.00E-32	0.99977843	0.09542442	0.99999986	1701.74158	959.626757	1174.61067	644.282597
FBgn000466	sim	10180836	Drosophila virilis	1816	0	0.64688359	0.02982339	0.99999986	4475.50154	2339.15111	2828.7365	1592.09905
FBgn002090	Jon25Bi	10180867	Drosophila grimshawi	666	2.00E-99	0.06026656	0.80105593	0.99999986	6843.75128	5890.25723	12698.0853	10008.4766
FBgn003896	CG13847	10180880	Drosophila virilis	1063	5.00E-52	0.99977843	0.08596577	0.99999986	431.785178	166.595102	254.868352	113.970568
FBgn003720	CG11131	10180912	Drosophila grimshawi	607	2.00E-14	0.03761496	0.00025992	0.99999986	5886.4669	9958.68499	2339.14749	7324.35343
FBgn003720	CG11131	10180913	Drosophila grimshawi	532	3.00E-54	0.00730545	0.00039614	0.99999986	6078.27411	10026.8818	2184.01023	6789.38954
FBgn002757	CG14526	10180935	Drosophila grimshawi	2206	3.00E-167	NA	NA	0.00022759	10323.4318	11602.2285	15167.1854	3137.67951
FBgn008539	CG34369	10180946	Drosophila mojavensis	1094	4.00E-65	0.00581425	0.94007076	0.99999986	118.237321	132.496689	366.688064	451.230411
FBgn008539	CG34369	10180947	Drosophila willistoni	677	1.00E-29	0.05135842	0.91859039	0.99999986	8.75832004	15.5878458	78.5760138	101.177953
FBgn003741	Osi3	10181139	Drosophila virilis	1563	5.00E-67	NA	NA	0	7.88248804	47.7377778	18288.0635	13.9555797
FBgn002853	CG7953	10181163	Drosophila grimshawi	2262	3.00E-130	0.99977843	0.0478125	0.99999986	132511.631	174712.473	105895.282	236373.795
FBgn026475	Rgk1	10181212	Drosophila persimilis	1793	3.00E-67	0.00415125	0.64867685	0.23395289	4401.05582	3449.78513	1182.66975	2681.79724
FBgn003660	CG13043	10181239	Drosophila grimshawi	1033	6.00E-19	0.99977843	0.05047408	0.99999986	2430.43381	4080.11864	1616.85259	3053.94603
FBgn003659	CG13044	10181240	Drosophila virilis	756	4.00E-18	0.99977843	0.00110243	0.99999986	4676.9429	8994.18703	3504.69169	8380.32563
FBgn000328	rst	10181285	Drosophila virilis	2295	4.00E-24	0.99977843	0.09512657	0.99999986	1689.47994	2919.79837	1892.87602	3193.50183
FBgn026307	CG43340	10181290	Drosophila melanogaster	1122	2.00E-22	0.01051546	0.76367229	0.99999986	1161.35324	1368.80771	468.433928	665.215967

FBgn000016	bcd	10181296	Drosophila grimshawi	1833	2.00E-41	0.99977843	0.01449495	0.99999986	5898.72855	4136.62458	8257.53314	3287.70199
FBgn000016	bcd	10181297	Drosophila virilis	1269	2.00E-72	0.99977843	0.03969426	0.99999986	9012.31132	6126.99764	10569.4812	5014.70498
FBgn000256	ltd	10181300	Drosophila pseudoobscur	1100	3.00E-06	0	0.43064757	0.99999986	257.494609	556.291247	4.02953917	8.14075484
FBgn003748	CG14608	10181313	Drosophila virilis	5252	0	0.99977843	0.00089424	0.11827751	6903.30786	8776.93143	3293.14088	12684.459
FBgn003615	CG7557	10181344	Drosophila virilis	1408	3.00E-71	0.07677184	0.97917157	0.99999986	2635.3785	2627.52626	4435.51524	4994.93458
FBgn004080	CG12355	10181379	Drosophila virilis	1087	8.00E-31	2.04E-07	0.99694475	0.99999986	126.119809	111.063401	1.00738479	1.16296498
FBgn003431	CG14500	10181390	Drosophila virilis	754	3.00E-29	0.99977843	4.20E-06	0.99999986	220.709665	1103.81433	256.883122	728.016076
FBgn003712	CG14572	10181396	Drosophila virilis	1915	5.00E-61	1.09E-08	0.18805995	0.99999986	378.359426	645.921361	1530.2175	2507.35249
FBgn003415	CG15615	10181433	Drosophila mojavensis	1440	8.00E-138	NA	NA	0.00538088	478.204274	1002.49333	1251.17191	441.926691
FBgn003175	CG13992	10181443	Drosophila virilis	1280	9.00E-21	0.99977843	0.02982339	0.99999986	4858.24013	3206.22503	5164.86183	2351.51518
FBgn003718	CG11370	10181461	Drosophila virilis	1484	3.00E-74	0.99977843	0.00249471	0.99999986	7976.20206	16246.4323	8440.87717	17080.4666
FBgn026529	Dscam2	10181474	Drosophila pseudoobscur	2719	2.00E-06	0.99977843	0.02407455	0.99999986	4801.31105	7696.49887	3851.23206	7974.45085
FBgn003180	CG9500	10181618	Drosophila ananassae	1065	1.00E-10	0.9659332	0.00013757	0.99999986	2334.09229	6295.54123	1822.35909	3893.60674
FBgn003431	CG14500	10181648	Drosophila virilis	512	4.00E-31	0.99977843	0.02085602	0.99999986	1426.73034	3423.48064	1827.39601	2777.16037
FBgn003741	Osi9	10181649	Drosophila grimshawi	1653	3.00E-74	NA	NA	0.0002439	7188.82909	3574.48789	25104.029	2301.50769
FBgn000063	Fbp1	10181748	Drosophila virilis	1553	3.00E-25	NA	NA	0.00024522	338841.886	130802.485	107446.655	214834.52
FBgn000063	Fbp1	10181749	Drosophila virilis	1136	1.00E-23	NA	NA	6.60E-05	117779.26	71141.954	23170.8576	80771.4066
FBgn008667	CG13272	10181806	Drosophila virilis	1071	4.00E-78	0.99977843	0.04890435	0.99999986	639.357363	201.667755	451.308387	277.94863
FBgn008667	CG13272	10181807	Drosophila virilis	1096	2.00E-50	0.99977843	0.00194133	0.99999986	466.818458	104.243719	382.806221	148.859517
