

**Table S1: DAVID functional annotation chart of differential IR genes identified in the head tissues during aging of male *Drosophila***

| GO ID      | GOTERM_BP_DIRECT                             | Count | %     | P-value     | Fold Enrichment | Benjamini value | Time Point  |
|------------|--|-------|-------|-------------|-----------------|-----------------|-------------|
| GO:0006470 | protein dephosphorylation                    | 4     | 4.598 | 0.026034496 | 6.170594837     | 0.999829848     | D10_vs._D20 |
| GO:0008360 | regulation of cell shape                     | 4     | 4.598 | 0.030280902 | 5.817989418     | 0.993642907     |             |
| GO:0007268 | chemical synaptic transmission               | 5     | 4.762 | 0.002054225 | 9.154179154     | 0.504015851     | D10_vs._D30 |
| GO:1903432 | regulation of TORC1 signaling                | 2     | 1.905 | 0.024356156 | 80.55677656     | 0.985066276     |             |
| GO:0035071 | salivary gland cell autophagic cell death    | 4     | 3.810 | 0.025961211 | 6.19667512      | 0.949707797     |             |
| GO:0045214 | sarcomere organization                       | 10    | 3.484 | 9.63E-09    | 15.14600551     | 6.50E-06        | D10_vs._D50 |
| GO:0006874 | cellular calcium ion homeostasis             | 6     | 2.091 | 1.22E-05    | 18.17520661     | 0.004100704     |             |
| GO:0007498 | mesoderm development                         | 9     | 3.136 | 7.28E-05    | 6.389721074     | 0.016236766     |             |
| GO:0030239 | myofibril assembly                           | 5     | 1.742 | 2.54E-04    | 15.14600551     | 0.041958111     |             |
| GO:0006936 | muscle contraction                           | 4     | 1.394 | 3.41E-04    | 25.96458087     | 0.044994846     |             |
| GO:0007517 | muscle organ development                     | 8     | 2.787 | 0.002246202 | 4.379567858     | 0.223518112     |             |
| GO:0060047 | heart contraction                            | 3     | 1.045 | 0.004579433 | 27.26280992     | 0.357637458     |             |
| GO:0055085 | transmembrane transport                      | 15    | 5.226 | 0.004745326 | 2.350242234     | 0.330577506     |             |
| GO:0035556 | intracellular signal transduction            | 8     | 2.787 | 0.006684952 | 3.599050814     | 0.395319322     |             |
| GO:0008340 | determination of adult lifespan              | 10    | 3.484 | 0.012544767 | 2.672824502     | 0.573493602     |             |
| GO:0072347 | response to anesthetic                       | 3     | 1.045 | 0.015558164 | 15.14600551     | 0.617952437     |             |
| GO:0007616 | long-term memory                             | 6     | 2.091 | 0.020665531 | 3.786501377     | 0.691062224     |             |
| GO:0006468 | protein phosphorylation                      | 12    | 4.181 | 0.032489639 | 2.049835332     | 0.820031749     |             |
| GO:0031122 | cytoplasmic microtubule organization         | 4     | 1.394 | 0.034990849 | 5.507638367     | 0.820446437     |             |
| GO:0007220 | Notch receptor processing                    | 3     | 1.045 | 0.041634931 | 9.087603306     | 0.852465389     |             |
| GO:0016059 | deactivation of rhodopsin mediated signaling | 3     | 1.045 | 0.041634931 | 9.087603306     | 0.852465389     |             |
| GO:0007525 | somatic muscle development                   | 4     | 1.394 | 0.046779008 | 4.912218003     | 0.867495719     |             |
| GO:0007527 | adult somatic muscle development             | 3     | 1.045 | 0.046909357 | 8.519628099     | 0.851575622     |             |
| GO:0008582 | regulation of synaptic growth                | 4     | 1.394 | 0.049994815 | 4.782949108     | 0.853875147     |             |

**Table S1: Highly conserved human orthologs of fly differential IR genes**

| S/No | Fly GeneID  | Fly Symbol | HGNCID | Human Symbol   | DIOPT Score | Weighted Score | Rank |
|------|-------------|------------|--------|----------------|-------------|----------------|------|
| 1    | FBgn0000228 | Bsg25D     | 14906  | NIN            | 7           | 6.83           | high |
| 2    | FBgn0000316 | cin        | 15465  | GPHN           | 14          | 13.74          | high |
| 3    | FBgn0000319 | Chc        | 2092   | CLTC           | 14          | 13.8           | high |
| 4    | FBgn0000464 | Lar        | 9668   | PTPRD          | 14          | 13.8           | high |
| 5    | FBgn0000482 | dor        | 15972  | VPS18          | 15          | 14.75          | high |
| 6    | FBgn0000667 | Actn       | 164    | ACTN2          | 14          | 13.75          | high |
| 7    | FBgn0001202 | hook       | 23576  | HOOK3          | 15          | 14.75          | high |
| 8    | FBgn0002431 | hyd        | 16806  | UBR5           | 15          | 14.75          | high |
| 9    | FBgn0002566 | lt         | 12713  | VPS41          | 13          | 12.79          | high |
| 10   | FBgn0002643 | mam        | 13632  | MAML1          | 2           | 2              | high |
| 11   | FBgn0002774 | mle        | 2750   | DHX9           | 15          | 14.75          | high |
| 12   | FBgn0002891 | mus205     | 9968   | REV3L          | 12          | 11.73          | high |
| 13   | FBgn0003011 | ort        | 4329   | <i>GLRB</i>    | 5           | 4.84           | high |
| 14   | FBgn0003016 | osp        | 30321  | MPRIP          | 9           | 8.88           | high |
| 15   | FBgn0003068 | per        | 8847   | PER3           | 6           | 6.01           | high |
| 16   | FBgn0003071 | Pfk        | 8877   | PFKM           | 14          | 13.82          | high |
| 17   | FBgn0003141 | pr         | 9689   | PTS            | 14          | 13.85          | high |
| 18   | FBgn0003218 | rdgB       | 21044  | PITPNM2        | 14          | 13.8           | high |
| 19   | FBgn0003656 | sws        | 24768  | PNPLA7         | 14          | 13.8           | high |
| 20   | FBgn0003744 | trc        | 17847  | STK38          | 14          | 13.8           | high |
| 21   | FBgn0003748 | Treh       | 12266  | TREH           | 14          | 13.8           | high |
| 22   | FBgn0004028 | wupA       | 11946  | TNNI2          | 10          | 9.96           | high |
| 23   | FBgn0004103 | Pp1-87B    | 9281   | PPP1CA         | 13          | 12.75          | high |
| 24   | FBgn0004169 | up         | 11949  | TNNT2          | 9           | 8.77           | high |
| 25   | FBgn0004369 | Ptp99A     | 9671   | PTPRG          | 9           | 8.93           | high |
| 26   | FBgn0004507 | GlyP       | 9726   | PYGM           | 15          | 14.75          | high |
| 27   | FBgn0004598 | Fur2       | 8747   | PCSK5          | 10          | 9.76           | high |
| 28   | FBgn0004698 | Xpc        | 12816  | XPC            | 11          | 10.69          | high |
| 29   | FBgn0004795 | retn       | 3031   | ARID3A         | 11          | 10.83          | high |
| 30   | FBgn0004797 | mdy        | 2843   | DGAT1          | 13          | 12.77          | high |
| 31   | FBgn0004914 | Hnf4       | 5026   | HNF4G          | 13          | 12.74          | high |
| 32   | FBgn0004919 | gol        | 23138  | RNF150         | 12          | 11.73          | high |
| 33   | FBgn0005666 | bt         | 12403  | TTN            | 9           | 8.86           | high |
| 34   | FBgn0010051 | Itp-r83A   | 6180   | ITPR1          | 15          | 14.75          | high |
| 35   | FBgn0010235 | Klc        | 6387   | KLC1           | 13          | 12.87          | high |
| 36   | FBgn0010278 | Ssrp       | 11327  | SSRP1          | 14          | 13.72          | high |
| 37   | FBgn0010434 | cora       | 3379   | EPB41L2        | 8           | 7.87           | high |
|      | FBgn0010434 | cora       | 3378   | <i>EPB41L1</i> | 8           | 7.78           | high |
|      | FBgn0010434 | cora       | 3380   | <i>EPB41L3</i> | 8           | 7.77           | high |
| 38   | FBgn0010438 | mtSSB      | 11317  | SSBP1          | 15          | 14.75          | high |
| 39   | FBgn0010551 | Phb2       | 30306  | PHB2           | 14          | 13.8           | high |
| 40   | FBgn0010750 | atms       | 25459  | PAF1           | 14          | 13.8           | high |
| 41   | FBgn0010905 | Spn        | 14946  | PPP1R9A        | 9           | 8.78           | high |
| 42   | FBgn0011206 | bol        | 14273  | BOLL           | 11          | 10.78          | high |
| 43   | FBgn0011227 | ox         | 30863  | UQCR10         | 11          | 10.89          | high |
| 44   | FBgn0011286 | RyR        | 10484  | RYR2           | 14          | 13.8           | high |
|      | FBgn0011286 | RyR        | 10483  | <i>RYR1</i>    | 14          | 13.75          | high |

| S/No | Fly GeneID  | Fly Symbol | HGNCID | Human Symbol    | DIOPT Score | Weighted Score | Rank |
|------|-------------|------------|--------|-----------------|-------------|----------------|------|
| 45   | FBgn0011296 | l(2)efl    | 2389   | CRYAB           | 12          | 11.95          | high |
| 46   | FBgn0011455 | ND-SGDH    | 7700   | NDUFB5          | 13          | 12.73          | high |
| 47   | FBgn0011745 | Arp1       | 167    | ACTR1A          | 14          | 13.8           | high |
| 48   | FBgn0013762 | Cdk5       | 1774   | CDK5            | 14          | 13.8           | high |
| 49   | FBgn0013972 | Gycalpa99E | 4684   | GUCY1A2         | 13          | 12.8           | high |
| 50   | FBgn0014863 | Mlp84B     | 2472   | CSRP3           | 10          | 9.68           | high |
| 51   | FBgn0014906 | Hydr2      | 18717  | ABHD2           | 14          | 13.8           | high |
| 52   | FBgn0015034 | Cyp4e1     | 2644   | CYP4B1          | 4           | 3.81           | high |
|      | FBgn0015034 | Cyp4e1     | 13265  | <i>CYP4F11</i>  | 4           | 3.81           | high |
|      | FBgn0015034 | Cyp4e1     | 26820  | <i>CYP4F22</i>  | 4           | 3.81           | high |
|      | FBgn0015034 | Cyp4e1     | 18857  | <i>CYP4F12</i>  | 4           | 3.81           | high |
|      | FBgn0015513 | mbc        | 2987   | <i>DOCK1</i>    | 12          | 11.86          | high |
| 53   | FBgn0015513 | mbc        | 2988   | DOCK2           | 12          | 11.79          | high |
| 54   | FBgn0015791 | Rab14      | 16524  | RAB14           | 13          | 12.8           | high |
| 55   | FBgn0016696 | Pitslre    | 1729   | CDK11B          | 10          | 9.88           | high |
| 56   | FBgn0016756 | Usp47      | 20076  | USP47           | 13          | 12.8           | high |
| 57   | FBgn0017578 | Max        | 6913   | MAX             | 13          | 12.8           | high |
| 58   | FBgn0019947 | Psn        | 9509   | PSEN2           | 13          | 12.79          | high |
| 59   | FBgn0020370 | TppII      | 12016  | TPP2            | 15          | 14.75          | high |
| 60   | FBgn0020647 | KrT95D     | 23794  | PACS2           | 13          | 12.79          | high |
| 61   | FBgn0022029 | l(2)k01209 | 15938  | UCKL1           | 13          | 12.82          | high |
| 62   | FBgn0022359 | Sodh-2     | 11184  | SORD            | 15          | 14.75          | high |
| 63   | FBgn0023172 | RhoGEF2    | 14193  | ARHGEF12        | 10          | 9.89           | high |
|      | FBgn0023172 | RhoGEF2    | 14580  | <i>ARHGEF11</i> | 10          | 9.89           | high |
| 64   | FBgn0023213 | eIF4G      | 3298   | EIF4G3          | 11          | 10.74          | high |
| 65   | FBgn0023458 | Rbcn-3A    | 2938   | DMXL2           | 11          | 10.93          | high |
| 66   | FBgn0023549 | Mct1       | 23094  | SLC16A12        | 7           | 6.89           | high |
| 67   | FBgn0024689 | fws        | 14857  | COG5            | 13          | 12.8           | high |
| 68   | FBgn0024811 | Crk        | 2362   | CRK             | 14          | 13.8           | high |
| 69   | FBgn0025592 | Gk1        | 4289   | GK              | 12          | 11.79          | high |
|      | FBgn0025592 | Gk1        | 4291   | <i>GK2</i>      | 12          | 11.79          | high |
| 70   | FBgn0025684 | MFS18      | 16192  | SLC17A9         | 15          | 14.75          | high |
| 71   | FBgn0025687 | LKRSDH     | 17366  | AASS            | 15          | 14.75          | high |
| 72   | FBgn0026086 | Adar       | 226    | ADARB1          | 13          | 12.9           | high |
| 73   | FBgn0026439 | Eaat1      | 10941  | SLC1A3          | 10          | 9.78           | high |
| 74   | FBgn0026666 | MagR       | 28660  | ISCA1           | 14          | 13.8           | high |
| 75   | FBgn0027529 | tapas      | 30831  | TDRD7           | 8           | 7.83           | high |
| 76   | FBgn0027565 | CG5498     | 28439  | CHMP7           | 12          | 11.67          | high |
| 77   | FBgn0027596 | Kank       | 19309  | KANK1           | 11          | 10.79          | high |
| 78   | FBgn0027657 | glob1      | 16505  | CYGB            | 7           | 6.74           | high |
| 79   | FBgn0027779 | VhaSFD     | 18303  | ATP6V1H         | 15          | 14.75          | high |
| 80   | FBgn0027865 | Tsp96F     | 1701   | CD81            | 7           | 6.87           | high |
| 81   | FBgn0027948 | mmps       | 28959  | CKAP5           | 12          | 11.94          | high |
| 82   | FBgn0028411 | Nxt1       | 15913  | NXT1            | 14          | 13.8           | high |
| 83   | FBgn0028425 | Jhl-21     | 11063  | SLC7A5          | 10          | 9.79           | high |
| 84   | FBgn0028427 | Ilk        | 6040   | ILK             | 12          | 11.78          | high |
| 85   | FBgn0028429 | l-2        | 9288   | PPP1R2          | 12          | 11.74          | high |
| 86   | FBgn0028552 | gammaSnap  | 7642   | NAPG            | 14          | 13.8           | high |

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|------|-------------|------------|--------|--------------|-------------|----------------|------|
| 87   | FBgn0028646 | aralar1    | 10982  | SLC25A12     | 15          | 14.75          | high |
| 88   | FBgn0028663 | VhaM9.7-b  | 863    | ATP6V0E1     | 11          | 10.84          | high |
| 89   | FBgn0028670 | Vha100-2   | 866    | ATP6V0A4     | 9           | 8.79           | high |
| 90   | FBgn0028703 | Nhe3       | 11079  | SLC9A6       | 14          | 13.8           | high |
| 91   | FBgn0028704 | Nckx30C    | 10976  | SLC24A2      | 12          | 11.85          | high |
| 92   | FBgn0029088 | disp       | 19711  | DISP1        | 15          | 14.75          | high |
| 93   | FBgn0029174 | FKBP59     | 3720   | FKBP4        | 13          | 12.76          | high |
| 94   | FBgn0029820 | CG16721    | 25655  | TCP11L1      | 13          | 12.79          | high |
| 95   | FBgn0030013 | Gllspla2   | 17934  | PLA2G3       | 9           | 8.78           | high |
| 96   | FBgn0030081 | CG7246     | 18279  | UTP6         | 14          | 13.8           | high |
| 97   | FBgn0030228 | BTBD9      | 21228  | BTBD9        | 14          | 13.8           | high |
| 98   | FBgn0030286 | CG1657     | 23375  | GAPVD1       | 13          | 12.85          | high |
| 99   | FBgn0030528 | CG11095    | 8055   | NUDT8        | 13          | 12.79          | high |
| 100  | FBgn0030555 | Fbxl4      | 13601  | FBXL4        | 14          | 13.8           | high |
| 101  | FBgn0030670 | Pis        | 1769   | CDIPT        | 15          | 14.75          | high |
| 102  | FBgn0030685 | Graf       | 17073  | ARHGAP26     | 14          | 13.74          | high |
| 103  | FBgn0030745 | CG4239     | 28462  | TMEM38A      | 14          | 13.75          | high |
| 104  | FBgn0030791 | CG9132     | 24539  | NECAP1       | 13          | 12.84          | high |
|      | FBgn0030791 | CG9132     | 25528  | NECAP2       | 13          | 12.8           | high |
| 105  | FBgn0030887 | CG6867     | 29514  | GLDN         | 5           | 5.09           | high |
| 106  | FBgn0030897 | Frq1       | 3953   | NCS1         | 15          | 14.75          | high |
| 107  | FBgn0030954 | CCKLR-17D3 | 1571   | CCKBR        | 10          | 9.82           | high |
|      | FBgn0030954 | CCKLR-17D3 | 1570   | CCKAR        | 10          | 9.77           | high |
| 108  | FBgn0031021 | ND-18      | 7711   | NDUFS4       | 14          | 13.75          | high |
| 109  | FBgn0031030 | Tao        | 29259  | TAOK1        | 13          | 12.87          | high |
|      | FBgn0031030 | Tao        | 18133  | TAOK3        | 13          | 12.72          | high |
| 110  | FBgn0031057 | Ubqn       | 12508  | UBQLN1       | 14          | 13.8           | high |
| 111  | FBgn0031081 | Nep3       | 3146   | ECE1         | 12          | 11.83          | high |
| 112  | FBgn0031092 | CG9577     | 3149   | ECH1         | 15          | 14.75          | high |
| 113  | FBgn0031304 | CG4552     | 25622  | TBC1D23      | 14          | 13.74          | high |
| 114  | FBgn0031322 | CG5001     | 14887  | DNAJB5       | 13          | 12.87          | high |
|      | FBgn0031322 | CG5001     | 5270   | DNAJB1       | 13          | 12.8           | high |
| 115  | FBgn0031456 | Trn-SR     | 17103  | TNPO3        | 12          | 11.78          | high |
| 116  | FBgn0031604 | Elp3       | 20696  | ELP3         | 14          | 13.8           | high |
| 117  | FBgn0031662 | CG3792     | 7207   | MPDU1        | 14          | 13.8           | high |
| 118  | FBgn0031814 | retm       | 29032  | SEC14L5      | 14          | 13.72          | high |
| 119  | FBgn0031869 | CG18304    | 21494  | SOGA3        | 4           | 3.82           | high |
| 120  | FBgn0031952 | cdc14      | 1718   | CDC14A       | 12          | 11.79          | high |
|      | FBgn0031952 | cdc14      | 1719   | CDC14B       | 12          | 11.74          | high |
| 121  | FBgn0032036 | CG13384    | 19660  | SLC36A4      | 14          | 13.8           | high |
|      | FBgn0032036 | CG13384    | 18761  | SLC36A1      | 14          | 13.75          | high |
| 122  | FBgn0032129 | jp         | 14203  | JPH3         | 11          | 10.79          | high |
| 123  | FBgn0032156 | CG13124    | 24030  | MIF4GD       | 5           | 4.95           | high |
|      | FBgn0032156 | CG13124    | 23925  | CTIF         | 5           | 4.88           | high |
| 124  | FBgn0032196 | CG5708     | 6644   | LMO4         | 8           | 7.86           | high |
| 125  | FBgn0032297 | CG17124    | 9057   | PPP1R14B     | 8           | 7.85           | high |
| 126  | FBgn0032381 | Mal-B1     | 11025  | SLC3A1       | 12          | 11.76          | high |
| 127  | FBgn0032455 | Pih1D1     | 26075  | PIH1D1       | 4           | 3.93           | high |

| S/No | Fly GeneID  | Fly Symbol | HGNCID | Human Symbol   | DIOPT Score | Weighted Score | Rank |
|------|-------------|------------|--------|----------------|-------------|----------------|------|
| 128  | FBgn0032470 | CG5142     | 26425  | TTC30B         | 13          | 12.9           | high |
| 129  | FBgn0032744 | Ttc19      | 26006  | TTC19          | 13          | 12.77          | high |
| 130  | FBgn0032797 | Hasp       | 2334   | CR1            | 3           | 3.06           | high |
|      | FBgn0032797 | Hasp       | 4883   | <i>CFH</i>     | 3           | 2.94           | high |
| 131  | FBgn0032859 | Arpc2      | 705    | ARPC2          | 14          | 13.8           | high |
| 132  | FBgn0032988 | Tif-IA     | 30346  | RRN3           | 14          | 13.8           | high |
| 133  | FBgn0033000 | CG14464    | 26798  | ARL14EP        | 9           | 8.83           | high |
| 134  | FBgn0033015 | d4         | 9964   | DPF2           | 12          | 11.8           | high |
| 135  | FBgn0033194 | Vps13      | 1908   | VPS13A         | 14          | 13.8           | high |
| 136  | FBgn0033205 | CG2064     | 17964  | RDH11          | 9           | 8.73           | high |
| 137  | FBgn0033247 | Nup44A     | 30379  | SEH1L          | 14          | 13.8           | high |
| 138  | FBgn0033266 | Socs44A    | 19383  | SOCS1          | 7           | 6.75           | high |
| 139  | FBgn0033382 | Hydr1      | 18718  | ABHD3          | 15          | 14.75          | high |
| 140  | FBgn0033639 | CG9003     | 24679  | FBXL20         | 12          | 11.78          | high |
| 141  | FBgn0033672 | rho-7      | 18253  | PARL           | 12          | 11.81          | high |
| 142  | FBgn0033734 | CG8520     | 16411  | AFG1L          | 15          | 14.75          | high |
| 143  | FBgn0033809 | CG4630     | 8495   | SLC22A14       | 4           | 4.04           | high |
|      | FBgn0033809 | CG4630     | 10967  | <i>SLC22A3</i> | 4           | 3.96           | high |
| 144  | FBgn0033844 | bbc        | 24289  | CEPT1          | 13          | 12.85          | high |
| 145  | FBgn0034002 | CG8079     | 24684  | AGGF1          | 12          | 11.8           | high |
| 146  | FBgn0034067 | CG8399     | 27622  | FRRS1          | 15          | 14.75          | high |
| 147  | FBgn0034225 | veil       | 8021   | NT5E           | 13          | 12.67          | high |
| 148  | FBgn0034275 | CG5002     | 14471  | SLC26A11       | 14          | 13.75          | high |
| 149  | FBgn0034308 | CG10915    | 25330  | CTTNBP2NL      | 11          | 10.76          | high |
| 150  | FBgn0034417 | CG15117    | 4696   | GUSB           | 15          | 14.75          | high |
| 151  | FBgn0034418 | CG15118    | 27880  | ANKRD13D       | 14          | 13.8           | high |
| 152  | FBgn0034420 | CG10737    | 1266   | C2CD2          | 4           | 3.94           | high |
| 153  | FBgn0034451 | TBCB       | 1989   | TBCB           | 11          | 10.79          | high |
| 154  | FBgn0034598 | CG4266     | 20959  | SCAF8          | 11          | 10.69          | high |
|      | FBgn0034598 | CG4266     | 19304  | <i>SCAF4</i>   | 11          | 10.69          | high |
| 155  | FBgn0034605 | CG15661    | 12530  | UGT1A1         | 6           | 5.99           | high |
| 156  | FBgn0034655 | CG10307    | 28228  | LRRC39         | 2           | 2.11           | high |
|      | FBgn0034655 | CG10307    | 37215  | <i>LRRC10B</i> | 2           | 2.08           | high |
| 157  | FBgn0034660 | lox2       | 6666   | LOXL2          | 11          | 10.78          | high |
|      | FBgn0034660 | lox2       | 13869  | <i>LOXL3</i>   | 11          | 10.73          | high |
| 158  | FBgn0034876 | wmd        | 30796  | STRAP          | 13          | 12.7           | high |
| 159  | FBgn0034897 | Sesn       | 23060  | SESN3          | 14          | 13.8           | high |
| 160  | FBgn0034943 | Fmo-1      | 3773   | FMO5           | 9           | 8.76           | high |
| 161  | FBgn0034951 | CG3860     | 15761  | OSBPL2         | 13          | 12.79          | high |
| 162  | FBgn0034958 | CG3907     | 29051  | EFCAB14        | 4           | 3.86           | high |
| 163  | FBgn0035026 | Fcp1       | 2498   | CTDP1          | 11          | 10.83          | high |
| 164  | FBgn0035050 | ST6Gal     | 10860  | ST6GAL1        | 9           | 8.83           | high |
|      | FBgn0035050 | ST6Gal     | 10861  | <i>ST6GAL2</i> | 9           | 8.78           | high |
| 165  | FBgn0035060 | Eps-15     | 24634  | EPS15L1        | 13          | 12.84          | high |
| 166  | FBgn0035064 | TyrRS-m    | 24249  | YARS2          | 15          | 14.75          | high |
| 167  | FBgn0035146 | CG13893    | 18655  | SEC14L3        | 12          | 11.7           | high |
| 168  | FBgn0035147 | Gale       | 4116   | GALE           | 14          | 13.8           | high |
| 169  | FBgn0035205 | CG2469     | 16850  | CTR9           | 12          | 11.81          | high |

| S/No | Fly GeneID  | Fly Symbol  | HGNCID | Human Symbol | DIOPT Score | Weighted Score | Rank |
|------|-------------|-------------|--------|--------------|-------------|----------------|------|
| 170  | FBgn0035227 | lml1        | 18423  | DEPDC5       | 13          | 12.84          | high |
| 171  | FBgn0035232 | CG12099     | 10055  | RNF10        | 14          | 13.75          | high |
| 172  | FBgn0035252 | CG7970      | 9716   | PXMP2        | 7           | 7.05           | high |
| 173  | FBgn0035287 | CG13937     | 15993  | CHST8        | 5           | 4.95           | high |
| 174  | FBgn0035388 | CG2162      | 23512  | R3HCC1L      | 8           | 7.71           | high |
| 175  | FBgn0035416 | gry         | 25751  | TRAPPC11     | 12          | 11.78          | high |
| 176  | FBgn0035445 | CG12014     | 5389   | IDS          | 15          | 14.75          | high |
| 177  | FBgn0035526 | CG1316      | 24468  | RBM45        | 13          | 12.7           | high |
| 178  | FBgn0035528 | CG15012     | 30590  | TMEM50A      | 14          | 13.8           | high |
| 179  | FBgn0035649 | CG10483     | 12827  | XPR1         | 15          | 14.75          | high |
| 180  | FBgn0035827 | Srp9        | 11304  | SRP9         | 13          | 12.8           | high |
| 181  | FBgn0035978 | UGP         | 12527  | UGP2         | 12          | 11.73          | high |
| 182  | FBgn0035986 | CG4022      | 25210  | PIH1D2       | 4           | 4.09           | high |
| 183  | FBgn0035989 | CG3967      | 21186  | ATAT1        | 10          | 9.74           | high |
| 184  | FBgn0035993 | Nf-YA       | 7804   | NFYA         | 10          | 9.88           | high |
| 185  | FBgn0036133 | CG7638      | 28483  | TMEM161B     | 14          | 13.8           | high |
| 186  | FBgn0036141 | wls         | 30238  | WLS          | 14          | 13.8           | high |
| 187  | FBgn0036286 | CG10616     | 24299  | ODR4         | 9           | 8.83           | high |
| 188  | FBgn0036369 | CG10089     | 16077  | DUSP22       | 11          | 10.69          | high |
| 189  | FBgn0036515 | AIMP2       | 20609  | AIMP2        | 13          | 12.8           | high |
| 190  | FBgn0036534 | DCP2        | 24452  | DCP2         | 10          | 9.74           | high |
| 191  | FBgn0036545 | GXIVsPLA2   | 18554  | PLA2G12A     | 13          | 12.74          | high |
| 192  | FBgn0036569 | IleRS-m     | 29685  | IARS2        | 13          | 12.82          | high |
| 193  | FBgn0037084 | Syx6        | 11441  | STX6         | 11          | 10.88          | high |
| 194  | FBgn0037098 | Wnk         | 14540  | WNK1         | 9           | 8.95           | high |
|      | FBgn0037098 | Wnk         | 14543  | WNK3         | 9           | 8.95           | high |
| 195  | FBgn0037313 | CG1161      | 18823  | TMEM9        | 14          | 13.8           | high |
| 196  | FBgn0037339 | Pi4KIIalpha | 30031  | PI4K2A       | 11          | 10.89          | high |
| 197  | FBgn0037344 | CG2926      | 24351  | PHRF1        | 11          | 10.88          | high |
| 198  | FBgn0037382 | Hpr1        | 19070  | THOC1        | 13          | 12.79          | high |
| 199  | FBgn0037513 | pyd3        | 16297  | UPB1         | 15          | 14.75          | high |
| 200  | FBgn0037530 | EMC1        | 28957  | EMC1         | 13          | 12.79          | high |
| 201  | FBgn0037574 | Coq2        | 25223  | COQ2         | 14          | 13.8           | high |
| 202  | FBgn0037655 | CG11984     | 20589  | KCMF1        | 11          | 10.81          | high |
| 203  | FBgn0037709 | CG8199      | 986    | BCKDHA       | 12          | 11.89          | high |
| 204  | FBgn0037756 | CG8507      | 6701   | LRPAP1       | 14          | 13.85          | high |
| 205  | FBgn0037892 | mRpL40      | 14491  | MRPL40       | 14          | 13.8           | high |
| 206  | FBgn0037913 | fabp        | 9117   | PMP2         | 11          | 10.76          | high |
|      | FBgn0037913 | fabp        | 3562   | FABP7        | 11          | 10.73          | high |
|      | FBgn0037950 | HisCl1      | 4329   | GLRB         | 5           | 4.85           | high |
| 207  | FBgn0038181 | CG9297      | 11295  | SRL          | 10          | 9.79           | high |
| 208  | FBgn0038224 | ATPsynE     | 846    | ATP5ME       | 12          | 11.82          | high |
| 209  | FBgn0038302 | CG4210      | 23160  | SAT2         | 14          | 13.85          | high |
| 210  | FBgn0038564 | CG7785      | 14297  | SPRYD7       | 14          | 13.8           | high |
| 211  | FBgn0038693 | unc79       | 19966  | UNC79        | 14          | 13.85          | high |
| 212  | FBgn0038925 | Cchl        | 4837   | HCCS         | 13          | 12.8           | high |
| 213  | FBgn0039135 | CG13603     | 20137  | TMEM179      | 14          | 13.8           | high |
| 214  | FBgn0039141 | spas        | 11233  | SPAST        | 15          | 14.75          | high |