FBgn003686	ms(3)76Ba	10181825	Drosophila virilis	3132	2.00E-50	0.06531994	0.96528162	0.99999986	3010.2346	3037.68145	5065.13073	5834.59529
FBgn003932	CG10550	10181879	Drosophila grimshawi	1112	3.00E-53	NA	NA	0.01879988	797.007124	1002.49333	1126.2562	276.785665
FBgn003932	CG10550	10181880	Drosophila virilis	402	1.00E-35	NA	NA	0.02338781	411.641042	488.094422	741.435207	138.392832
FBgn008525	CG34227	10181979	Drosophila grimshawi	982	5.00E-11	NA	NA	7.07E-13	700.665603	9614.77814	9430.12904	7028.96032
FBgn000253	Lcp2	10182001	Drosophila virilis	486	2.00E-30	NA	NA	0.00160331	62175.314	264440.984	262097.346	250684.079
FBgn000253	Lcp2	10182002	Drosophila virilis	434	2.00E-30	2.02E-10	0.07999553	0.99999986	6425.97941	12885.303	28049.6221	38656.9558
FBgn003849	Mur89F	10182018	Drosophila virilis	2627	3.00E-86	NA	NA	7.55E-06	14308.4675	2481.3902	1717.59107	2200.32974
FBgn003849	Mur89F	10182019	Drosophila virilis	1989	4.00E-55	NA	NA	1.24E-06	25110.9794	4568.21306	3571.17909	5153.09781
FBgn026501	Np	10182074	Drosophila grimshawi	1461	8.00E-13	0.99977843	0.00790845	0.99999986	6172.86396	2542.76735	4017.45055	2492.23395
FBgn026501	Np	10182076	Drosophila virilis	1610	1.00E-56	0.99977843	0.0362222	0.99999986	2292.05235	1082.38104	1544.32089	907.112682
FBgn025090	Cht3	10182087	Drosophila mojavensis	9329	0	NA	NA	0.07611629	61090.1581	25913.8194	23338.0835	30731.3495
FBgn005257	Twdlalpha	10182144	Drosophila mojavensis	1215	4.00E-92	0.2490885	0.05775431	0.64530402	107.727337	609.874467	94.6941704	118.622428
FBgn004390	pygo	10182224	Drosophila mojavensis	2625	6.00E-50	0.99977843	0.04004047	0.99999986	20548.7705	14612.6312	25532.1676	11823.8649
FBgn005263	CG32631	10182283	Drosophila grimshawi	1516	4.00E-28	NA	NA	0	37567.0622	243.560091	222.632039	195.378116
FBgn003026	CG18292	10182295	Drosophila virilis	1019	7.00E-15	0.99977843	0.08596577	0.99999986	7196.71158	4809.82467	7819.32075	4166.90351
FBgn002895	mthl3	10182306	Drosophila grimshawi	627	5.00E-17	0.0135668	0.77180998	0.99999986	155.022265	115.934603	32.2363133	12.7926148
FBgn003799	CG4702	10182308	Drosophila virilis	1560	4.00E-165	0.99977843	0.02308072	0.99999986	15432.1599	7404.22676	9774.65464	6210.23298
FBgn026235	CG43055	10182351	Drosophila persimilis	1174	2.00E-31	0.99977843	0.02438698	0.99999986	1918.07209	3905.72962	2208.18746	3763.35467
FBgn004124	Gr28a	10182363	Drosophila virilis	702	6.00E-27	0.99977843	0.09450747	0.99999986	70.0665603	239.663129	174.277569	329.119089
FBgn004124	Gr28a	10182364	Drosophila grimshawi	1640	9.00E-40	0.38831384	0.00068041	0.99999986	200.565529	770.624127	495.633318	1026.89808
FBgn000256	Lsp1gamma	10182411	Drosophila virilis	2362	0	0.99977843	3.99E-05	0.99999986	788300.478	2291522.45	1152474.39	2248780.02
FBgn003687	CG9449	10182412	Drosophila virilis	1761	0	0.49565241	0.04004047	0.99999986	4105.0246	10017.1394	8725.96707	11144.6934
FBgn003566	Jon65Aiii	10182423	Drosophila virilis	631	6.00E-54	0.99977843	0.01947907	0.99999986	46434.8612	67044.2991	47475.0231	107681.253
FBgn005002	CG30025	10182426	Drosophila virilis	681	9.00E-63	NA	NA	0.00581591	1816.47558	10977.7404	3168.22517	4518.11894
FBgn000386	alphaTry	10182428	Drosophila pseudoobscur	570	6.00E-45	0.99977843	5.98E-06	0.99999986	10171.9129	20423.0007	8104.41065	27283.1584
FBgn003566	Jon65Aiii	10182429	Drosophila mojavensis	423	5.00E-40	0.99977843	0.02997762	0.99999986	9898.65331	13463.0276	9682.98262	22602.2243
FBgn005257	TwdlX	10182486	Drosophila virilis	1539	6.00E-105	0.99977843	1.40E-07	0.99999986	3399.10401	12495.6069	4049.68686	9887.52824
FBgn026504	Strn-Mlck	10182507	Drosophila virilis	8623	0	0.00346065	0.93864001	0.99999986	16338.646	20725.0152	9128.92098	8771.08186
FBgn026164	CG42724	10182519	Drosophila melanogaster	1477	1.00E-09	0.99977843	0.02321282	0.99999986	747.084699	1819.881	748.4869	1238.5577
FBgn003285	CG16798	10182655	Drosophila virilis	2327	4.00E-147	0.03468805	0.96668346	0.99999986	1219.15815	1441.87574	3031.22084	2192.18898
FBgn003922	CG13634	10182690	Drosophila virilis	1865	4.00E-162	0.06839357	0.79448428	0.99999986	345.07781	289.349388	829.077684	574.504699
FBgn005120	CG31207	10182718	Drosophila grimshawi	899	6.00E-73	0	0.97565195	0.99999986	296.031217	311.756916	0	1.16296498
FBgn000349	spz	10182779	Drosophila virilis	804	3.00E-10	0.99977843	0.06480333	0.99999986	1319.003	2222.24227	1235.05376	2349.18925
FBgn003530	CG15879	10182811	Drosophila grimshawi	1363	6.00E-90	NA	NA	0.0472698	296.907049	719.963628	1204.83221	621.023298