| S/No | Fly GeneID  | Fly Symbol | HGNCID | Human Symbol  | DIOPT Score | Weighted Score | Rank |
|------|-------------|------------|--------|---------------|-------------|----------------|------|
| 215  | FBgn0039153 | GatB       | 8849   | GATB          | 13          | 12.79          | high |
| 216  | FBgn0039215 | CG6695     | 17731  | CLASRP        | 13          | 12.8           | high |
| 217  | FBgn0039229 | Saf-B      | 10520  | SAFB          | 11          | 10.94          | high |
|      | FBgn0039229 | Saf-B      | 20709  | <i>SLTM</i>   | 11          | 10.83          | high |
| 218  | FBgn0039241 | CG11089    | 794    | ATIC          | 14          | 13.74          | high |
| 219  | FBgn0039258 | beta4GalT7 | 930    | B4GALT7       | 14          | 13.74          | high |
| 220  | FBgn0039259 | CG11781    | 28430  | EMC6          | 13          | 12.79          | high |
| 221  | FBgn0039357 | CG4743     | 20661  | SLC25A26      | 15          | 14.75          | high |
| 222  | FBgn0039562 | Gp93       | 12028  | HSP90B1       | 14          | 13.82          | high |
| 223  | FBgn0039732 | CG15525    | 28332  | CCDC12        | 12          | 11.89          | high |
| 224  | FBgn0039890 | CG2316     | 66     | ABCD2         | 15          | 14.75          | high |
| 225  | FBgn0039902 | Zip102B    | 20182  | SLC39A9       | 14          | 13.74          | high |
| 226  | FBgn0039907 | Igs        | 23688  | BCL9L         | 2           | 2.05           | high |
| 227  | FBgn0039908 | Asator     | 19140  | TTBK1         | 8           | 7.87           | high |
|      | FBgn0039908 | Asator     | 19141  | <i>TTBK2</i>  | 8           | 7.87           | high |
| 228  | FBgn0039916 | Ekar       | 4579   | GRIK1         | 8           | 7.88           | high |
| 229  | FBgn0039969 | Fis1       | 21689  | FIS1          | 12          | 11.89          | high |
| 230  | FBgn0039994 | conu       | 21035  | ARHGAP18      | 10          | 9.88           | high |
| 231  | FBgn0040230 | dbo        | 25056  | KLHL20        | 14          | 13.85          | high |
| 232  | FBgn0040337 | CG3021     | 25481  | TRMU          | 14          | 13.74          | high |
| 233  | FBgn0040394 | CG16903    | 20569  | CCNL1         | 12          | 11.79          | high |
| 234  | FBgn0041205 | key        | 5961   | IKBKG         | 4           | 3.96           | high |
| 235  | FBgn0041210 | HDAC4      | 14063  | HDAC4         | 10          | 9.99           | high |
|      | FBgn0041210 | HDAC4      | 14068  | <i>HDAC5</i>  | 10          | 9.99           | high |
| 236  | FBgn0041775 | tral       | 24489  | LSM14A        | 12          | 11.8           | high |
| 237  | FBgn0042135 | CG18812    | 18010  | GDAP2         | 14          | 13.8           | high |
| 238  | FBgn0043070 | MESK2      | 14462  | NDRG3         | 13          | 12.84          | high |
| 239  | FBgn0044048 | Ilp5       | 6081   | INS           | 3           | 3.01           | high |
| 240  | FBgn0046247 | CG5938     | 1935   | CHIC2         | 14          | 13.8           | high |
| 241  | FBgn0050021 | metro      | 26542  | MPP7          | 13          | 12.89          | high |
| 242  | FBgn0050051 | Tmem18     | 25257  | TMEM18        | 12          | 11.79          | high |
| 243  | FBgn0050109 | CG30109    | 26937  | TRIAP1        | 14          | 13.75          | high |
| 244  | FBgn0050438 | CG30438    | 12555  | UGT8          | 10          | 9.84           | high |
| 245  | FBgn0050491 | CG30491    | 19978  | RDH13         | 9           | 8.8            | high |
| 246  | FBgn0051472 | sgll       | 30260  | PNPO          | 14          | 13.7           | high |
| 247  | FBgn0051619 | nolo       | 14632  | ADAMTSL1      | 7           | 6.76           | high |
| 248  | FBgn0052068 | Adi1       | 30576  | ADI1          | 14          | 13.8           | high |
| 249  | FBgn0052085 | CG32085    | 14150  | FBXL16        | 10          | 9.75           | high |
| 250  | FBgn0053051 | CG33051    | 28466  | POLR3GL       | 8           | 8              | high |
|      | FBgn0053051 | CG33051    | 30075  | <i>POLR3G</i> | 8           | 7.87           | high |
| 251  | FBgn0053519 | Unc-89     | 16901  | SPEG          | 6           | 5.72           | high |
| 252  | FBgn0053774 | CG33774    | 32483  | OST4          | 6           | 5.92           | high |
| 253  | FBgn0058196 | Maf1       | 24966  | MAF1          | 12          | 11.78          | high |
| 254  | FBgn0062449 | CG13197    | 3066   | DUSP11        | 14          | 13.75          | high |
| 255  | FBgn0085377 | CG34348    | 26510  | TMEM68        | 15          | 14.75          | high |
| 256  | FBgn0085446 | CG34417    | 32394  | SMTNL1        | 6           | 5.97           | high |
|      | FBgn0085446 | CG34417    | 11126  | <i>SMTN</i>   | 6           | 5.97           | high |
| 257  | FBgn0086656 | shrb       | 16171  | CHMP4B        | 14          | 13.8           | high |

| S/No | Fly GeneID  | Fly Symbol | HGNCID | Human Symbol | DIOPT Score | Weighted Score | Rank |
|------|-------------|------------|--------|--------------|-------------|----------------|------|
| 258  | FBgn0086757 | cbs        | 4424   | GOLGA1       | 11          | 10.89          | high |
| 259  | FBgn0086785 | Vps36      | 20312  | VPS36        | 14          | 13.8           | high |
| 260  | FBgn0086906 | sls        | 19194  | HMCN1        | 3           | 2.71           | high |
| 261  | FBgn0250789 | alpha-Spec | 11273  | SPTAN1       | 15          | 14.75          | high |
| 262  | FBgn0250819 | CG33521    | 28142  | LIMD2        | 2           | 1.95           | high |
| 263  | FBgn0250851 | CG33981    | 24540  | ANAPC13      | 12          | 11.79          | high |
| 264  | FBgn0250906 | Pgk        | 8896   | PGK1         | 14          | 13.8           | high |
| 265  | FBgn0259214 | PMCA       | 816    | ATP2B3       | 14          | 13.8           | high |
| 266  | FBgn0259234 | Camta      | 18806  | CAMTA1       | 11          | 10.79          | high |
| 267  | FBgn0259678 | sqa        | 29826  | MYLK3        | 5           | 4.94           | high |
| 268  | FBgn0259979 | CG17337    | 24437  | CNDP2        | 15          | 14.75          | high |
| 269  | FBgn0259991 | CG42488    | 28211  | TMEM141      | 7           | 6.93           | high |
| 270  | FBgn0260439 | Pp2A-29B   | 9302   | PPP2R1A      | 15          | 14.75          | high |
| 271  | FBgn0260467 | CG7071     | 18085  | TMEM199      | 11          | 10.86          | high |
| 272  | FBgn0260639 | gammaTub2  | 12419  | TUBG2        | 14          | 13.8           | high |
|      | FBgn0260639 | gammaTub2  | 12417  | TUBG1        | 14          | 13.75          | high |
| 273  | FBgn0260935 | Vps15      | 8982   | PIK3R4       | 15          | 14.75          | high |
| 274  | FBgn0260970 | Ubr3       | 30467  | UBR3         | 13          | 12.9           | high |
| 275  | FBgn0261436 | DhpD       | 4212   | GDA          | 15          | 14.75          | high |
| 276  | FBgn0261451 | trol       | 5273   | HSPG2        | 9           | 8.72           | high |
| 277  | FBgn0261532 | cdm        | 16853  | IPO13        | 14          | 13.8           | high |
| 278  | FBgn0261565 | Lmpt       | 3703   | FHL2         | 4           | 3.98           | high |
| 279  | FBgn0261625 | GLS        | 4331   | GLS          | 14          | 13.8           | high |
| 280  | FBgn0261674 | CG42709    | 32443  | LRTM2        | 2           | 1.92           | high |
|      | FBgn0261674 | CG42709    | 14965  | LRR3         | 2           | 1.87           | high |
|      | FBgn0261674 | CG42709    | 28105  | LRR3B        | 2           | 1.87           | high |
| 281  | FBgn0261794 | kcc        | 10913  | SLC12A4      | 15          | 14.75          | high |
| 282  | FBgn0262169 | magu       | 20323  | SMOC2        | 10          | 9.78           | high |
| 283  | FBgn0262579 | Ect4       | 17074  | SARM1        | 7           | 6.87           | high |
| 284  | FBgn0263006 | SERCA      | 811    | ATP2A1       | 14          | 13.82          | high |
| 285  | FBgn0263396 | sqd        | 5034   | HNRNPAB      | 13          | 12.65          | high |
| 286  | FBgn0263593 | Lpin       | 14451  | LPIN3        | 14          | 13.75          | high |
| 287  | FBgn0263980 | CG43729    | 28423  | STAC3        | 5           | 4.96           | high |
| 288  | FBgn0264324 | spg        | 2989   | DOCK3        | 14          | 13.75          | high |
| 289  | FBgn0264491 | how        | 21100  | QKI          | 13          | 12.74          | high |
| 290  | FBgn0264493 | rdx        | 11254  | SPOP         | 10          | 9.74           | high |
| 291  | FBgn0264607 | CaMKII     | 1462   | CAMK2D       | 15          | 14.75          | high |
| 292  | FBgn0264695 | Mhc        | 7577   | MYH7         | 14          | 13.8           | high |
| 293  | FBgn0265045 | Strn-Mlck  | 7590   | MYLK         | 6           | 5.83           | high |
| 294  | FBgn0265767 | zyd        | 10977  | SLC24A3      | 7           | 7.09           | high |
| 295  | FBgn0265998 | Doa        | 2069   | CLK2         | 11          | 10.69          | high |
| 296  | FBgn0266346 | CngB       | 2151   | CNGB1        | 12          | 11.74          | high |
| 297  | FBgn0266917 | CG16941    | 10765  | SF3A1        | 14          | 13.8           | high |
| 298  | FBgn0267398 | Yeti       | 1873   | CFDP1        | 11          | 10.83          | high |

**Note:** 1) Only "high" ranking human orthologs in DIOPT were analyzed.

2) "Orange" boxed fly genes have multiple human orthologs that were labelled as red.

3) "Red" human orthologs were not counted to prevent over-representation.

4) GLRB was counted once. There are 298 highly conserved human orthologs of fly IR genes.

**Table S1: Highly conserved human orthologs of fly IR genes that overlapped with curated AD genes**

|        |       |        |       |       |        |        |        |        |
|--------|-------|--------|-------|-------|--------|--------|--------|--------|
| ADARB1 | CFDP1 | CRYAB  | FHL2  | HOOK3 | KLC1   | PLA2G3 | RYR2   | TTBK1  |
| ADI1   | CLK2  | DGAT1  | FIS1  | HSPG2 | LMO4   | PPP1CA | SLC1A3 | UBQLN1 |
| AIMP2  | COG5  | DOCK2  | FKBP4 | ILK   | LRPAP1 | PSEN2  | SLC9A6 | UBR5   |
| ATAT1  | CR1   | DUSP22 | GPHN  | INS   | PER3   | PTS    | SOCS1  | WNK1   |
| CDK5   | CRK   | ECE1   | HDAC4 | ITPR1 | PHB2   | RBM45  | SPAST  | XPR1   |

|               | IR  | non-IR | total |
|---------------|-----|--------|-------|
| <b>AD</b>     | 45  | 2241   | 2286  |
| <b>non-AD</b> | 253 | 18541  | 18794 |
| <b>total</b>  | 298 | 20782  | 21080 |

**Chi square + Yates correction**

2-tail = 0.022

1-tail = 0.011

**Table S1: Pathway analysis of differential IR genes in aging *Drosophila***

| ID       | Pathway Name                                | Gene # | P-value  | FDR      |
|----------|---|--------|----------|----------|
| dme01100 | Metabolic pathways                          | 50     | 3.33E-03 | 2.40E-01 |
| dme00564 | Glycerophospholipid metabolism              | 7      | 6.98E-03 | 2.40E-01 |
| dme00040 | Pentose and glucuronate interconversions    | 6      | 0.00853  | 2.40E-01 |
| dme00052 | Galactose metabolism                        | 5      | 9.82E-03 | 2.40E-01 |
| dme00592 | alpha-Linolenic acid metabolism             | 3      | 1.01E-02 | 2.40E-01 |
| dme00565 | Ether lipid metabolism                      | 4      | 1.14E-02 | 2.40E-01 |
| dme00590 | Arachidonic acid metabolism                 | 3      | 2.17E-02 | 3.90E-01 |
| dme00500 | Starch and sucrose metabolism               | 4      | 2.97E-02 | 4.67E-01 |
| dme00983 | Drug metabolism - other enzymes             | 5      | 4.70E-02 | 6.58E-01 |
| P00003   | Alzheimer disease-amyloid secretase pathway | 4      | 4.44E-03 | 3.86E-01 |
| P00019   | Endothelin signaling pathway                | 5      | 1.95E-02 | 8.49E-01 |

**Table S1: Fly Differential retained introns (D10 versus D20)**

| S/N | Gene       | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D20 IR ratio | p-value     |
|-----|------------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 1   | Adar       | FBgn0026086 | X   | 1780244      | 1780330    | 0.13303718   | 0.044459717  | 0.030233393 |
| 2   | AGO2       | FBgn0087035 | 3L  | 15560116     | 15560207   | 0.141795     | 0.079338741  | 0.027288527 |
| 3   | alpha-Spec | FBgn0250789 | 3L  | 1779310      | 1779384    | 0.04091218   | 0.100731213  | 0.01668034  |
| 4   | aralar1    | FBgn0028646 | 3R  | 30446503     | 30446563   | 0.08432606   | 0.176623504  | 0.009595397 |
| 5   | Arp1       | FBgn0011745 | 3R  | 12693155     | 12693214   | 0.04760963   | 0.12957997   | 0.046817528 |
| 6   | Arcp2      | FBgn0032859 | 2L  | 20422411     | 20422468   | 0.24370048   | 0.084283702  | 0.042156663 |
| 7   | beta4GalT7 | FBgn0039258 | 3R  | 25023466     | 25023527   | 0.04566581   | 0.257639098  | 0.044992848 |
| 8   | BTBD9      | FBgn0030228 | X   | 10769293     | 10769347   | 0.03936022   | 0.219085844  | 0.039562815 |
| 9   | Camta      | FBgn0259234 | 2R  | 9471756      | 9471818    | 0.21389755   | 0.071168205  | 0.032876165 |
| 10  | cbs        | FBgn0086757 | 2R  | 13453030     | 13453088   | 0.10093505   | 0.301990489  | 0.031237141 |
| 11  | CCHa1      | FBgn0038199 | 3R  | 14093308     | 14096595   | 0.25413881   | 0.477188845  | 0.049557694 |
| 12  | CCKLR-17D3 | FBgn0030954 | X   | 18766169     | 18766231   | 0.18105649   | 0.460043977  | 0.033357099 |
| 13  | cdc14      | FBgn0031952 | 2L  | 7804915      | 7805059    | 0.15034926   | 0.028211774  | 0.037577293 |
| 14  | cdm        | FBgn0261532 | 3R  | 18180625     | 18180684   | 0.1048585    | 0.20199857   | 0.021846648 |
| 15  | CG10089    | FBgn0036369 | 3L  | 13466888     | 13466943   | 0.24945662   | 0.422887547  | 0.027216531 |
| 16  | CG10184    | FBgn0039094 | 3R  | 23603762     | 23603827   | 0.19673342   | 0.297847355  | 0.04884591  |
| 17  | CG10307    | FBgn0034655 | 2R  | 21689868     | 21689926   | 0.15626255   | 0.427127034  | 0.013225944 |
| 18  | CG10352    | FBgn0030348 | X   | 11876199     | 11876255   | 0.2561428    | 0.114654343  | 0.047124311 |
| 19  | CG10483    | FBgn0035649 | 3L  | 5918165      | 5918359    | 0.095217     | 0.262804507  | 0.047834388 |
| 20  | CG10616    | FBgn0036286 | 3L  | 12471929     | 12472021   | 0.04468189   | 0.252862536  | 0.036304012 |
| 21  | CG11095    | FBgn0030528 | X   | 13812045     | 13812111   | 0.1422769    | 0.512125488  | 0.021060803 |
| 22  | CG11147    | FBgn0031734 | 2L  | 5734493      | 5734557    | 0.12693743   | 0.019686052  | 0.014129928 |
| 23  | CG11474    | FBgn0034688 | 2R  | 22073067     | 22073211   | 0.11705576   | 0.33665991   | 0.011252011 |
| 24  | CG11781    | FBgn0039259 | 3R  | 25024743     | 25024799   | 0.07492884   | 0.222628135  | 0.032804631 |
| 25  | CG11984    | FBgn0037655 | 3R  | 9011252      | 9011362    | 0.11219586   | 0.04279358   | 0.046358227 |
| 26  | CG12090    | FBgn0035227 | 3L  | 1523969      | 1524026    | 0.05243554   | 0.114823009  | 0.04487556  |
| 27  | CG1316     | FBgn0035526 | 3L  | 4284990      | 4285052    | 0.20050619   | 0.105309354  | 0.018462065 |
| 28  | CG15117    | FBgn0034417 | 2R  | 19123232     | 19123294   | 0.27134399   | 0.117526308  | 0.044642728 |
| 29  | CG15118    | FBgn0034418 | 2R  | 19135625     | 19135684   | 0.12263056   | 0.02226711   | 0.02934284  |
| 30  | CG1572     | FBgn0030309 | X   | 11556111     | 11556183   | 0.05168231   | 0.114022614  | 0.04094168  |
| 31  | CG16941    | FBgn0266917 | 3R  | 17001806     | 17001863   | 0.12856138   | 0.321129076  | 0.030513812 |
| 32  | CG2926     | FBgn0037344 | 3R  | 5580045      | 5580114    | 0.20369057   | 0.079854142  | 0.017735738 |
| 33  | CG31109    | FBgn0051109 | 3R  | 25053974     | 25054041   | 0.18267068   | 0.414337549  | 0.027672872 |
| 34  | CG32068    | FBgn0052068 | 3L  | 10663568     | 10663649   | 0.06769361   | 0.1448302    | 0.021089188 |
| 35  | CG33051    | FBgn0053051 | 3L  | 17426856     | 17426925   | 0.05443066   | 0.285104797  | 0.04827475  |
| 36  | CG33981    | FBgn0250851 | 2R  | 17775874     | 17775933   | 0.0550132    | 0.156372554  | 0.029091784 |
| 37  | CG3792     | FBgn0031662 | 2L  | 4977685      | 4977747    | 0.06788382   | 0.201853854  | 0.027871881 |
| 38  | CG3907     | FBgn0034958 | 2R  | 24021541     | 24021789   | 0.06217053   | 0.142804885  | 0.033241722 |
| 39  | CG4210     | FBgn0038302 | 3R  | 15214365     | 15214425   | 0.04723628   | 0.243152285  | 0.049596383 |
| 40  | CG42593    | FBgn0260970 | X   | 7950784      | 7950862    | 0.18296248   | 0.061939935  | 0.039314101 |
| 41  | CG44153    | FBgn0265002 | 2L  | 10068355     | 10068635   | 0.13173071   | 0.30000679   | 0.049668662 |
| 42  | CG5282     | FBgn0036986 | 3L  | 20424844     | 20424897   | 0.05961522   | 0.185994645  | 0.01770263  |
| 43  | CG7246     | FBgn0030081 | X   | 9079174      | 9079245    | 0.07089384   | 0.394409973  | 0.048804269 |
| 44  | CG7785     | FBgn0038564 | 3R  | 18021819     | 18022105   | 0.08710862   | 0.248238584  | 0.045648303 |