FBgn003741	Osi4	10182875	Drosophila grimshawi	1644	4.00E-125	NA	NA	4.57E-08	30.6541201	35.0726531	1646.06675	46.5185991
FBgn025923	Camta	10182879	Drosophila virilis	927	1.00E-17	0.07822694	0.67428099	0.99999986	116.485657	197.770794	26.1920046	53.496389
FBgn003952	CG5639	10182922	Drosophila grimshawi	5408	0	0.05941343	0.00136116	0.99999986	7970.07124	2711.31093	3231.69041	2015.41831
FBgn003878	CG4362	10182970	Drosophila virilis	1125	9.00E-104	NA	NA	6.22E-06	74282.8156	66215.2205	26638.2761	162139.414
FBgn003056	CG9411	10183017	Drosophila grimshawi	1294	8.00E-78	NA	NA	2.79E-06	3578.64957	396.515828	393.887454	471.000816
FBgn003056	CG9411	10183018	Drosophila grimshawi	897	1.00E-57	1.82E-07	0.00307385	0.99999986	339.822818	19.4848073	3.02215438	1.16296498
FBgn003056	CG9411	10183020	Drosophila grimshawi	2294	2.00E-148	NA	NA	7.20E-05	11553.9758	1021.97814	1393.21317	800.119904
FBgn002854	NimB4	10183034	Drosophila grimshawi	2512	0	0.99977843	0.05553915	0.99999986	2109.00347	3880.39937	2078.23483	3513.3172
FBgn002347	Tequila	10183069	Drosophila mojavensis	1423	2.00E-106	0.99977843	0.00479918	0.99999986	1156.97408	2177.42721	805.907833	1990.99604

FBgn003430	CG5756	10183230	Drosophila virilis	731	1.00E-14	NA	NA	0.00144382	346.829474	25.3302494	7.05169354	32.5630194
FBgn003430	CG5756	10183231	Drosophila grimshawi	742	6.00E-26	NA	NA	0.00088311	545.643339	88.655873	59.4357027	177.933642
FBgn003430	CG5756	10183235	Drosophila virilis	1945	1.00E-141	NA	NA	7.73E-06	829.412908	151.981497	56.4135483	247.71154
FBgn003555	CG13722	10183238	Drosophila virilis	1369	2.00E-08	0.99977843	1.90E-11	0.99999986	22113.0064	65214.6757	13764.9058	64635.2675
FBgn003555	CG13722	10183239	Drosophila grimshawi	592	1.00E-12	0.99977843	1.35E-12	0.99999986	12812.5464	37656.3385	7170.56495	39534.9944
FBgn003180	CG9500	10183249	Drosophila virilis	1318	8.00E-71	0.00919497	0.8371112	0.99999986	36050.1211	44467.2529	19285.3745	22009.1122
FBgn003180	CG9500	10183252	Drosophila virilis	1125	2.00E-66	NA	NA	0.09029441	660.377331	1164.21723	199.462189	1433.93582
FBgn003180	CG9500	10183253	Drosophila virilis	1071	6.00E-70	0.4637641	3.65E-06	0.36298127	1018.59262	1904.63991	351.577292	1951.45523
FBgn003180	CG9500	10183254	Drosophila virilis	849	3.00E-66	2.78E-10	0.74504324	0.99999986	709.423923	555.317007	3014.0953	2353.84111
FBgn003740	Osi24	10183301	Drosophila mojavensis	2074	0	0.57553807	0.0011087	0.80462623	2269.28072	561.162449	855.269688	554.734294
FBgn003970	neo	10183378	Drosophila mojavensis	2826	0	NA	NA	0.00012222	1860.26718	5933.12381	13172.5635	7211.54582
FBgn003277	fon	10183417	Drosophila virilis	2051	4.00E-24	0.99977843	0.02373862	0.99999986	117729.338	213268.035	101401.338	177505.67
FBgn003331	CG8642	10183421	Drosophila grimshawi	552	7.00E-11	0.61777666	0.01512553	0.99999986	239.977969	555.317007	107.790173	339.585773
FBgn003861	CG14309	10183456	Drosophila virilis	3435	0	0.67220126	8.42E-11	0.20350812	13858.2898	6104.59011	15394.8544	2424.78198
FBgn003174	CG9021	10183507	Drosophila virilis	1397	6.00E-64	0.05877723	0.00134322	0.99999986	18612.3059	6604.37542	7818.31337	4922.83075
FBgn003671	CG13728	10183531	Drosophila virilis	2315	4.00E-142	NA	NA	0.00020343	191.807209	243.560091	2628.26692	394.245127
FBgn003829	CG6912	10183558	Drosophila virilis	1094	3.00E-84	0.99977843	0.08505147	0.99999986	482.583434	914.811701	319.340979	652.423352
FBgn003676	CG5506	10183706	Drosophila virilis	1041	3.00E-51	0.99977843	0.0431866	0.99999986	1682.47328	3246.16889	2133.64099	3598.21364
FBgn003676	CG5506	10183707	Drosophila virilis	662	5.00E-50	0.99977843	0.09745232	0.99999986	4198.73863	8607.41361	5177.95783	6960.34539
FBgn003676	CG5506	10183708	Drosophila virilis	662	3.00E-51	5.36E-05	0.86453033	0.99999986	220.709665	365.340136	42.3101613	46.5185991
FBgn001560	toc	10183747	Drosophila virilis	699	3.00E-75	0.99977843	0.01138335	0.99999986	5788.37371	3585.20454	5868.01641	2557.35999
FBgn001560	toc	10183749	Drosophila virilis	938	9.00E-73	0.99977843	0.00756759	0.99999986	6397.95279	3982.6946	6837.12058	2844.61233
FBgn003173	CG11029	10183780	Drosophila grimshawi	2225	2.00E-163	0.99977843	0.00038426	0.99999986	599.069091	1136.9385	423.101613	1590.93609
FBgn003831	CG14866	10183796	Drosophila ananassae	583	2.00E-43	0.99977843	0.07676649	0.99999986	338.946986	94.5013152	135.996947	59.3112138
FBgn003149	CG17264	10183833	Drosophila grimshawi	2495	4.00E-133	0.99977843	0.03151391	0.579724	402.00689	320.525079	1002.34787	236.08189
FBgn026179	dsx-c73A	10183861	Drosophila virilis	2048	2.00E-154	NA	NA	3.01E-05	1061.50839	3692.37098	9465.3875	4889.10476