| S/N | Gene       | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D20 IR ratio | p-value     |
|-----|------------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 45  | CG8079     | FBgn0034002 | 2R  | 15223159     | 15223220   | 0.17818025   | 0.035301389  | 0.048500253 |
| 46  | CG8121     | FBgn0037680 | 3R  | 9336252      | 9336482    | 0.29704992   | 0.169329154  | 0.042859235 |
| 47  | CG9312     | FBgn0038179 | 3R  | 13766021     | 13766105   | 0.16722499   | 0.26657758   | 0.02990564  |
| 48  | CG9717     | FBgn0039789 | 3R  | 30585220     | 30585288   | 0.20481567   | 0.040303338  | 0.049962146 |
| 49  | cin        | FBgn0000316 | X   | 256641       | 256761     | 0.09852993   | 0.250056975  | 0.022929331 |
| 50  | DhpD       | FBgn0261436 | 3R  | 4228421      | 4228479    | 0.07083374   | 0.162928737  | 0.043604659 |
| 51  | Dip-B      | FBgn0000454 | 3R  | 13784259     | 13784316   | 0.07712572   | 0.162625239  | 0.018507764 |
| 52  | dmpd       | FBgn0033486 | 2R  | 10119727     | 10119791   | 0.06967947   | 0.18766964   | 0.04457774  |
| 53  | Eaat1      | FBgn0026439 | 2L  | 9339803      | 9339865    | 0.08459772   | 0.133792397  | 0.043826448 |
| 54  | eIF4G      | FBgn0023213 | 4   | 916059       | 916120     | 0.10298416   | 0.020744211  | 0.040872205 |
| 55  | Elp3       | FBgn0031604 | 2L  | 4445136      | 4445192    | 0.11196398   | 0.33016084   | 0.043909522 |
| 56  | Eps-15     | FBgn0035060 | 2R  | 24774505     | 24774576   | 0.02396657   | 0.11427426   | 0.040636304 |
| 57  | Eps-15     | FBgn0035060 | 2R  | 24774813     | 24774907   | 0.13808731   | 0.027211245  | 0.048459584 |
| 58  | Fur2       | FBgn0004598 | X   | 16379847     | 16379921   | 0.14264043   | 0.049646091  | 0.037224784 |
| 59  | GlyP       | FBgn0004507 | 2L  | 2136644      | 2136730    | 0.07290588   | 0.11561538   | 0.048497649 |
| 60  | gol        | FBgn0004919 | 2R  | 25075338     | 25075396   | 0.12558695   | 0.203906804  | 0.048819786 |
| 61  | Graf       | FBgn0030685 | X   | 15753836     | 15753908   | 0.06448328   | 0.200170631  | 0.020038024 |
| 62  | GstT4      | FBgn0030484 | X   | 13408791     | 13408862   | 0.13299239   | 0.211164439  | 0.040742351 |
| 63  | Gyk        | FBgn0025592 | 3L  | 202429       | 202488     | 0.05275712   | 0.175748429  | 0.01629959  |
| 64  | HisCl1     | FBgn0037950 | 3R  | 11787948     | 11788021   | 0.38320832   | 0.173624371  | 0.027724767 |
| 65  | Ilk        | FBgn0028427 | 3L  | 21217732     | 21217790   | 0.1591719    | 0.070027607  | 0.042599871 |
| 66  | ird1       | FBgn0260935 | 3R  | 9243046      | 9243101    | 0.0435478    | 0.273034916  | 0.027976194 |
| 67  | Itp-r83A   | FBgn0010051 | 3R  | 5537325      | 5537385    | 0.16025403   | 0.027952577  | 0.028580332 |
| 68  | key        | FBgn0041205 | 2R  | 24786543     | 24786601   | 0.14779026   | 0.264155353  | 0.020955349 |
| 69  | l(2)k01209 | FBgn0022029 | 2R  | 17424759     | 17424818   | 0.11997783   | 0.237410348  | 0.049267579 |
| 70  | l(2)SH0834 | FBgn0267365 | 2L  | 10311784     | 10311898   | 0.07308742   | 0.194896563  | 0.046047749 |
| 71  | Lar        | FBgn0000464 | 2L  | 19714989     | 19715760   | 0.17652888   | 0.08273375   | 0.048889254 |
| 72  | LKR        | FBgn0025687 | 2L  | 7791876      | 7791938    | 0.22428617   | 0.041940983  | 0.043403915 |
| 73  | Max        | FBgn0017578 | 3L  | 19263524     | 19263839   | 0.17074661   | 0.066974794  | 0.03209057  |
| 74  | mbc        | FBgn0015513 | 3R  | 23800188     | 23800250   | 0.14137423   | 0.028383109  | 0.04560538  |
| 75  | mdy        | FBgn0004797 | 2L  | 16826422     | 16826482   | 0.03179694   | 0.17298234   | 0.034041673 |
| 76  | mtSSB      | FBgn0010438 | 3R  | 16205148     | 16205215   | 0.2497372    | 0.044000356  | 0.044461975 |
| 77  | mus205     | FBgn0002891 | 2R  | 7794417      | 7794474    | 0.45671004   | 0.077176517  | 0.044005735 |
| 78  | Obp69a     | FBgn0011279 | 3L  | 12396739     | 12396792   | 0.06869193   | 0.151106424  | 0.038382469 |
| 79  | Phb2       | FBgn0010551 | 2R  | 18820838     | 18821040   | 0.12578243   | 0.216225994  | 0.048767845 |
| 80  | Pitslre    | FBgn0016696 | 3L  | 20776053     | 20776173   | 0.05655866   | 0.120212901  | 0.022971356 |
| 81  | PMCA       | FBgn0259214 | 4   | 349424       | 349480     | 0.05088741   | 0.102787091  | 0.033715117 |
| 82  | Rab14      | FBgn0015791 | 2L  | 14357937     | 14358005   | 0.04241647   | 0.102440027  | 0.019719483 |
| 83  | Rbcn-3A    | FBgn0023458 | X   | 6241664      | 6241727    | 0.04839372   | 0.138655738  | 0.028246891 |
| 84  | rdgB       | FBgn0003218 | X   | 13773753     | 13773805   | 0.12186564   | 0.024073467  | 0.041817318 |
| 85  | spg        | FBgn0264324 | 3R  | 28865867     | 28865928   | 0.1526615    | 0.053763802  | 0.049080009 |
| 86  | ST6Gal     | FBgn0035050 | 2R  | 24692260     | 24692322   | 0.25981245   | 0.114629413  | 0.048694469 |
| 87  | UGP        | FBgn0035978 | 3L  | 9352543      | 9352601    | 0.04382223   | 0.124540896  | 0.006774187 |
| 88  | wls        | FBgn0036141 | 3L  | 11167608     | 11167818   | 0.22424949   | 0.590092304  | 0.030294598 |

**Table S1: Fly Differential retained introns (D10 versus D30)**

| S/N | Gene        | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D30 IR ratio | p-value     |
|-----|-------------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 1   | Aats-tyr-m  | FBgn0035064 | 2R  | 24782840     | 24782892   | 0.16052025   | 0.374624297  | 0.04924425  |
| 2   | Ack-like    | FBgn0263998 | 2R  | 13143317     | 13143374   | 0.36006659   | 0.064646149  | 0.042734749 |
| 3   | alpha-Est3  | FBgn0015571 | 3R  | 7539501      | 7539562    | 0.17802641   | 0.383239723  | 0.012729911 |
| 4   | aralar1     | FBgn0028646 | 3R  | 30446503     | 30446563   | 0.08432606   | 0.173849063  | 0.01196308  |
| 5   | betaTub97EF | FBgn0003890 | 3R  | 27967201     | 27967268   | 0.03239882   | 0.170619595  | 0.043590625 |
| 6   | Bsg25D      | FBgn0000228 | 2L  | 5272928      | 5272985    | 0.16512923   | 0.032549972  | 0.045181829 |
| 7   | BTBD9       | FBgn0030228 | X   | 10769293     | 10769347   | 0.03936022   | 0.216424387  | 0.041486422 |
| 8   | CCHa1       | FBgn0038199 | 3R  | 14093308     | 14096595   | 0.25413881   | 0.520936249  | 0.024780517 |
| 9   | cdm         | FBgn0261532 | 3R  | 18180625     | 18180684   | 0.1048585    | 0.221402374  | 0.009286375 |
| 10  | CG10184     | FBgn0039094 | 3R  | 23603113     | 23603353   | 0.17807342   | 0.283695354  | 0.046876374 |
| 11  | CG10184     | FBgn0039094 | 3R  | 23603762     | 23603827   | 0.19673342   | 0.336286836  | 0.011540714 |
| 12  | CG10249     | FBgn0027596 | 2R  | 14903564     | 14903630   | 0.1224762    | 0.286590396  | 0.019262101 |
| 13  | CG10307     | FBgn0034655 | 2R  | 21689868     | 21689926   | 0.15626255   | 0.370696878  | 0.036220475 |
| 14  | CG10508     | FBgn0037060 | 3L  | 21214097     | 21214150   | 0.05062172   | 0.149224425  | 0.027371187 |
| 15  | CG10616     | FBgn0036286 | 3L  | 12471929     | 12472021   | 0.04468189   | 0.235716625  | 0.04483969  |
| 16  | CG11089     | FBgn0039241 | 3R  | 24880746     | 24880805   | 0.06122286   | 0.105375869  | 0.044455642 |
| 17  | CG11474     | FBgn0034688 | 2R  | 22073067     | 22073211   | 0.11705576   | 0.288932869  | 0.032652956 |
| 18  | CG12014     | FBgn0035445 | 3L  | 3379571      | 3379622    | 0.05552598   | 0.307115958  | 0.040656208 |
| 19  | CG12090     | FBgn0035227 | 3L  | 1523969      | 1524026    | 0.05243554   | 0.11646585   | 0.04114061  |
| 20  | CG12099     | FBgn0035232 | 3L  | 1556217      | 1556271    | 0.08359188   | 0.165509075  | 0.023462609 |
| 21  | CG1316      | FBgn0035526 | 3L  | 4284990      | 4285052    | 0.20050619   | 0.091441864  | 0.010800201 |
| 22  | CG13305     | FBgn0035921 | 3L  | 8645084      | 8645167    | 0.14650963   | 0.479594803  | 0.040349614 |
| 23  | CG13841     | FBgn0040588 | 3R  | 22767581     | 22767647   | 0.02662796   | 0.131082773  | 0.045669844 |
| 24  | CG13893     | FBgn0035146 | 3L  | 600664       | 600726     | 0.06129878   | 0.198970477  | 0.018447048 |
| 25  | CG15117     | FBgn0034417 | 2R  | 19123232     | 19123294   | 0.27134399   | 0.100375891  | 0.049242199 |
| 26  | CG15237     | FBgn0033104 | 2R  | 6809356      | 6809423    | 0.03296612   | 0.181247274  | 0.040339188 |
| 27  | CG16941     | FBgn0266917 | 3R  | 17002028     | 17002150   | 0.14410321   | 0.330815424  | 0.042477269 |
| 28  | CG17005     | FBgn0032109 | 2L  | 9328992      | 9329078    | 0.12632745   | 0.337379839  | 0.038742473 |
| 29  | CG17124     | FBgn0032297 | 2L  | 10746078     | 10755903   | 0.1560831    | 0.253580258  | 0.041937337 |
| 30  | CG17324     | FBgn0027074 | 2L  | 18822171     | 18822256   | 0.52174761   | 0.157508889  | 0.029392206 |
| 31  | CG18812     | FBgn0042135 | 2R  | 7728957      | 7729015    | 0.05887158   | 0.149268926  | 0.02477588  |
| 32  | CG2064      | FBgn0033205 | 2R  | 7666016      | 7666145    | 0.14305637   | 0.262911275  | 0.044526603 |
| 33  | CG3021      | FBgn0040337 | X   | 1027546      | 1027634    | 0.11824255   | 0.345884687  | 0.037381565 |
| 34  | CG30427     | FBgn0043792 | 2R  | 24929718     | 24929771   | 0.05637281   | 0.175577541  | 0.023626364 |
| 35  | CG31321     | FBgn0051321 | 3R  | 14313607     | 14313818   | 0.13144364   | 0.273946931  | 0.024788405 |
| 36  | CG33774     | FBgn0053774 | 2R  | 9400068      | 9400256    | 0.03451959   | 0.186213917  | 0.039429206 |
| 37  | CG34348     | FBgn0085377 | X   | 11343912     | 11343975   | 0.48822886   | 0.2733877    | 0.025607401 |
| 38  | CG3726      | FBgn0029824 | X   | 5938960      | 5939038    | 0.23693862   | 0.079446111  | 0.033324342 |
| 39  | CG3792      | FBgn0031662 | 2L  | 4977685      | 4977747    | 0.06788382   | 0.186848252  | 0.044444473 |
| 40  | CG3967      | FBgn0035989 | 3L  | 9418999      | 9419094    | 0.04799105   | 0.136502058  | 0.04126456  |
| 41  | CG4022      | FBgn0035986 | 3L  | 9409432      | 9409519    | 0.37982354   | 0.065713754  | 0.044974554 |
| 42  | CG42235     | FBgn0250757 | 3R  | 25918367     | 25918431   | 0.1804433    | 0.535020852  | 0.043639276 |
| 43  | CG4266      | FBgn0034598 | 2R  | 21163695     | 21163753   | 0.03174291   | 0.157321949  | 0.047152859 |
| 44  | CG5414      | FBgn0036569 | 3L  | 16102730     | 16102785   | 0.06976341   | 0.37674924   | 0.046804724 |

| S/N | Gene        | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D30 IR ratio | p-value     |
|-----|-------------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 45  | CG5463      | FBgn0039153 | 3R  | 24128622     | 24128685   | 0.34825544   | 0.064900724  | 0.047127603 |
| 46  | CG5498      | FBgn0027565 | 3L  | 20383500     | 20383552   | 0.21326873   | 0.038723587  | 0.036782869 |
| 47  | CG6329      | FBgn0033872 | 2R  | 13830718     | 13830777   | 0.0746546    | 0.160949125  | 0.006364093 |
| 48  | CG6695      | FBgn0039215 | 3R  | 24657410     | 24657515   | 0.26622137   | 0.132163065  | 0.035915529 |
| 49  | CG6765      | FBgn0035903 | 3L  | 8516450      | 8516512    | 0.03811098   | 0.200945415  | 0.04410035  |
| 50  | CG7227      | FBgn0031970 | 2L  | 7995691      | 7995755    | 0.40037065   | 0.061160555  | 0.030758097 |
| 51  | CG8507      | FBgn0037756 | 3R  | 9792757      | 9792812    | 0.15654885   | 0.028880965  | 0.034981176 |
| 52  | CG9003      | FBgn0033639 | 2R  | 11644416     | 11644484   | 0.21885466   | 0.094646442  | 0.04685764  |
| 53  | CG9935      | FBgn0039916 | 4   | 640476       | 640532     | 0.16611977   | 0.054653922  | 0.027181023 |
| 54  | Chc         | FBgn0000319 | X   | 15828882     | 15828951   | 0.10237573   | 0.035242501  | 0.024303775 |
| 55  | conu        | FBgn0039994 | 2R  | 4756588      | 4756654    | 0.10415274   | 0.190040609  | 0.039804401 |
| 56  | d4          | FBgn0033015 | 2R  | 5294712      | 5294796    | 0.07901433   | 0.183629224  | 0.01974937  |
| 57  | Dip-B       | FBgn0000454 | 3R  | 13784259     | 13784316   | 0.07712572   | 0.156402924  | 0.027659605 |
| 58  | Doa         | FBgn0265998 | 3R  | 28921549     | 28921614   | 0.09549405   | 0.167184635  | 0.045147385 |
| 59  | dpr2        | FBgn0261871 | 2L  | 10918018     | 10918113   | 0.20102544   | 0.444682628  | 0.049916213 |
| 60  | Eaat1       | FBgn0026439 | 2L  | 9339803      | 9339865    | 0.08459772   | 0.13678896   | 0.039720251 |
| 61  | Fis1        | FBgn0039969 | 2R  | 5604411      | 5604467    | 0.13023662   | 0.196565086  | 0.048234977 |
| 62  | FKBP59      | FBgn0029174 | 2L  | 9888985      | 9889047    | 0.11087244   | 0.200333276  | 0.022925258 |
| 63  | Frq1        | FBgn0030897 | X   | 18167656     | 18167784   | 0.08916794   | 0.209238036  | 0.047502709 |
| 64  | fws         | FBgn0024689 | 2L  | 17480242     | 17480295   | 0.22642491   | 0.043001305  | 0.047666781 |
| 65  | Gllspla2    | FBgn0030013 | X   | 8158386      | 8158564    | 0.1581922    | 0.031712882  | 0.045597794 |
| 66  | Gycalpha99B | FBgn0013972 | 3R  | 29685347     | 29685409   | 0.12329102   | 0.248221779  | 0.018128788 |
| 67  | hk          | FBgn0001202 | 2L  | 19031762     | 19031820   | 0.07394305   | 0.165498711  | 0.037332987 |
| 68  | HmgD        | FBgn0004362 | 2R  | 21715617     | 21715691   | 0.02422297   | 0.115802161  | 0.04940876  |
| 69  | Hnf4        | FBgn0004914 | 2L  | 8688857      | 8688920    | 0.13078479   | 0.026424004  | 0.044582512 |
| 70  | hyd         | FBgn0002431 | 3R  | 9715454      | 9715520    | 0.14877585   | 0.028851657  | 0.03899367  |
| 71  | Hydr2       | FBgn0014906 | 2L  | 3167973      | 3168034    | 0.0623914    | 0.137739102  | 0.042573572 |
| 72  | llp5        | FBgn0044048 | 3L  | 9823639      | 9823710    | 0.15037317   | 0.312212479  | 0.040212618 |
| 73  | ltp-r83A    | FBgn0010051 | 3R  | 5537325      | 5537385    | 0.16025403   | 0.056319028  | 0.036524451 |
| 74  | Jhl-21      | FBgn0028425 | 2L  | 12053924     | 12053981   | 0.23868337   | 0.395503012  | 0.031016422 |
| 75  | kcc         | FBgn0261794 | 2R  | 23924549     | 23924615   | 0.12038658   | 0.180591018  | 0.048434883 |
| 76  | lgs         | FBgn0039907 | 4   | 438918       | 438974     | 0.17741653   | 0.078051577  | 0.04639621  |
| 77  | Lmpt        | FBgn0261565 | 3L  | 16902068     | 16902128   | 0.14523922   | 0.04990354   | 0.027390312 |
| 78  | lox2        | FBgn0034660 | 2R  | 21790217     | 21790291   | 0.06482785   | 0.410685734  | 0.035776887 |
| 79  | lva         | FBgn0029688 | X   | 3955972      | 3956048    | 0.11871376   | 0.217233754  | 0.038331002 |
| 80  | magu        | FBgn0262169 | 2R  | 10062191     | 10062249   | 0.03890903   | 0.220415814  | 0.036819188 |
| 81  | Mal-B1      | FBgn0032381 | 2L  | 11848827     | 11848898   | 0.09472803   | 0.295237536  | 0.026919444 |
| 82  | Mct1        | FBgn0023549 | X   | 2204437      | 2204508    | 0.63205593   | 0.271538471  | 3.12E-05    |
| 83  | Mct1        | FBgn0023549 | X   | 2204709      | 2204764    | 0.65955011   | 0.409298187  | 0.013877425 |
| 84  | mRpL40      | FBgn0037892 | 3R  | 11408326     | 11408385   | 0.07979379   | 0.232710201  | 0.044737137 |
| 85  | Nhe3        | FBgn0028703 | 2L  | 6680114      | 6680174    | 0.0421294    | 0.11293729   | 0.037724762 |
| 86  | Nup44A      | FBgn0033247 | 2R  | 7990867      | 7990927    | 0.08006676   | 0.216006791  | 0.049138622 |
| 87  | Obp19b      | FBgn0031110 | X   | 20416928     | 20416993   | 0.11149987   | 0.221453488  | 0.022167001 |
| 88  | ort         | FBgn0003011 | 3R  | 19661662     | 19661720   | 0.09838617   | 0.311985274  | 0.032915506 |
| 89  | pio         | FBgn0020521 | 2R  | 24596339     | 24596395   | 0.02098333   | 0.107699484  | 0.037228054 |

| S/N | Gene        | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D30 IR ratio | p-value     |
|-----|-------------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 90  | PMCA        | FBgn0259214 | 4   | 349146       | 349212     | 0.0353167    | 0.10634628   | 0.025467201 |
| 91  | PMCA        | FBgn0259214 | 4   | 349424       | 349480     | 0.05088741   | 0.10124541   | 0.043754597 |
| 92  | Pp1alpha-96 | FBgn0003134 | 3R  | 24519881     | 24519939   | 0.1133618    | 0.179250388  | 0.041221105 |
| 93  | Pp2A-29B    | FBgn0260439 | 2L  | 8367249      | 8367311    | 0.05036876   | 0.116526098  | 0.042429452 |
| 94  | Psn         | FBgn0019947 | 3L  | 20434032     | 20434086   | 0.13171681   | 0.26903433   | 0.030474908 |
| 95  | pst         | FBgn0035770 | 3L  | 7359389      | 7359467    | 0.04659692   | 0.119657262  | 0.02236663  |
| 96  | pyd3        | FBgn0037513 | 3R  | 7748193      | 7748253    | 0.0307932    | 0.155122219  | 0.048632184 |
| 97  | retm        | FBgn0031814 | 2L  | 6451736      | 6451796    | 0.05295437   | 0.135548747  | 0.021521156 |
| 98  | rho-7       | FBgn0033672 | 2R  | 11988296     | 11988361   | 0.14628946   | 0.313703695  | 0.009612543 |
| 99  | santa-maria | FBgn0025697 | 2L  | 7446935      | 7446995    | 0.0359254    | 0.108148676  | 0.026512408 |
| 100 | Sesn        | FBgn0034897 | 2R  | 23732503     | 23732561   | 0.15173644   | 0.2433744    | 0.043471443 |
| 101 | SLC5A11     | FBgn0031998 | 2L  | 8200960      | 8201016    | 0.24400713   | 0.370829158  | 0.042849618 |
| 102 | Snmp1       | FBgn0260004 | 3R  | 21167957     | 21168017   | 0.09640713   | 0.220220533  | 0.031459151 |
| 103 | SPE         | FBgn0039102 | 3R  | 23687630     | 23687690   | 0.110775     | 0.061569791  | 0.04615578  |
| 104 | sqd         | FBgn0263396 | 3R  | 13642427     | 13642511   | 0.02040962   | 0.102027685  | 0.036671686 |
| 105 | TppII       | FBgn0020370 | 2R  | 13155210     | 13155268   | 0.06239299   | 0.173166054  | 0.04395116  |
| 106 | Vha100-2    | FBgn0028670 | 3R  | 18391196     | 18391258   | 0.11937242   | 0.044209231  | 0.038057639 |
| 107 | yellow-f2   | FBgn0038105 | 3R  | 12994319     | 12994427   | 0.1355182    | 0.242618032  | 0.036616614 |
| 108 | Yeti        | FBgn0267398 | 2R  | 1344381      | 1344450    | 0.12356058   | 0.02330414   | 0.033664844 |

**Table S1: Fly Differential retained introns (D10 versus D50)**

| S/N | Gene       | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D50 IR ratio | p-value     |
|-----|------------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 1   | Actn       | FBgn0000667 | X   | 2027462      | 2027520    | 0.07356137   | 0.203647836  | 0.003434916 |
| 2   | alpha-Est3 | FBgn0015571 | 3R  | 7539501      | 7539562    | 0.17802641   | 0.36738894   | 0.017053908 |
| 3   | Ank2       | FBgn0261788 | 3L  | 7696724      | 7696779    | 0.16189892   | 0.321167207  | 0.016868164 |
| 4   | Ank2       | FBgn0261788 | 3L  | 7696878      | 7696937    | 0.18135997   | 0.354038108  | 0.031460538 |
| 5   | Arp1       | FBgn0011745 | 3R  | 12693155     | 12693214   | 0.04760963   | 0.133298315  | 0.042009599 |
| 6   | Asator     | FBgn0039908 | 4   | 477102       | 477291     | 0.11242887   | 0.216976501  | 0.028746096 |
| 7   | atms       | FBgn0010750 | 3R  | 4775779      | 4775837    | 0.0423678    | 0.23218123   | 0.042938881 |
| 8   | Bacc       | FBgn0031453 | 2L  | 2756170      | 2756244    | 0.08741066   | 0.154484737  | 0.001792729 |
| 9   | bbc        | FBgn0033844 | 2R  | 13491593     | 13491654   | 0.08519753   | 0.213434815  | 0.002549378 |
| 10  | bol        | FBgn0011206 | 3L  | 9123776      | 9125166    | 0.37121122   | 0.732764147  | 0.041645447 |
| 11  | bt         | FBgn0005666 | 4   | 767690       | 767761     | 0.02628194   | 0.193874954  | 0.034638189 |
| 12  | bt         | FBgn0005666 | 4   | 772459       | 774016     | 0.16172372   | 0.271460353  | 0.025339501 |
| 13  | bt         | FBgn0005666 | 4   | 774117       | 774184     | 0.02218852   | 0.124320576  | 0.049364197 |
| 14  | bt         | FBgn0005666 | 4   | 774679       | 774914     | 0.0541167    | 0.117791095  | 0.011106947 |
| 15  | Ca-P60A    | FBgn0263006 | 2R  | 23929431     | 23929499   | 0.04132889   | 0.114110695  | 0.004725682 |
| 16  | Ca-P60A    | FBgn0263006 | 2R  | 23929617     | 23929681   | 0.04000226   | 0.119827376  | 0.001246911 |
| 17  | Ca-P60A    | FBgn0263006 | 2R  | 23932329     | 23932405   | 0.03813459   | 0.125382383  | 0.000387719 |
| 18  | Ca-P60A    | FBgn0263006 | 2R  | 23932488     | 23932573   | 0.03005445   | 0.102050153  | 0.003010243 |
| 19  | CaMKII     | FBgn0264607 | 4   | 1050609      | 1053497    | 0.1589038    | 0.267553221  | 0.025841388 |
| 20  | Camta      | FBgn0259234 | 2R  | 9471756      | 9471818    | 0.21389755   | 0.07184825   | 0.034466746 |
| 21  | cbs        | FBgn0086757 | 2R  | 13453030     | 13453088   | 0.10093505   | 0.28486845   | 0.0437035   |
| 22  | CCHa1      | FBgn0038199 | 3R  | 14093037     | 14093136   | 0.29259071   | 0.580867805  | 0.04053792  |
| 23  | CCHa1      | FBgn0038199 | 3R  | 14093308     | 14096595   | 0.25413881   | 0.557998282  | 0.01523667  |