FBgn026179	dsx-c73A	10183862	Drosophila virilis	1880	6.00E-54	NA	NA	0.00056503	1213.02733	2998.71184	7897.89677	3643.56927
FBgn003925	CG13646	10183990	Drosophila virilis	2137	0	NA	NA	0.00770621	248.736289	1207.08381	1734.71661	1670.01771
FBgn003402	CG12964	10184018	Drosophila virilis	2194	0	0.99977843	0.0517323	0.99999986	3651.34363	1992.32154	2983.87375	1722.35113
FBgn003402	CG12964	10184019	Drosophila grimshawi	561	2.00E-15	0.99977843	0.00578807	0.99999986	1526.57518	611.822948	989.251866	477.978606
FBgn003402	CG12964	10184020	Drosophila virilis	1225	2.00E-96	0.64688359	0.00944389	0.99999986	1942.59539	795.954376	1066.82049	566.363944
FBgn003878	CG4367	10184037	Drosophila grimshawi	1024	2.00E-79	0.99977843	0.03283497	0.99999986	3852.78499	7439.29941	4831.41746	7991.89532
FBgn008700	Rfabg	10184045	Drosophila virilis	6240	0	0.01545216	0.15245446	0.99999986	436941.201	574448.165	193793.635	364401.12
FBgn000256	Lsp1beta	10184117	Drosophila grimshawi	798	2.00E-122	0.99977843	1.68E-05	0.99999986	119445.093	339992.35	139611.444	296486.291
FBgn008538	CG34355	10184118	Drosophila mojavensis	6394	0	0.99977843	1.59E-06	0.99999986	203846.396	714853.737	266181.284	547118.037
FBgn003439	CG15098	10184135	Drosophila virilis	1497	3.00E-08	0.99977843	0.0115907	0.99999986	836.419564	1791.62803	628.60811	1295.54299
FBgn003439	CG15098	10184137	Drosophila sechellia	425	1.00E-07	0.99977843	0.08448109	0.99999986	111.230665	492.965624	125.923099	180.259572
FBgn003870	CG3734	10184260	Drosophila virilis	1437	3.00E-69	NA	NA	0.03132128	801.386284	691.710658	305.237592	1276.93555
FBgn000563	slbo	10184266	Drosophila virilis	549	9.00E-43	0.02105111	0.41678498	0.99999986	1617.66171	869.022404	613.497338	487.282325
FBgn003620	Muc68D	10184286	Drosophila virilis	1920	2.00E-22	0.00020283	0.99279774	0.99999986	64004.927	44692.3024	20007.6694	26656.3202
FBgn003985	mey	10184321	Drosophila virilis	3486	0	NA	NA	0.04873423	3991.16644	6994.07157	16215.873	8493.13323
FBgn000045	ect	10184414	Drosophila pseudoobscur	591	2.00E-06	0.64958739	1.86E-06	0.99999986	3506.83134	834.923991	1653.11844	728.016076
FBgn000018	BicC	10184479	Drosophila virilis	3487	0	0.99977843	0.0745691	0.99999986	137722.831	101659.059	171703.701	84231.2274
FBgn002030	crol	10184603	Drosophila virilis	902	2.00E-10	0.99977843	0.08537224	0.99999986	10050.1723	17117.4032	8780.36585	14164.9134
FBgn025978	vfl	10184628	Drosophila virilis	474	1.00E-22	0.99977843	0.02090142	0.99999986	5690.28053	3404.97007	6933.82952	3395.85773
FBgn026435	SNF4Agamm	10184764	Drosophila virilis	440	2.00E-25	0.99977843	0.07273125	0.99999986	1957.48453	1414.59701	2343.17703	1010.61657
FBgn003513	mthl10	10184812	Drosophila mojavensis	1680	6.00E-146	0.38994816	0.01449079	0.56080006	418.647698	1482.79383	1198.7879	1519.99523
FBgn003873	CG11407	10184821	Drosophila virilis	1392	2.00E-130	1.18E-06	0.04004047	0.99999986	2686.17676	2126.76671	1237.06852	429.134077
FBgn003873	CG11407	10184823	Drosophila grimshawi	648	3.00E-61	0.08881859	0.15902497	0.99999986	438.791834	856.357279	206.513882	384.941407
FBgn003873	CG6300	10184826	Drosophila virilis	590	5.00E-55	6.00E-05	0.02460378	0.99999986	983.559341	624.488073	406.983456	119.785393
FBgn003873	CG6300	10184827	Drosophila virilis	493	4.00E-55	0.05932363	0.12673057	0.99999986	367.849442	760.881723	161.181567	318.652404
FBgn026444	ab	10184938	Drosophila virilis	4152	0	0.99977843	0.01517237	0.99999986	5973.17427	9309.84091	3698.10957	8301.24401
FBgn003444	CG10073	10184946	Drosophila mojavensis	1981	0	0.99977843	0.01420233	0.99999986	7806.29065	12303.6815	4942.22979	10936.5227
FBgn003336	CG13744	10185033	Drosophila virilis	1501	0	0.05877723	0.97815333	0.99999986	156.773929	268.89034	597.379182	420.993322
FBgn005028	CG30281	10185127	Drosophila ananassae	910	1.00E-48	0.99977843	0.09450747	0.99999986	9189.22939	18694.6983	12647.7161	16849.0366
FBgn003016	CG1791	10185137	Drosophila ananassae	1243	1.00E-17	0.99977843	0.01964444	0.99999986	2050.32272	4879.96998	2282.73394	3421.44296
FBgn003418	CG6967	10185147	Drosophila virilis	3852	0	0.99977843	0.04887266	0.99999986	17838.0704	12213.0772	20316.9365	10009.6396
FBgn003059	CG9518	10185227	Drosophila virilis	3069	0	0.99977843	0.00194	0.99999986	599.944923	223.101043	446.271463	125.600218
FBgn003843	Cad89D	10185240	Drosophila virilis	6220	0	NA	NA	0.00396983	2229.86828	5332.01751	9692.04908	5304.28326
FBgn003843	Cad89D	10185243	Drosophila grimshawi	947	3.00E-102	0.01103774	0.98086029	0.99999986	278.514577	422.820318	960.037707	736.156831
FBgn002050	Ag5r2	10185249	Drosophila erecta	822	1.00E-105	NA	NA	0.00561028	23564.2601	37589.1159	8894.20033	56995.7506