| S/N | Gene    | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D50 IR ratio | p-value     |
|-----|---------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 24  | Cchl    | FBgn0038925 | 3R  | 22027066     | 22027159   | 0.08344646   | 0.185281382  | 0.028862461 |
| 25  | Cdk5    | FBgn0013762 | 2R  | 15571070     | 15571134   | 0.06442026   | 0.188120547  | 0.040551739 |
| 26  | cdm     | FBgn0261532 | 3R  | 18180625     | 18180684   | 0.1048585    | 0.210237501  | 0.016430989 |
| 27  | CecC    | FBgn0000279 | 3R  | 30216675     | 30216744   | 0.36015091   | 0.089859376  | 0.005400261 |
| 28  | CG10186 | FBgn0032797 | 2L  | 19510730     | 19510786   | 0.05543601   | 0.101724404  | 0.042227742 |
| 29  | CG10186 | FBgn0032797 | 2L  | 19514105     | 19514167   | 0.08161395   | 0.16145808   | 0.026356568 |
| 30  | CG10616 | FBgn0036286 | 3L  | 12471929     | 12472021   | 0.04468189   | 0.248658344  | 0.038739817 |
| 31  | CG10680 | FBgn0032836 | 2L  | 19965010     | 19965062   | 0.20096753   | 0.138183687  | 0.049866939 |
| 32  | CG10737 | FBgn0034420 | 2R  | 19176347     | 19176415   | 0.07168292   | 0.185565786  | 0.003323545 |
| 33  | CG10915 | FBgn0034308 | 2R  | 18162138     | 18162206   | 0.05805937   | 0.189459722  | 0.020082638 |
| 34  | CG10962 | FBgn0030073 | X   | 8973380      | 8973654    | 0.15994231   | 0.373782612  | 0.037369011 |
| 35  | CG11550 | FBgn0039864 | 3R  | 31679440     | 31679522   | 0.10412607   | 0.202449451  | 0.018476096 |
| 36  | CG11560 | FBgn0036249 | 3L  | 12120588     | 12120654   | 0.11326395   | 0.328679542  | 0.042012305 |
| 37  | CG1161  | FBgn0037313 | 3R  | 5355253      | 5355326    | 0.06227774   | 0.152937222  | 0.036811908 |
| 38  | CG11893 | FBgn0039316 | 3R  | 25290992     | 25291055   | 0.34889817   | 0.197622626  | 0.031102502 |
| 39  | CG12090 | FBgn0035227 | 3L  | 1523969      | 1524026    | 0.05243554   | 0.116332388  | 0.039772602 |
| 40  | CG12090 | FBgn0035227 | 3L  | 1531522      | 1531579    | 0.10271733   | 0.289062237  | 0.002183637 |
| 41  | CG12203 | FBgn0031021 | X   | 19492997     | 19493056   | 0.06828278   | 0.142458447  | 0.042489182 |
| 42  | CG12304 | FBgn0036515 | 3L  | 15584868     | 15584922   | 0.10383018   | 0.242947264  | 0.04522613  |
| 43  | CG12730 | FBgn0029771 | X   | 5517498      | 5517571    | 0.13278534   | 0.303055587  | 0.011289955 |
| 44  | CG13124 | FBgn0032156 | 2L  | 9904758      | 9904826    | 0.08948312   | 0.16048376   | 0.047116359 |
| 45  | CG1316  | FBgn0035526 | 3L  | 4284990      | 4285052    | 0.20050619   | 0.081206188  | 0.005399708 |
| 46  | CG13197 | FBgn0062449 | 2R  | 11694581     | 11694654   | 0.16692675   | 0.301429879  | 0.045216577 |
| 47  | CG13384 | FBgn0032036 | 2L  | 8387831      | 8387890    | 0.05512787   | 0.167710484  | 0.021793036 |
| 48  | CG13603 | FBgn0039135 | 3R  | 23986099     | 23986165   | 0.02281933   | 0.112239242  | 0.043313781 |
| 49  | CG13795 | FBgn0031937 | 2L  | 7725473      | 7725534    | 0.14791886   | 0.302354386  | 0.028672654 |
| 50  | CG13833 | FBgn0039040 | 3R  | 23033729     | 23033796   | 0.06033837   | 0.18616486   | 0.00222526  |
| 51  | CG13893 | FBgn0035146 | 3L  | 600664       | 600726     | 0.06129878   | 0.169502036  | 0.048303515 |
| 52  | CG13937 | FBgn0035287 | 3L  | 1877662      | 1877760    | 0.2167863    | 0.371438888  | 0.012402556 |
| 53  | CG14141 | FBgn0036146 | 3L  | 11201642     | 11201695   | 0.2456744    | 0.451515353  | 0.04987297  |
| 54  | CG14274 | FBgn0032023 | 2L  | 8338488      | 8338579    | 0.15691532   | 0.281125544  | 0.047084808 |
| 55  | CG14464 | FBgn0033000 | 2R  | 4829493      | 4829546    | 0.09244719   | 0.216268419  | 0.003661938 |
| 56  | CG15012 | FBgn0035528 | 3L  | 4291623      | 4291686    | 0.02399388   | 0.117424168  | 0.042863152 |
| 57  | CG15118 | FBgn0034418 | 2R  | 19135625     | 19135684   | 0.12263056   | 0.02512163   | 0.045228589 |
| 58  | CG15525 | FBgn0039732 | 3R  | 29997375     | 29997437   | 0.04029388   | 0.2355626    | 0.037322954 |
| 59  | CG15628 | FBgn0031632 | 2L  | 4827100      | 4827172    | 0.0546593    | 0.148325385  | 0.046915201 |
| 60  | CG15661 | FBgn0034605 | 2R  | 21215908     | 21215970   | 0.09547773   | 0.184365155  | 0.029930789 |
| 61  | CG1657  | FBgn0030286 | X   | 11333318     | 11333387   | 0.05858796   | 0.171214757  | 0.027985354 |
| 62  | CG16721 | FBgn0029820 | X   | 5881870      | 5881934    | 0.04590496   | 0.145414603  | 0.02376045  |
| 63  | CG1674  | FBgn0039897 | 4   | 236475       | 237268     | 0.0313073    | 0.170214214  | 0.03344402  |
| 64  | CG1674  | FBgn0039897 | 4   | 240398       | 240644     | 0.10190006   | 0.198118953  | 0.032650846 |
| 65  | CG16903 | FBgn0040394 | X   | 2078774      | 2078831    | 0.12347494   | 0.269613653  | 0.032642237 |
| 66  | CG16941 | FBgn0266917 | 3R  | 17002028     | 17002150   | 0.14410321   | 0.325376238  | 0.047560249 |
| 67  | CG17337 | FBgn0259979 | 2R  | 5698008      | 5698455    | 0.14633678   | 0.292700592  | 0.012162423 |
| 68  | CG18304 | FBgn0031869 | 2L  | 6938148      | 6938202    | 0.06740934   | 0.364955603  | 0.04581189  |

| S/N | Gene    | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D50 IR ratio | p-value     |
|-----|---------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 69  | CG18304 | FBgn0031869 | 2L  | 6939715      | 6940610    | 0.0890988    | 0.550429931  | 0.037983012 |
| 70  | CG18467 | FBgn0034218 | 2R  | 17440875     | 17441486   | 0.17358504   | 0.367538074  | 0.023839505 |
| 71  | CG2162  | FBgn0035388 | 3L  | 3036661      | 3036728    | 0.09441834   | 0.241377875  | 0.01845474  |
| 72  | CG2316  | FBgn0039890 | 4   | 185916       | 185977     | 0.12713559   | 0.209649248  | 0.039726981 |
| 73  | CG2469  | FBgn0035205 | 3L  | 1309793      | 1309856    | 0.03110766   | 0.172499988  | 0.036088707 |
| 74  | CG2926  | FBgn0037344 | 3R  | 5580045      | 5580114    | 0.20369057   | 0.08694973   | 0.031398643 |
| 75  | CG2943  | FBgn0037530 | 3R  | 7903889      | 7903953    | 0.14942943   | 0.066948934  | 0.044190932 |
| 76  | CG30051 | FBgn0050051 | 2R  | 12436256     | 12436320   | 0.09701507   | 0.306978052  | 0.028634121 |
| 77  | CG30109 | FBgn0050109 | 2R  | 17670328     | 17670386   | 0.03995317   | 0.246211739  | 0.026652213 |
| 78  | CG30438 | FBgn0050438 | 2R  | 5548775      | 5548827    | 0.04461782   | 0.266741488  | 0.031648158 |
| 79  | CG30491 | FBgn0050491 | 2R  | 7656100      | 7656155    | 0.11929374   | 0.308041521  | 0.019630834 |
| 80  | CG30503 | FBgn0050503 | 2R  | 7445517      | 7445581    | 0.14722238   | 0.38942825   | 0.003082494 |
| 81  | CG31103 | FBgn0051103 | 3R  | 25219884     | 25219945   | 0.20308499   | 0.081632719  | 0.022936485 |
| 82  | CG31109 | FBgn0051109 | 3R  | 25053974     | 25054041   | 0.18267068   | 0.429610928  | 0.023777181 |
| 83  | CG31191 | FBgn0051191 | 3R  | 20911912     | 20911970   | 0.62850615   | 0.289145117  | 0.005631098 |
| 84  | CG31191 | FBgn0051191 | 3R  | 20912077     | 20912141   | 0.42213347   | 0.203957336  | 0.043307603 |
| 85  | CG31619 | FBgn0051619 | 2L  | 21713308     | 21716324   | 0.05026234   | 0.159948833  | 0.026480044 |
| 86  | CG32085 | FBgn0052085 | 3L  | 11668312     | 11668431   | 0.37152979   | 0.573042889  | 0.027167503 |
| 87  | CG32523 | FBgn0052523 | X   | 21218157     | 21218224   | 0.07659113   | 0.153838114  | 0.032143132 |
| 88  | CG33110 | FBgn0053110 | 3R  | 22572747     | 22574361   | 0.20961284   | 0.315524729  | 0.040818492 |
| 89  | CG3321  | FBgn0038224 | 3R  | 14327183     | 14327252   | 0.21361737   | 0.408151102  | 0.026897405 |
| 90  | CG33521 | FBgn0250819 | 4   | 1188349      | 1189053    | 0.11630221   | 0.246410415  | 0.023307229 |
| 91  | CG33521 | FBgn0250819 | 4   | 1190008      | 1190066    | 0.19909418   | 0.401179606  | 0.005838013 |
| 92  | CG33521 | FBgn0250819 | 4   | 1192162      | 1192224    | 0.20949517   | 0.468952136  | 0.009345518 |
| 93  | CG33774 | FBgn0053774 | 2R  | 9400068      | 9400256    | 0.03451959   | 0.211480439  | 0.026300376 |
| 94  | CG34355 | FBgn0085384 | 3R  | 23849129     | 23849187   | 0.05692964   | 0.171097586  | 0.026519582 |
| 95  | CG34417 | FBgn0085446 | X   | 6576957      | 6577036    | 0.04431777   | 0.142672342  | 0.012978893 |
| 96  | CG34417 | FBgn0085446 | X   | 6585785      | 6585847    | 0.04519831   | 0.122665973  | 0.033140697 |
| 97  | CG34423 | FBgn0085452 | 2R  | 23358767     | 23358832   | 0.22202909   | 0.542015644  | 0.029121029 |
| 98  | CG3860  | FBgn0034951 | 2R  | 23992574     | 23992634   | 0.11257206   | 0.217965813  | 0.035156622 |
| 99  | CG40006 | FBgn0058006 | 2L  | 22718975     | 22755856   | 0.03014132   | 0.158162382  | 0.044055371 |
| 100 | CG4210  | FBgn0038302 | 3R  | 15214365     | 15214425   | 0.04723628   | 0.268916245  | 0.036237567 |
| 101 | CG42268 | FBgn0259163 | 3L  | 9750299      | 9750891    | 0.0577187    | 0.142837564  | 0.035033837 |
| 102 | CG42361 | FBgn0259707 | 2R  | 24608261     | 24608318   | 0.27627318   | 0.413934895  | 0.045752717 |
| 103 | CG4239  | FBgn0030745 | X   | 16387619     | 16387680   | 0.02986964   | 0.154506241  | 0.040048386 |
| 104 | CG42488 | FBgn0259991 | 3R  | 25484302     | 25484360   | 0.03859834   | 0.206758653  | 0.043837737 |
| 105 | CG42596 | FBgn0260995 | 2R  | 3079082      | 3121990    | 0.06447215   | 0.159083876  | 0.026700491 |
| 106 | CG42596 | FBgn0260995 | 2R  | 3122084      | 3182391    | 0.05203759   | 0.145916291  | 0.044309931 |
| 107 | CG42708 | FBgn0261625 | 2R  | 12672587     | 12672663   | 0.03022383   | 0.161383911  | 0.03941761  |
| 108 | CG42709 | FBgn0261674 | 3L  | 12795324     | 12795457   | 0.08504768   | 0.23244966   | 0.045947297 |
| 109 | CG43078 | FBgn0262508 | 3L  | 8583766      | 8585970    | 0.19658166   | 0.339259823  | 0.031307798 |
| 110 | CG43673 | FBgn0263748 | X   | 15779191     | 15779379   | 0.09227224   | 0.2861936    | 0.009542935 |
| 111 | CG43729 | FBgn0263980 | 2R  | 15416838     | 15419350   | 0.24602609   | 0.659025317  | 0.009863773 |
| 112 | CG43897 | FBgn0264489 | 3L  | 9832866      | 9832927    | 0.04774418   | 0.16840546   | 0.000124405 |
| 113 | CG44085 | FBgn0264894 | 2L  | 13261177     | 13261500   | 0.1493469    | 0.391458628  | 0.008009526 |

| S/N | Gene    | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D50 IR ratio | p-value     |
|-----|---------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 114 | CG44085 | FBgn0264894 | 2L  | 13274376     | 13274642   | 0.13981764   | 0.337792526  | 0.000546336 |
| 115 | CG44153 | FBgn0265002 | 2L  | 10068355     | 10068635   | 0.13173071   | 0.313813503  | 0.038539983 |
| 116 | CG45076 | FBgn0266446 | 3R  | 10770432     | 10771037   | 0.15151441   | 0.302831133  | 0.002840782 |
| 117 | CG45076 | FBgn0266446 | 3R  | 10771467     | 10771859   | 0.09541629   | 0.178348347  | 0.040320159 |
| 118 | CG45076 | FBgn0266446 | 3R  | 10771972     | 10772112   | 0.09621057   | 0.174390766  | 0.048581884 |
| 119 | CG4552  | FBgn0031304 | 2L  | 1131181      | 1131263    | 0.02684616   | 0.132346437  | 0.045246414 |
| 120 | CG4630  | FBgn0033809 | 2R  | 13215966     | 13216022   | 0.10140078   | 0.345464419  | 0.022726314 |
| 121 | CG4743  | FBgn0039357 | 3R  | 25680008     | 25680071   | 0.04756603   | 0.263873322  | 0.040059789 |
| 122 | CG5001  | FBgn0031322 | 2L  | 1191534      | 1191598    | 0.03823124   | 0.250813778  | 0.021825494 |
| 123 | CG5001  | FBgn0031322 | 2L  | 1192198      | 1192255    | 0.14005952   | 0.45247949   | 0.02199076  |
| 124 | CG5002  | FBgn0034275 | 2R  | 17752644     | 17752706   | 0.15662527   | 0.385144082  | 0.009531032 |
| 125 | CG5142  | FBgn0032470 | 2L  | 13108282     | 13108415   | 0.28335279   | 0.045256925  | 0.02902984  |
| 126 | CG5612  | FBgn0039529 | 3R  | 27624173     | 27624230   | 0.08148688   | 0.251323639  | 0.023790544 |
| 127 | CG5708  | FBgn0032196 | 2L  | 10224892     | 10224957   | 0.03492553   | 0.181017293  | 0.045836783 |
| 128 | CG5938  | FBgn0046247 | 3R  | 27276503     | 27276569   | 0.04980035   | 0.135683271  | 0.040821284 |
| 129 | CG6083  | FBgn0036183 | 3L  | 11625552     | 11625616   | 0.08533519   | 0.350837543  | 0.008721668 |
| 130 | CG6329  | FBgn0033872 | 2R  | 13830718     | 13830777   | 0.0746546    | 0.139414577  | 0.029253017 |
| 131 | CG6356  | FBgn0039178 | 3R  | 24286946     | 24287003   | 0.18501866   | 0.332325937  | 0.035572452 |
| 132 | CG6656  | FBgn0038912 | 3R  | 21877400     | 21877466   | 0.07452418   | 0.151694965  | 0.049470678 |
| 133 | CG6765  | FBgn0035903 | 3L  | 8516450      | 8516512    | 0.03811098   | 0.22722396   | 0.030138837 |
| 134 | CG6867  | FBgn0030887 | X   | 18025119     | 18025180   | 0.04133277   | 0.22809096   | 0.040475937 |
| 135 | CG7071  | FBgn0260467 | 3R  | 22363287     | 22363353   | 0.11759976   | 0.266590173  | 0.04988098  |
| 136 | CG7607  | FBgn0036145 | 3L  | 11200198     | 11200252   | 0.14744534   | 0.274911641  | 0.024270644 |
| 137 | CG7627  | FBgn0032026 | 2L  | 8356974      | 8357033    | 0.08863391   | 0.20701467   | 0.045843823 |
| 138 | CG7638  | FBgn0036133 | 3L  | 11110800     | 11110861   | 0.03370223   | 0.200506591  | 0.02872531  |
| 139 | CG7720  | FBgn0038652 | 3R  | 18792120     | 18795010   | 0.25166213   | 0.486378626  | 0.020996953 |
| 140 | CG7781  | FBgn0032021 | 2L  | 8322702      | 8322773    | 0.07052131   | 0.138240294  | 0.015452876 |
| 141 | CG7785  | FBgn0038564 | 3R  | 18021819     | 18022105   | 0.08710862   | 0.265134021  | 0.035768617 |
| 142 | CG7970  | FBgn0035252 | 3L  | 1653254      | 1653316    | 0.05147491   | 0.168103619  | 0.016982757 |
| 143 | CG8199  | FBgn0037709 | 3R  | 9556538      | 9556604    | 0.04252742   | 0.251632743  | 0.031471676 |
| 144 | CG8388  | FBgn0034062 | 2R  | 16009716     | 16009772   | 0.13980768   | 0.496288188  | 0.01859887  |
| 145 | CG8399  | FBgn0034067 | 2R  | 16023687     | 16023746   | 0.03396494   | 0.166945161  | 0.049152198 |
| 146 | CG8520  | FBgn0033734 | 2R  | 12424108     | 12424165   | 0.08846793   | 0.224749369  | 0.022971195 |
| 147 | CG8920  | FBgn0027529 | 2R  | 20325537     | 20325595   | 0.10569101   | 0.198130366  | 0.031170851 |
| 148 | CG9003  | FBgn0033639 | 2R  | 11644179     | 11644238   | 0.08894507   | 0.21023998   | 0.039578778 |
| 149 | CG9132  | FBgn0030791 | X   | 16798684     | 16798749   | 0.05445797   | 0.147586204  | 0.041098837 |
| 150 | CG9297  | FBgn0038181 | 3R  | 13775169     | 13775227   | 0.01946499   | 0.12852651   | 0.01521315  |
| 151 | CG9449  | FBgn0036875 | 3L  | 19494918     | 19496550   | 0.13308484   | 0.24948537   | 0.025384935 |
| 152 | CG9577  | FBgn0031092 | X   | 20167119     | 20167190   | 0.08402026   | 0.209386242  | 0.027313545 |
| 153 | chp     | FBgn0267435 | 3R  | 31206196     | 31206255   | 0.07197651   | 0.119712384  | 0.047795544 |
| 154 | cin     | FBgn0000316 | X   | 256641       | 256761     | 0.09852993   | 0.2329973    | 0.041765758 |
| 155 | CngB    | FBgn0266346 | 2R  | 21693659     | 21693717   | 0.04797216   | 0.256305847  | 0.044768102 |
| 156 | Coq2    | FBgn0037574 | 3R  | 8316413      | 8316472    | 0.06015485   | 0.355595926  | 0.043508674 |
| 157 | cora    | FBgn0010434 | 2R  | 19236208     | 19236266   | 0.02153344   | 0.104758999  | 0.044590143 |
| 158 | Cpr60D  | FBgn0050163 | 2R  | 24663232     | 24663290   | 0.11073616   | 0.360340264  | 0.007488612 |