FBgn003693	CG14187	10185251	Drosophila virilis	725	1.00E-42	0.99977843	0.00391626	0.99999986	620.089059	288.375147	624.578571	176.770677

FBgn002675	XRCC1	10185370	Drosophila mojavensis	607	8.00E-08	0.0016915	0.98381899	0.99999986	916.996108	841.743674	2096.36775	2038.67761
FBgn003542	CG12017	10185430	Drosophila virilis	3202	5.00E-58	NA	NA	0.02781578	3491.9422	945.987392	9352.56041	673.356722
FBgn002733	jim	10185569	Drosophila grimshawi	2524	5.00E-30	0.99977843	0.08139124	0.99999986	24414.6929	34870.9853	19281.3449	37014.8493
FBgn003766	CG8420	10185572	Drosophila virilis	2708	0	0.99977843	0.00021186	0.99999986	17643.6357	6612.16934	13082.9063	6747.5228
FBgn008535	Diedel3	10185574	Drosophila mojavensis	501	5.00E-18	0.99977843	0.05172634	0.99999986	3267.72921	6098.74467	4939.20763	7986.0805
FBgn005319	dp	10185620	Drosophila pseudoobscur	4795	0	0.0329537	0.99279774	0.99999986	5778.73956	8468.09723	4349.88753	3207.45741
FBgn003741	Osi2	10185765	Drosophila mojavensis	1560	3.00E-120	NA	NA	0.00721795	565.787475	1328.86386	2146.73699	1009.4536
FBgn003507	CG9083	10185766	Drosophila melanogaster	427	3.00E-06	NA	NA	0.0004862	275.887081	244.534331	1573.53505	147.696552
FBgn026076	CG42562	10185864	Drosophila grimshawi	1227	4.00E-06	0.99977843	0.01210484	0.88420679	851.308708	1139.86123	587.305334	1995.6479
FBgn000563	lola	10185912	Drosophila pseudoobscur	822	2.00E-28	0.02621866	0.95894733	0.99999986	211.075513	293.246349	640.696728	583.808419
FBgn005353	lectin-37Db	10185934	Drosophila mojavensis	821	8.00E-19	NA	NA	0.00054222	2930.53389	1013.20998	426.123767	957.120176
FBgn005108	TwdlR	10186051	Drosophila grimshawi	1823	8.00E-77	0.54528317	0.00266954	0.99999986	331.94033	168.543583	900.602004	210.496661
FBgn003985	nyo	10186098	Drosophila virilis	936	7.00E-171	0.99977843	0.00379867	0.99999986	2680.92176	1390.241	4013.42101	1754.91415
FBgn003615	CG6163	10186449	Drosophila mojavensis	1150	4.00E-28	0.05577897	0.92732171	0.99999986	171.663073	193.873832	38.2806221	58.1482489
FBgn003315	CG12164	10186537	Drosophila melanogaster	1810	4.00E-141	NA	NA	1.67E-07	13609.5535	34821.2991	58026.3714	17195.6002
FBgn001557	alpha-Est4	10186544	Drosophila persimilis	833	5.00E-64	0.99977843	0.09933099	0.99999986	178.669729	318.576599	165.211106	473.326746
FBgn003249	CG16820	10186567	Drosophila virilis	1601	5.00E-107	0.99977843	0.06751974	0.99999986	3648.71613	6501.10594	4150.42534	6794.0414
FBgn005045	CG30458	10186613	Drosophila virilis	530	2.00E-08	3.77E-09	0.01947907	0.99999986	74.4457203	425.743039	4.02953917	12.7926148
FBgn003278	CG13084	10186623	Drosophila mojavensis	1947	5.00E-26	0.61777666	0.06480333	0.99999986	8653.2202	3557.92581	4049.68686	3300.49461
FBgn000553	Mbs	10186627	Drosophila virilis	954	5.00E-31	2.36E-12	0.98037139	0.99999986	3063.66035	3457.57905	684.014274	680.334512
FBgn000316	pum	10186637	Drosophila virilis	778	7.00E-11	0.99977843	0.07832005	0.99999986	9975.72653	7111.95465	10136.3058	5035.63835
FBgn004036	CG11382	10186706	Drosophila grimshawi	1141	3.00E-47	0.99977843	0.00211049	0.99999986	4888.01841	2503.79773	5233.36399	2281.73729
FBgn003137	CG15358	10186750	Drosophila grimshawi	737	2.00E-25	0.99977843	0.01449079	0.99999986	790.000468	1969.91401	770.649366	1311.82449
FBgn003807	CG14395	10186779	Drosophila mojavensis	4522	0	NA	NA	0	236.474641	2540.81887	6280.03679	1531.62488
FBgn003180	CG9500	10186879	Drosophila virilis	1053	2.00E-47	0.87980107	0.08607549	0.99999986	2521.52034	4048.94295	1612.82305	2945.79029
FBgn003304	CG7882	10186887	Drosophila virilis	1016	2.00E-76	0.00592133	0.94007076	0.99999986	103.348177	176.337506	476.493007	393.082162
FBgn002539	Mur2B	10186888	Drosophila virilis	1819	3.00E-17	0.99977843	4.93E-05	0.99999986	6458.3852	2319.6663	4076.88625	1816.55129
FBgn003980	CG15544	10186943	Drosophila virilis	2065	5.00E-101	0.99977843	0.00110243	0.99999986	3456.90892	6151.35365	2001.67358	5353.12779
FBgn003980	CG15544	10186946	Drosophila virilis	2628	8.00E-31	0.99977843	0.00038306	0.99999986	2711.57588	4714.34912	1492.94426	4636.74136
FBgn003026	Klp10A	10187007	Drosophila pseudoobscur	712	9.00E-05	0.01259018	0	0.99999986	0	459.841451	0	53.496389
FBgn026211	f	10187080	Drosophila mojavensis	1644	2.00E-92	NA	NA	0.00012106	183.924721	487.120181	1235.05376	298.881999
FBgn026211	f	10187081	Drosophila virilis	829	9.00E-52	NA	NA	0.04367785	293.403721	521.218594	1332.77008	483.793431
FBgn026211	f	10187082	Drosophila virilis	1121	7.00E-110	NA	NA	0.00045753	325.809506	765.752925	2019.80651	645.445562
FBgn003867	CG6026	10187087	Drosophila virilis	4813	0	0.14738909	0	0.10114685	11859.6412	1021.0039	3843.17298	1053.64627
FBgn003180	CG9500	10187100	Drosophila grimshawi	2400	1.00E-09	0.99977843	0.00311146	0.99999986	14242.7801	30934.08	12328.3751	22678.98
FBgn003921	CG13627	10187157	Drosophila mojavensis	1991	4.00E-166	0.92688259	3.66E-05	0.99999986	1467.01861	715.092426	2960.7039	790.816185
FBgn003137	CG15356	10187246	Drosophila virilis	1085	6.00E-77	0.99977843	0.05387551	0.99999986	4170.712	2835.03946	5589.97821	2675.98241
FBgn005037	CG30377	10187299	Drosophila grimshawi	1037	2.00E-54	0.99977843	0.04004047	0.99999986	5978.42926	4210.66685	7736.7152	3487.73197
FBgn000125	ImpE1	10187314	Drosophila virilis	1043	4.00E-94	0.04291548	0.00023274	0.99999986	3091.68697	772.572608	1008.39218	597.763998
FBgn000045	ect	10187316	Drosophila virilis	2279	6.00E-99	0.99977843	5.17E-10	0.99999986	5888.21856	1376.60163	4460.69986	1385.09129
FBgn003054	CG12481	10187373	Drosophila virilis	1369	6.00E-18	0.99977843	0.000106	0.99999986	19038.8361	44732.2463	17115.4676	38675.5633
FBgn005267	CG32676	10187376	Drosophila mojavensis	733	6.00E-12	0.99977843	0.09542442	0.99999986	14095.6403	10354.2266	16122.1862	8097.72514
FBgn026183	Msp-300	10187431	Drosophila virilis	582	1.00E-15	0.08538956	0.99333237	0.99999986	2614.35853	3112.69796	1763.93077	1388.58018
FBgn002608	tyf	10187523	Drosophila virilis	1367	4.00E-24	0.99977843	0.02982339	0.99999986	24589.8593	16518.2454	25289.3878	11982.0282
FBgn000052	dx	10187613	Drosophila mojavensis	620	4.00E-49	0.99977843	0.01817781	0.99999986	3637.33031	2327.46023	4874.73501	2120.08515
FBgn002893	CG16886	10187640	Drosophila grimshawi	2770	7.00E-60	NA	NA	0.00181416	955.532716	1328.86386	2871.04666	716.386426
FBgn026181	pico	10187784	Drosophila mojavensis	501	6.00E-10	0.99977843	0.00811598	0.99999986	7140.65833	3808.30558	6001.99859	2956.25697
FBgn002912	tyn	10187804	Drosophila virilis	3614	0	0.00240919	0.93568762	0.50180022	17399.2786	24339.447	56838.6647	32985.1757
FBgn002608	tyf	10187909	Drosophila grimshawi	1116	3.00E-61	0.99977843	0.00953238	0.99999986	30328.3106	18703.4665	30842.0928	14024.1947
FBgn003742	Osi17	10188066	Drosophila grimshawi	5056	5.00E-70	0.99977843	0.00095428	0.99999986	3021.62041	1045.35991	1706.50984	901.297857
FBgn003742	Osi17	10188067	Drosophila mojavensis	842	3.00E-79	0.99977843	0.00748433	0.99999986	457.184306	81.8361905	257.890507	131.415042
FBgn000386	tsh	10188123	Drosophila mojavensis	1852	9.00E-111	0.99977843	0.0605462	0.99999986	3421.87564	5569.73215	2883.13527	5298.46844
FBgn000386	tsh	10188126	Drosophila willistoni	1078	3.00E-05	0.99977843	0.04468242	0.99999986	1802.46226	3403.02159	1835.45509	3160.93881
FBgn000486	Eip78C	10188212	Drosophila virilis	600	8.00E-21	NA	NA	3.49E-09	183.048889	1548.06794	2359.29518	1187.38724
FBgn000486	Eip78C	10188213	Drosophila grimshawi	425	5.00E-50	NA	NA	0.00015284	374.856098	1486.69079	2412.68658	1325.78007
FBgn003343	Mmp2	10188242	Drosophila virilis	1999	5.00E-101	0.99977843	0.05360355	0.99999986	11527.7008	15661.8881	6899.57844	14961.5444
FBgn002041	Idgf2	10188246	Drosophila virilis	1085	2.00E-37	NA	NA	0.00647554	287.272897	1488.63927	1246.13499	1216.46137
FBgn002041	Idgf2	10188247	Drosophila virilis	1022	2.00E-101	0.99977843	0.05007331	0.99999986	580.676619	1444.79846	548.017327	847.801468
FBgn002041	Idgf2	10188248	Drosophila persimilis	479	6.00E-68	NA	NA	0.00679647	313.547857	1661.07982	1256.20884	1282.75037
FBgn002041	Idgf2	10188249	Drosophila simulans	647	2.00E-48	0.99977843	0.08401187	0.99999986	284.645401	943.064671	373.739758	472.163781
FBgn002041	Idgf2	10188250	Drosophila simulans	456	7.00E-49	NA	NA	0.01430239	274.135417	1304.50785	1015.44387	943.164597
FBgn003505	spz6	10188300	Drosophila grimshawi	1805	0	0.99977843	0.00448168	0.99999986	5386.36683	2508.66893	4954.31841	2573.6415

FBgn026578	CrebB	10188323	Drosophila grimshawi	670	8.00E-32	1.80E-12	0.99139633	0.99999986	3.50332802	2.92272109	232.705887	213.985556
FBgn005267	CG32676	10188325	Drosophila virilis	525	2.00E-19	0.99977843	0.08820359	0.99999986	8501.70126	5857.13306	9979.15375	5219.38682
FBgn000469	mus210	10188347	Drosophila virilis	961	5.00E-21	0.99977843	0.02528133	0.99999986	30470.1954	19020.0946	31071.7765	15647.6938
FBgn003331	CG8642	10188513	Drosophila grimshawi	1481	2.00E-55	0.99977843	0.03610918	0.99999986	494.845082	1147.65515	564.135483	1000.14988
FBgn000132	Kr	10188581	Drosophila virilis	2246	2.00E-167	0.99977843	1.43E-09	0.99999986	543.891675	2581.73696	800.87091	2623.64899
FBgn000132	Kr	10188585	Drosophila mojavensis	805	4.00E-24	0.99977843	3.29E-07	0.99999986	212.827177	1023.92662	273.001279	961.772036