| S/N | Gene        | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D50 IR ratio | p-value     |
|-----|-------------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 159 | Crk         | FBgn0024811 | 4   | 210486       | 210557     | 0.12683032   | 0.221296218  | 0.008871043 |
| 160 | Cyp28c1     | FBgn0030339 | X   | 11839797     | 11839857   | 0.04757424   | 0.272237211  | 0.048953643 |
| 161 | Cyp28c1     | FBgn0030339 | X   | 11840203     | 11840261   | 0.14749052   | 0.428345253  | 0.03028423  |
| 162 | Cyp4e1      | FBgn0015034 | 2R  | 8447662      | 8447932    | 0.11688366   | 0.407197247  | 0.025943441 |
| 163 | d4          | FBgn0033015 | 2R  | 5294712      | 5294796    | 0.07901433   | 0.171885715  | 0.032313056 |
| 164 | dbo         | FBgn0040230 | 3L  | 15829037     | 15829185   | 0.12592822   | 0.248482195  | 0.048202182 |
| 165 | dbr         | FBgn0067779 | 2L  | 70549        | 70606      | 0.04251734   | 0.239466636  | 0.035627418 |
| 166 | DCP2        | FBgn0036534 | 3L  | 15822011     | 15822070   | 0.06764255   | 0.192023229  | 0.040318913 |
| 167 | disp        | FBgn0029088 | 3R  | 5852694      | 5852766    | 0.04603508   | 0.245978257  | 0.046409    |
| 168 | dor         | FBgn0000482 | X   | 1667825      | 1667887    | 0.23825346   | 0.466575369  | 0.048608124 |
| 169 | dpr16       | FBgn0037295 | 3R  | 5165834      | 5166079    | 0.3613917    | 0.124358019  | 0.041732124 |
| 170 | dpr17       | FBgn0051361 | 3R  | 12110687     | 12110831   | 0.3225024    | 0.103917268  | 0.025790548 |
| 171 | dpr19       | FBgn0032233 | 2L  | 10378221     | 10378287   | 0.0324333    | 0.163753924  | 0.049362059 |
| 172 | Eaat1       | FBgn0026439 | 2L  | 9339803      | 9339865    | 0.08459772   | 0.138456238  | 0.034996574 |
| 173 | Eaat1       | FBgn0026439 | 2L  | 9340488      | 9340543    | 0.05851135   | 0.121427034  | 0.009408326 |
| 174 | Ect4        | FBgn0262579 | 3L  | 8072304      | 8072368    | 0.15058697   | 0.447252778  | 0.042052637 |
| 175 | Eps-15      | FBgn0035060 | 2R  | 24772037     | 24772097   | 0.05076326   | 0.152975329  | 0.02328958  |
| 176 | Eps-15      | FBgn0035060 | 2R  | 24774505     | 24774576   | 0.02396657   | 0.135889608  | 0.027983328 |
| 177 | fabp        | FBgn0037913 | 3R  | 11560792     | 11560851   | 0.0375333    | 0.101000669  | 0.048446554 |
| 178 | Fbxl4       | FBgn0030555 | X   | 14236714     | 14236845   | 0.1357816    | 0.045971479  | 0.037511405 |
| 179 | Fcp1        | FBgn0035026 | 2R  | 24568602     | 24568659   | 0.08135175   | 0.247631255  | 0.03082896  |
| 180 | Fis1        | FBgn0039969 | 2R  | 5604411      | 5604467    | 0.13023662   | 0.202607436  | 0.032960606 |
| 181 | Fmo-1       | FBgn0034943 | 2R  | 23963717     | 23963774   | 0.15860498   | 0.457730109  | 0.044724574 |
| 182 | Fur2        | FBgn0004598 | X   | 16379847     | 16379921   | 0.14264043   | 0.028367664  | 0.043964399 |
| 183 | Gale        | FBgn0035147 | 3L  | 650523       | 650583     | 0.02114886   | 0.103598755  | 0.04059019  |
| 184 | gammaSnap1  | FBgn0028552 | 2R  | 24048450     | 24048638   | 0.07741346   | 0.144761699  | 0.037002799 |
| 185 | gammaSnap1  | FBgn0028552 | 2R  | 24048706     | 24048768   | 0.01903334   | 0.102622707  | 0.029869368 |
| 186 | gammaTub23  | FBgn0260639 | 2L  | 2973107      | 2973165    | 0.13084469   | 0.293682348  | 0.035126177 |
| 187 | GILT1       | FBgn0038149 | 3R  | 13399432     | 13399509   | 0.04428084   | 0.102735484  | 0.041087057 |
| 188 | glob1       | FBgn0027657 | 3R  | 15898015     | 15901009   | 0.28347201   | 0.452850778  | 0.025976798 |
| 189 | GlyP        | FBgn0004507 | 2L  | 2136644      | 2136730    | 0.07290588   | 0.117122949  | 0.044562248 |
| 190 | gol         | FBgn0004919 | 2R  | 25077306     | 25077369   | 0.03869437   | 0.11516461   | 0.037092766 |
| 191 | Gp93        | FBgn0039562 | 3R  | 27948901     | 27948983   | 0.07760425   | 0.159146412  | 0.033732961 |
| 192 | grass       | FBgn0039494 | 3R  | 27158117     | 27158191   | 0.18608501   | 0.335188315  | 0.030019039 |
| 193 | grk         | FBgn0001137 | 2L  | 8433272      | 8433414    | 0.20340598   | 0.42844073   | 0.028770701 |
| 194 | gry         | FBgn0035416 | 3L  | 3200458      | 3200516    | 0.28330102   | 0.082534323  | 0.018660357 |
| 195 | GXIVsPLA2   | FBgn0036545 | 3L  | 15955547     | 15955610   | 0.10762895   | 0.230857393  | 0.038583523 |
| 196 | Gycalpha99B | FBgn0013972 | 3R  | 29683938     | 29683998   | 0.06869843   | 0.166325628  | 0.026513182 |
| 197 | HDAC4       | FBgn0041210 | X   | 13270320     | 13270390   | 0.07407569   | 0.218608978  | 0.025755242 |
| 198 | how         | FBgn0264491 | 3R  | 22042355     | 22042906   | 0.18918112   | 0.344300135  | 0.021948437 |
| 199 | Hpr1        | FBgn0037382 | 3R  | 5819644      | 5819698    | 0.10382415   | 0.316039038  | 0.030942568 |
| 200 | Hydr1       | FBgn0033382 | 2R  | 9133770      | 9133841    | 0.05250782   | 0.146119163  | 0.039503141 |
| 201 | I-2         | FBgn0028429 | 3L  | 9835980      | 9836048    | 0.02938058   | 0.178941341  | 0.022519432 |
| 202 | inaC        | FBgn0004784 | 2R  | 16900512     | 16900575   | 0.06877622   | 0.110238557  | 0.024561229 |
| 203 | jp          | FBgn0032129 | 2L  | 9553939      | 9553999    | 0.05216978   | 0.195848943  | 0.007780928 |

| S/N | Gene       | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D50 IR ratio | p-value     |
|-----|------------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 204 | kcc        | FBgn0261794 | 2R  | 23922856     | 23922921   | 0.05363286   | 0.105967769  | 0.021800875 |
| 205 | Klc        | FBgn0010235 | 3L  | 12747941     | 12748055   | 0.12685288   | 0.042224478  | 0.01972242  |
| 206 | KrT95D     | FBgn0020647 | 3R  | 24000117     | 24000179   | 0.08179248   | 0.176519161  | 0.034273563 |
| 207 | l(1)G0136  | FBgn0026666 | X   | 15734606     | 15735098   | 0.09004508   | 0.180548539  | 0.024964212 |
| 208 | l(2)01289  | FBgn0010482 | 2R  | 6722254      | 6722307    | 0.09775955   | 0.334410669  | 0.013562888 |
| 209 | l(2)01289  | FBgn0010482 | 2R  | 6722464      | 6722527    | 0.04819589   | 0.333000442  | 0.019650641 |
| 210 | l(2)01289  | FBgn0010482 | 2R  | 6722694      | 6722751    | 0.04564874   | 0.261672466  | 0.03607453  |
| 211 | l(2)01289  | FBgn0010482 | 2R  | 6725639      | 6725703    | 0.0518885    | 0.404149732  | 0.014542201 |
| 212 | l(2)01289  | FBgn0010482 | 2R  | 6732184      | 6732237    | 0.04602203   | 0.270211164  | 0.03392349  |
| 213 | l(2)01289  | FBgn0010482 | 2R  | 6732882      | 6732942    | 0.04711507   | 0.265590909  | 0.039119863 |
| 214 | l(2)01289  | FBgn0010482 | 2R  | 6733257      | 6733627    | 0.20145128   | 0.416340124  | 0.03896836  |
| 215 | l(2)01289  | FBgn0010482 | 2R  | 6733942      | 6734013    | 0.11167666   | 0.415213632  | 0.009939    |
| 216 | l(2)01289  | FBgn0010482 | 2R  | 6734194      | 6734258    | 0.0542462    | 0.423148671  | 0.015886541 |
| 217 | l(2)01289  | FBgn0010482 | 2R  | 6734392      | 6734454    | 0.1024774    | 0.398066333  | 0.011443267 |
| 218 | l(2)efl    | FBgn0011296 | 2R  | 23684932     | 23684994   | 0.08938535   | 0.195780469  | 0.010550867 |
| 219 | l(2)efl    | FBgn0011296 | 2R  | 23685382     | 23685475   | 0.18692919   | 0.436364443  | 0.000381797 |
| 220 | l(2)k01209 | FBgn0022029 | 2R  | 17424759     | 17424818   | 0.11997783   | 0.2411774    | 0.044288788 |
| 221 | l(3)neo18  | FBgn0011455 | 3L  | 12137944     | 12138015   | 0.06620056   | 0.118904483  | 0.046272954 |
| 222 | Lar        | FBgn0000464 | 2L  | 19714989     | 19715760   | 0.17652888   | 0.073337068  | 0.038106381 |
| 223 | lbn        | FBgn0016032 | 2R  | 7049965      | 7050033    | 0.04188411   | 0.28179423   | 0.022195972 |
| 224 | Lin29      | FBgn0262636 | 4   | 377669       | 377757     | 0.07318248   | 0.194875303  | 0.013075514 |
| 225 | Lpin       | FBgn0263593 | 2R  | 8141820      | 8141890    | 0.04303606   | 0.172620372  | 0.000731889 |
| 226 | Lpin       | FBgn0263593 | 2R  | 8142028      | 8142098    | 0.01805704   | 0.137408536  | 0.007256546 |
| 227 | lt         | FBgn0002566 | 2L  | 22924925     | 22924981   | 0.19258857   | 0.332964305  | 0.049256628 |
| 228 | lt         | FBgn0002566 | 2L  | 22925498     | 22925565   | 0.09464086   | 0.283511983  | 0.000878763 |
| 229 | lt         | FBgn0002566 | 2L  | 22925919     | 22927437   | 0.10191852   | 0.27961071   | 0.003563099 |
| 230 | Maf1       | FBgn0058196 | 2R  | 1516468      | 1516519    | 0.11001495   | 0.169956029  | 0.045011492 |
| 231 | mam        | FBgn0002643 | 2R  | 14057196     | 14057261   | 0.07281163   | 0.209433817  | 0.047395235 |
| 232 | Mct1       | FBgn0023549 | X   | 2204437      | 2204508    | 0.63205593   | 0.33231668   | 0.001010317 |
| 233 | Mct1       | FBgn0023549 | X   | 2204709      | 2204764    | 0.65955011   | 0.361961552  | 0.002529478 |
| 234 | mdy        | FBgn0004797 | 2L  | 16826422     | 16826482   | 0.03179694   | 0.159596931  | 0.044855162 |
| 235 | MESK2      | FBgn0043070 | 2R  | 21502479     | 21510866   | 0.21576984   | 0.350434345  | 0.049861573 |
| 236 | metro      | FBgn0050021 | 2R  | 11227543     | 11227662   | 0.07494945   | 0.176938569  | 0.034742872 |
| 237 | Mf         | FBgn0038294 | 3R  | 15176293     | 15176363   | 0.02500384   | 0.163890637  | 1.64E-07    |
| 238 | Mf         | FBgn0038294 | 3R  | 15179180     | 15180207   | 0.04566425   | 0.143153733  | 0.000339925 |
| 239 | Mf         | FBgn0038294 | 3R  | 15179180     | 15180292   | 0.34949452   | 0.881485405  | 0.003190682 |
| 240 | MFS18      | FBgn0025684 | 2L  | 4447851      | 4447905    | 0.03825177   | 0.217348676  | 0.035510352 |
| 241 | Mhc        | FBgn0264695 | 2L  | 16771141     | 16773276   | 0.0389302    | 0.101844322  | 0.033619786 |
| 242 | Mhc        | FBgn0264695 | 2L  | 16773380     | 16774449   | 0.04162254   | 0.118835529  | 0.032333804 |
| 243 | Mhc        | FBgn0264695 | 2L  | 16774857     | 16775682   | 0.07877384   | 0.129923847  | 0.003488538 |
| 244 | Mhc        | FBgn0264695 | 2L  | 16774857     | 16776262   | 0.23062441   | 0.399003368  | 0.001461533 |
| 245 | Mhc        | FBgn0264695 | 2L  | 16777439     | 16778389   | 0.1559591    | 0.283627716  | 0.040970535 |
| 246 | Mhc        | FBgn0264695 | 2L  | 16778507     | 16780549   | 0.17138294   | 0.316955733  | 0.04626364  |
| 247 | Mhc        | FBgn0264695 | 2L  | 16783661     | 16783832   | 0.27938196   | 0.466970129  | 0.013995493 |
| 248 | Mhc        | FBgn0264695 | 2L  | 16783911     | 16784665   | 0.32909147   | 0.544893095  | 0.00752769  |