FBgn003666	CG13025	10188666	Drosophila virilis	2431	9.00E-15	0.41366258	0.00089061	0.99999986	390.621074	1097.96889	742.442592	1667.69178
FBgn001560	toc	10188754	Drosophila mojavensis	321	3.00E-08	0.99977843	0.06803474	0.99999986	2546.91947	1603.59964	2379.44288	1196.69096
FBgn003833	CG6118	10188813	Drosophila ananassae	1316	1.00E-10	NA	NA	0.01430304	3827.38586	272.787302	778.708444	263.99305
FBgn003833	CG6118	10188817	Drosophila grimshawi	427	2.00E-33	NA	NA	0.00163865	3294.88	132.496689	581.261025	153.511377
FBgn003833	CG6118	10188818	Drosophila virilis	1501	1.00E-95	NA	NA	0.00140233	5268.1295	200.693515	1046.6728	232.592995
FBgn003833	CG6118	10188819	Drosophila grimshawi	808	2.00E-91	NA	NA	0.00592791	2794.77993	132.496689	581.261025	161.652132
FBgn002539	Mur2B	10188854	Drosophila grimshawi	2121	6.00E-89	0.0092099	0.01138335	0.99999986	46159.8499	24626.8479	23645.3358	12730.9776
FBgn003997	CG17018	10188917	Drosophila virilis	4801	0	0.99977843	0.01527312	0.99999986	40614.0817	26827.6569	47920.2872	21499.7335
FBgn025978	vfl	10188920	Drosophila mojavensis	1115	1.00E-91	0.99977843	0.00215151	0.99999986	15559.1556	9562.16916	19190.6803	7406.92394
FBgn000390	twi	10189055	Drosophila virilis	1865	3.00E-89	0.99977843	0.04487067	0.99999986	353.83613	923.579864	295.163744	516.35645
FBgn000338	shd	10189066	Drosophila virilis	4359	1.00E-125	0.99977843	0.09997413	0.99999986	1545.84349	3659.2468	2065.13882	2550.3822
FBgn003764	CG11966	10189068	Drosophila mojavensis	1789	1.00E-50	0.99977843	8.32E-14	0.99999986	1285.72138	215.30712	1057.75403	122.111323
FBgn003764	CG11966	10189069	Drosophila mojavensis	3164	8.00E-46	0.31739069	0	0.99999986	2138.78175	416.000635	1722.62799	162.815097
FBgn003764	CG11966	10189071	Drosophila mojavensis	732	1.00E-46	0.71100536	0.01294089	0.81220366	102.472345	2.92272109	128.945253	47.6815641
FBgn003764	CG11966	10189072	Drosophila mojavensis	962	5.00E-81	0.99977843	3.64E-10	0.99999986	1194.63485	184.131429	986.229711	222.126311
FBgn003647	Or71a	10189090	Drosophila pseudoobscur	2963	1.00E-06	1.48E-05	0.68643079	0.99999986	1601.89674	1979.65642	490.596394	707.082706
FBgn003603	CG16711	10189148	Drosophila virilis	1626	2.00E-35	0.99977843	0.08607549	0.99999986	9057.85459	6639.44807	11486.2014	5627.58753
FBgn003897	Pebp1	10189220	Drosophila virilis	460	5.00E-53	0.99977843	1.99E-05	0.99999986	10383.8642	26162.2507	8579.89627	20720.547
FBgn004385	slam	10189297	Drosophila virilis	5172	0	0.99977843	0.0533864	0.99999986	39922.1744	27518.3933	45987.1157	23037.1732
FBgn003335	CG8213	10189377	Drosophila virilis	417	2.00E-50	0.99977843	2.41E-05	0.99999986	442.295162	90.6043537	287.104666	47.6815641
FBgn025978	vfl	10189537	Drosophila mojavensis	628	1.00E-84	0.99977843	0.02407455	0.99999986	5548.39575	3451.73361	6078.55983	2895.78279
FBgn003315	CG1850	10189539	Drosophila virilis	4136	1.00E-91	0.03255138	6.72E-13	0.42463838	357743.216	936707.753	124504.701	799204.651
FBgn003383	CG10814	10189557	Drosophila virilis	1270	2.00E-10	0.00015355	0.71702305	0.11827751	2058.20521	1452.59238	379.784067	968.749826
FBgn005277	Muc4B	10189574	Drosophila mojavensis	973	2.00E-07	0.99977843	0.02527302	0.99999986	4619.13799	2514.51438	3550.02401	1900.28477
FBgn000064	Fcp3C	10189617	Drosophila virilis	882	3.00E-60	0.99977843	0.00560544	0.60865131	1050.12257	759.907483	1529.21011	388.430302
FBgn000302	ovo	10189647	Drosophila virilis	1141	2.00E-36	0.99977843	0.03116112	0.99999986	15953.28	11424.9167	19369.9948	8571.05188
FBgn002572	unc-13	10189668	Drosophila yakuba	2387	2.00E-14	0.99977843	0.0953442	0.99999986	1995.14531	3788.82077	1677.29568	2568.98964
FBgn008690	kis	10189742	Drosophila mojavensis	519	2.00E-35	0.80303591	0.05086988	0.99999986	10241.1036	7802.69107	9283.05086	4037.8144
FBgn003427	CG6385	10189762	Drosophila virilis	3064	0	0.99977843	0.00175188	0.99999986	4037.58554	7373.05107	2873.06143	6998.72323
FBgn005028	CG30280	10189795	Drosophila ananassae	826	3.00E-33	0.99977843	0.03088785	0.99999986	1712.25157	3721.59819	1964.40034	3088.83498
FBgn005028	CG30280	10189796	Drosophila ananassae	782	1.00E-31	0.99977843	0.07433469	0.99999986	1421.47534	2809.70921	1385.15409	2179.39637
FBgn005028	CG30280	10189797	Drosophila ananassae	488	3.00E-36	0.99977843	0.02090142	0.99999986	1206.8965	3446.8624	1356.94732	1796.78089
FBgn003016	CG1791	10189798	Drosophila ananassae	447	2.00E-34	0.99977843	0.04814095	0.99999986	666.508155	1662.05406	972.126324	1413.00245
FBgn001446	Cp7Fc	10189940	Drosophila mojavensis	793	3.00E-36	0.99977843	7.10E-05	0.99999986	13562.2586	5832.77705	10990.5681	4506.48929
FBgn000042	01-Dec	10189973	Drosophila virilis	2474	2.00E-86	NA	NA	5.47E-05	66468.6425	44187.6459	77362.1151	8750.14849
FBgn000042	01-Dec	10189977	Drosophila grimshawi	3201	4.00E-50	NA	NA	0.00064918	38166.1312	31979.4399	54773.5259	9470.02381
FBgn008690	sls	10189998	Drosophila grimshawi	2279	0	0.0006257	0.99774851	0.99999986	6586.25667	9028.28544	3935.85238	2915.5532
FBgn003120	Ir21a	10190019	Drosophila virilis	3179	1.00E-177	NA	NA	0.05793116	3697.76272	4144.4185	5758.21147	1890.98105
FBgn005110	CG31104	10190032	Drosophila virilis	390	2.00E-26	0.06531994	0.01146595	0.99999986	42.9157682	286.426667	13.0960023	51.170459
FBgn003976	CG15534	10190076	Drosophila virilis	2346	1.00E-152	0.99977843	0.02657718	0.99999986	5664.8814	8165.10848	3509.72862	8012.82869
FBgn003976	CG15534	10190078	Drosophila virilis	979	5.00E-105	0.99977843	0.02447365	0.99999986	2979.58048	4125.90794	1648.08152	4151.78497
FBgn008690	sls	10190118	Drosophila melanogaster	5856	0	0.00032719	0.94700803	0.99999986	12855.4622	16410.1047	6538.93468	6170.69217
FBgn008523	CG34205	10190135	Drosophila virilis	1376	8.00E-23	0.99977843	0.02713298	0.99999986	2549.54696	4118.11401	2090.32344	4397.17058
FBgn000465	fs(1)N	10190148	Drosophila virilis	7051	0	0.99977843	0.04073093	0.99999986	28348.0545	20422.0265	30174.1967	13860.2166
FBgn000292	ndl	10190234	Drosophila grimshawi	3167	0	0.99977843	0.07114343	0.86657833	8268.72995	7237.63166	9736.37401	3808.7103
FBgn003765	CG11982	10190350	Drosophila buzzatii	4980	2.00E-07	9.48E-06	0.98787604	0.99999986	229.467985	189.976871	694.088122	936.186807
FBgn000292	ndl	10190351	Drosophila virilis	5449	0	0.18655954	0.04468242	0.99999986	10440.7933	8736.98757	9205.48223	3545.88022
FBgn001368	mt:ND5	10190381	Drosophila virilis	1853	0	0.99977843	0.00215926	0.99999986	273324.397	569045.028	303828.261	593138.887
FBgn001368	mt:ND2	10190384	Drosophila immigrans	1250	5.00E-74	0.99977843	1.21E-13	0.99999986	46750.1607	197960.771	34303.4669	140432.673
FBgn026235	CG43055	10190396	Drosophila pseudoobscur	645	1.00E-33	0.99977843	0.05533086	0.99999986	12740.7282	27103.3669	19120.1634	26103.9119
FBgn003949	grass	10190398	Drosophila virilis	1176	3.00E-52	0.99977843	0.07114343	0.60472951	36155.221	39873.7096	27748.4141	71443.2645
FBgn008704	alphaTub67C	10190404	Drosophila grimshawi	1707	0	0.99977843	0.00259121	0.99999986	38498.9474	23540.5699	49112.0234	19762.2639
FBgn003966	Diedel	10190412	Drosophila erecta	651	7.00E-17	0.99977843	1.53E-05	0.99999986	4032.33055	10651.3699	4733.70114	11507.5385
FBgn000125	ImpL1	10190427	Drosophila grimshawi	1882	2.00E-70	NA	NA	0.00358937	31934.5865	1406.80308	5348.20586	1021.08325
FBgn003699	mag	10190442	Drosophila virilis	1734	7.00E-173	0.99977843	0.04468242	0.99999986	5832.16532	8079.37533	4958.34795	10973.7375
FBgn002994	CG15034	10190444	Drosophila virilis	533	6.00E-07	0.99977843	0.00558797	0.99999986	1615.91005	2600.24753	1475.81872	3934.31052

FBgn000092	fs(1)Ya	10190445	Drosophila virilis	2723	3.00E-166	0.99977843	0.01165572	0.99999986	22782.1421	15093.9059	29232.2919	12580.9551
FBgn003659	CG13047	10190457	Drosophila mojavensis	621	4.00E-19	NA	NA	0.00274063	1267.32891	3009.42848	3828.06221	1861.90693
FBgn003698	zye	10190475	Drosophila mojavensis	1392	1.00E-139	0.75966793	0.05155132	0.52759162	8032.25531	8997.10975	3475.47753	9514.21648
FBgn003635	CG14107	10190491	Drosophila virilis	1734	4.00E-17	NA	NA	0	13438.7663	353.649252	423.101613	565.200979
FBgn003966	Diedel	10190514	Drosophila mojavensis	590	2.00E-17	0.01872412	0.13522617	0.20431911	353.83613	1168.1142	1430.4864	1403.69873
FBgn003365	TwdlBeta	10190517	Drosophila mojavensis	919	2.00E-44	NA	NA	4.42E-13	543.015843	2099.48798	4360.96876	684.986372
FBgn003054	CG13403	10190526	Drosophila virilis	709	7.00E-13	0.99977843	0.09450747	0.99999986	935.38858	1801.37043	1030.55464	1678.15846
FBgn008530	Cpr65Ay	10190550	Drosophila virilis	571	1.00E-26	NA	NA	3.70E-11	348.581138	553.368526	23.1698502	1624.66207
FBgn000459	Eig71Ed	10190584	Drosophila virilis	772	6.00E-12	NA	NA	1.85E-08	3776.5876	32.149932	9.06646313	9.30371982
FBgn002956	CG11381	10190657	Drosophila grimshawi	1481	1.00E-20	0.68556883	0.00024153	0.99999986	1763.92566	874.867846	1452.64887	417.504427
FBgn003054	CG11585	10190672	Drosophila virilis	1179	3.00E-19	0.99977843	0.03367417	0.99999986	412.516874	730.680272	264.9422	718.712356
FBgn003593	CG13308	10190867	Drosophila virilis	821	9.00E-26	0.00833107	0.73982881	0.99999986	234.722977	176.337506	61.4504723	29.0741244
FBgn003813	CG15887	10190958	Drosophila mojavensis	647	4.00E-23	0.05273123	0.70926212	0.39056552	251.363785	36.0468934	10.0738479	20.9333696