| S/N | Gene        | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D50 IR ratio | p-value     |
|-----|-------------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 249 | Mlc1        | FBgn0002772 | 3R  | 27657955     | 27658066   | 0.08892471   | 0.158675381  | 0.034971805 |
| 250 | mle         | FBgn0002774 | 2R  | 5978677      | 5979318    | 0.2230266    | 0.374551568  | 0.044454907 |
| 251 | Mlp60A      | FBgn0259209 | 2R  | 24075069     | 24075198   | 0.04624766   | 0.218456475  | 2.16E-05    |
| 252 | Mlp60A      | FBgn0259209 | 2R  | 24075337     | 24075448   | 0.05653519   | 0.145275695  | 0.001429842 |
| 253 | Mlp84B      | FBgn0014863 | 3R  | 7115838      | 7116651    | 0.09505862   | 0.342947699  | 0.005007385 |
| 254 | Mlp84B      | FBgn0014863 | 3R  | 7115838      | 7117650    | 0.05589973   | 0.196587547  | 0.013032291 |
| 255 | msps        | FBgn0027948 | 3R  | 16059684     | 16059738   | 0.13551507   | 0.213351705  | 0.040838947 |
| 256 | mus210      | FBgn0004698 | 2R  | 15317147     | 15317208   | 0.04104094   | 0.255401918  | 0.026064388 |
| 257 | mxt         | FBgn0031637 | 2L  | 4845158      | 4845253    | 0.04434539   | 0.147192754  | 0.01443916  |
| 258 | Nckx30C     | FBgn0028704 | 2L  | 9744226      | 9746433    | 0.28586797   | 0.697281357  | 0.044726484 |
| 259 | Nep3        | FBgn0031081 | X   | 19963341     | 19963954   | 0.30328332   | 0.607737109  | 0.035641854 |
| 260 | Nf-YA       | FBgn0035993 | 3L  | 9441966      | 9442123    | 0.2993124    | 0.603974144  | 0.044724284 |
| 261 | Nxt1        | FBgn0028411 | 2R  | 23811881     | 23811938   | 0.11676443   | 0.362160026  | 0.033703162 |
| 262 | Obp49a      | FBgn0050052 | 2R  | 12690548     | 12690609   | 0.07589035   | 0.135851757  | 0.026133208 |
| 263 | Obp56a      | FBgn0034468 | 2R  | 19697829     | 19698068   | 0.40294571   | 0.191441233  | 0.040986025 |
| 264 | Obp69a      | FBgn0011279 | 3L  | 12396739     | 12396792   | 0.06869193   | 0.229391051  | 0.001150639 |
| 265 | osp         | FBgn0003016 | 2L  | 14601798     | 14601850   | 0.14362376   | 0.295216665  | 0.0404713   |
| 266 | ox          | FBgn0011227 | 2R  | 12757231     | 12757297   | 0.09493417   | 0.184764084  | 0.023488625 |
| 267 | per         | FBgn0003068 | X   | 2689439      | 2689503    | 0.06722034   | 0.197428197  | 0.049729725 |
| 268 | Pfk         | FBgn0003071 | 2R  | 10116657     | 10116736   | 0.05945912   | 0.118827838  | 0.029234105 |
| 269 | Pgk         | FBgn0250906 | 2L  | 2748255      | 2748319    | 0.09600898   | 0.163233741  | 0.0179765   |
| 270 | Pi4KIIalpha | FBgn0037339 | 3R  | 5558301      | 5558366    | 0.06295319   | 0.244269653  | 0.00462743  |
| 271 | Pi4KIIalpha | FBgn0037339 | 3R  | 5563345      | 5563541    | 0.0824442    | 0.290432622  | 0.016429503 |
| 272 | Pif1A       | FBgn0261015 | 3R  | 8798046      | 8799461    | 0.04589422   | 0.100342111  | 0.034383251 |
| 273 | Pih1D1      | FBgn0032455 | 2L  | 12713375     | 12713442   | 0.10380343   | 0.336075071  | 0.029245637 |
| 274 | pio         | FBgn0020521 | 2R  | 24596339     | 24596395   | 0.02098333   | 0.105469555  | 0.039720293 |
| 275 | Pis         | FBgn0030670 | X   | 15703318     | 15703569   | 0.05964516   | 0.113867249  | 0.039333932 |
| 276 | Pitslre     | FBgn0016696 | 3L  | 20776053     | 20776173   | 0.05655866   | 0.112269307  | 0.041399709 |
| 277 | PMCA        | FBgn0259214 | 4   | 349146       | 349212     | 0.0353167    | 0.167608774  | 0.001155784 |
| 278 | PMCA        | FBgn0259214 | 4   | 349424       | 349480     | 0.05088741   | 0.157615103  | 0.000447124 |
| 279 | PMCA        | FBgn0259214 | 4   | 350043       | 350602     | 0.07448222   | 0.154720855  | 0.004744562 |
| 280 | PMCA        | FBgn0259214 | 4   | 350690       | 350764     | 0.08406378   | 0.173639834  | 0.005668832 |
| 281 | PMCA        | FBgn0259214 | 4   | 351209       | 351585     | 0.10750808   | 0.189441525  | 0.032106568 |
| 282 | PMCA        | FBgn0259214 | 4   | 351827       | 351883     | 0.06550979   | 0.178652244  | 0.00063655  |
| 283 | PMCA        | FBgn0259214 | 4   | 352126       | 352180     | 0.11549552   | 0.200802045  | 0.02504045  |
| 284 | Pp1-87B     | FBgn0004103 | 3R  | 12424516     | 12424610   | 0.10804227   | 0.173618787  | 0.011822315 |
| 285 | pr          | FBgn0003141 | 2L  | 20074128     | 20074190   | 0.06159106   | 0.179598969  | 0.007646751 |
| 286 | Prm         | FBgn0003149 | 3L  | 8744331      | 8744962    | 0.03035268   | 0.183633512  | 0.022581778 |
| 287 | prt         | FBgn0043005 | 3R  | 23698618     | 23698681   | 0.19806039   | 0.466033837  | 0.016164741 |
| 288 | Psn         | FBgn0019947 | 3L  | 20434032     | 20434086   | 0.13171681   | 0.258112579  | 0.042162369 |
| 289 | Ptp99A      | FBgn0004369 | 3R  | 29483072     | 29483129   | 0.06136418   | 0.205358727  | 0.020229039 |
| 290 | rdx         | FBgn0264493 | 3R  | 13970629     | 13970951   | 0.1852765    | 0.079577326  | 0.022725957 |
| 291 | retm        | FBgn0031814 | 2L  | 6451736      | 6451796    | 0.05295437   | 0.141049597  | 0.015997596 |
| 292 | retn        | FBgn0004795 | 2R  | 23642405     | 23642483   | 0.03734788   | 0.246052018  | 0.022332594 |
| 293 | retn        | FBgn0004795 | 2R  | 23651084     | 23651434   | 0.04357067   | 0.22935416   | 0.047115952 |

| S/N | Gene      | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D50 IR ratio | p-value     |
|-----|-----------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 294 | Rh2       | FBgn0003248 | 3R  | 18899576     | 18899672   | 0.08692538   | 0.22723908   | 0.001813572 |
| 295 | RhoGEF2   | FBgn0023172 | 2R  | 17036901     | 17036970   | 0.08727545   | 0.259021155  | 0.003585029 |
| 296 | RyR       | FBgn0011286 | 2R  | 8874862      | 8874934    | 0.11252663   | 0.282814867  | 0.020243335 |
| 297 | Saf-B     | FBgn0039229 | 3R  | 24818350     | 24818410   | 0.0410571    | 0.115703818  | 0.0421363   |
| 298 | Saf-B     | FBgn0039229 | 3R  | 24818700     | 24818802   | 0.0425262    | 0.128327382  | 0.027515894 |
| 299 | sgll      | FBgn0051472 | 3R  | 7810789      | 7810856    | 0.07503652   | 0.164544403  | 0.047954601 |
| 300 | shrb      | FBgn0086656 | 2R  | 9143000      | 9143058    | 0.06182194   | 0.131189501  | 0.038194858 |
| 301 | SLC5A11   | FBgn0031998 | 2L  | 8200960      | 8201016    | 0.24400713   | 0.446146156  | 0.003027342 |
| 302 | SLC5A11   | FBgn0031998 | 2L  | 8202409      | 8202467    | 0.27997975   | 0.546940385  | 0.002121614 |
| 303 | sls       | FBgn0086906 | 3L  | 2041078      | 2041138    | 0.02916626   | 0.168594922  | 0.04161827  |
| 304 | sls       | FBgn0086906 | 3L  | 2042015      | 2042090    | 0.03001299   | 0.269833062  | 0.027047689 |
| 305 | sls       | FBgn0086906 | 3L  | 2043106      | 2043240    | 0.02820647   | 0.142320471  | 0.005610893 |
| 306 | sls       | FBgn0086906 | 3L  | 2046164      | 2046281    | 0.05916172   | 0.187585273  | 0.044426704 |
| 307 | sls       | FBgn0086906 | 3L  | 2092559      | 2092620    | 0.04374469   | 0.238608887  | 0.023657229 |
| 308 | Socs44A   | FBgn0033266 | 2R  | 8128261      | 8128323    | 0.07962514   | 0.236671579  | 0.03456548  |
| 309 | Sodh-2    | FBgn0022359 | 3R  | 10877647     | 10877701   | 0.24877121   | 0.417197724  | 0.039619655 |
| 310 | spas      | FBgn0039141 | 3R  | 24039765     | 24039910   | 0.16541657   | 0.47987013   | 0.044765119 |
| 311 | Spn       | FBgn0010905 | 3L  | 2508573      | 2508638    | 0.1234814    | 0.24840084   | 0.019730358 |
| 312 | sqa       | FBgn0259678 | 2R  | 9719748      | 9719818    | 0.03531369   | 0.209888547  | 0.032569114 |
| 313 | Srp9      | FBgn0035827 | 3L  | 7936615      | 7936680    | 0.02656919   | 0.139075799  | 0.037507119 |
| 314 | Ssk       | FBgn0036945 | 3L  | 20189188     | 20189319   | 0.04788702   | 0.320152125  | 0.025382867 |
| 315 | Ssrp      | FBgn0010278 | 2R  | 23808732     | 23808809   | 0.07435949   | 0.25825882   | 0.023426249 |
| 316 | Strn-Mlck | FBgn0265045 | 2R  | 15961188     | 15961312   | 0.0994861    | 0.321419962  | 0.026498153 |
| 317 | sws       | FBgn0003656 | X   | 7957798      | 7957865    | 0.05862516   | 0.167377219  | 0.032284572 |
| 318 | Syx6      | FBgn0037084 | 2R  | 11220621     | 11220927   | 0.16755578   | 0.286121979  | 0.018308166 |
| 319 | Tao       | FBgn0031030 | X   | 19572613     | 19572677   | 0.02373319   | 0.113873431  | 0.047407306 |
| 320 | TBCB      | FBgn0034451 | 2R  | 19486104     | 19486168   | 0.06066945   | 0.188408874  | 0.02831579  |
| 321 | Tif-IA    | FBgn0032988 | 2L  | 22250314     | 22250371   | 0.15560849   | 0.286506354  | 0.039446672 |
| 322 | Tppll     | FBgn0020370 | 2R  | 13155210     | 13155268   | 0.06239299   | 0.182960099  | 0.032846578 |
| 323 | tral      | FBgn0041775 | 3L  | 12519070     | 12519143   | 0.03903789   | 0.125586256  | 0.017199478 |
| 324 | trc       | FBgn0003744 | 3L  | 19832876     | 19832933   | 0.06799255   | 0.156512607  | 0.025854684 |
| 325 | Treh      | FBgn0003748 | 2R  | 21085387     | 21085447   | 0.06125242   | 0.111823244  | 0.047607585 |
| 326 | Trn-SR    | FBgn0031456 | 2L  | 2760146      | 2760216    | 0.05322306   | 0.334893945  | 0.03121522  |
| 327 | trol      | FBgn0261451 | X   | 2486242      | 2486926    | 0.18223672   | 0.380010422  | 0.045691563 |
| 328 | Tsp42Eh   | FBgn0033129 | 2R  | 7033718      | 7033778    | 0.227929     | 0.64086602   | 0.010701507 |
| 329 | Tsp42Ek   | FBgn0033133 | 2R  | 7043876      | 7043945    | 0.14471087   | 0.308923813  | 0.04213608  |
| 330 | Tsp42En   | FBgn0033135 | 2R  | 7053236      | 7053300    | 0.20312214   | 0.039076934  | 0.049641658 |
| 331 | Tsp96F    | FBgn0027865 | 3R  | 25875874     | 25875944   | 0.1248792    | 0.254722555  | 0.039869199 |
| 332 | Ttc19     | FBgn0032744 | 2L  | 19044317     | 19044369   | 0.15315593   | 0.322309412  | 0.027597872 |
| 333 | tyf       | FBgn0026083 | X   | 4117895      | 4117963    | 0.23240779   | 0.474474264  | 0.019385178 |
| 334 | Ubp64E    | FBgn0016756 | 3L  | 5760609      | 5760674    | 0.04313067   | 0.11743143   | 0.036682572 |
| 335 | Ubqn      | FBgn0031057 | X   | 19685910     | 19685989   | 0.04547143   | 0.125120032  | 0.035520522 |
| 336 | UGP       | FBgn0035978 | 3L  | 9352827      | 9352881    | 0.05569547   | 0.101573466  | 0.043609789 |
| 337 | UGP       | FBgn0035978 | 3L  | 9353228      | 9353512    | 0.32015278   | 0.537171261  | 0.016099603 |
| 338 | Unc-89    | FBgn0053519 | 2R  | 23997709     | 23997771   | 0.03416323   | 0.231581214  | 0.018489644 |

| S/N | Gene      | ENSEMBL ID  | Chr | Intron Start | Intron End | D10 IR ratio | D50 IR ratio | p-value     |
|-----|-----------|-------------|-----|--------------|------------|--------------|--------------|-------------|
| 339 | Unc-89    | FBgn0053519 | 2R  | 24000543     | 24000596   | 0.07882685   | 0.23741082   | 0.027938741 |
| 340 | Unc-89    | FBgn0053519 | 2R  | 24001950     | 24002008   | 0.03819949   | 0.283080833  | 0.015791255 |
| 341 | Unc-89    | FBgn0053519 | 2R  | 24002201     | 24002260   | 0.04118451   | 0.252007126  | 0.028843939 |
| 342 | Unc-89    | FBgn0053519 | 2R  | 24003890     | 24003956   | 0.03810387   | 0.343635842  | 0.00716289  |
| 343 | Unc-89    | FBgn0053519 | 2R  | 24006282     | 24006393   | 0.04649851   | 0.265303462  | 0.040065582 |
| 344 | Unc-89    | FBgn0053519 | 2R  | 24007766     | 24007833   | 0.04160715   | 0.256779774  | 0.029341336 |
| 345 | Unc-89    | FBgn0053519 | 2R  | 24012659     | 24012723   | 0.09717407   | 0.317932458  | 0.043097263 |
| 346 | unc79     | FBgn0038693 | 3R  | 19231918     | 19231975   | 0.07537936   | 0.142845578  | 0.038971599 |
| 347 | up        | FBgn0004169 | X   | 13595242     | 13595319   | 0.03515195   | 0.180905071  | 3.33E-06    |
| 348 | veil      | FBgn0034225 | 2R  | 17480588     | 17480650   | 0.03992469   | 0.236399526  | 0.033735463 |
| 349 | VhaM9.7-b | FBgn0028663 | 3L  | 21540082     | 21540152   | 0.08441238   | 0.166330451  | 0.01204874  |
| 350 | VhaSFD    | FBgn0027779 | 2L  | 16727488     | 16727629   | 0.04458292   | 0.102251415  | 0.034879647 |
| 351 | Vps13     | FBgn0033194 | 2R  | 7579410      | 7579475    | 0.03037083   | 0.153871354  | 0.040885189 |
| 352 | Vps36     | FBgn0086785 | 3L  | 13512081     | 13512139   | 0.11751109   | 0.322036924  | 0.04927689  |
| 353 | wmd       | FBgn0034876 | 2R  | 23545263     | 23545325   | 0.09524114   | 0.225822983  | 0.033801472 |
| 354 | Wnk       | FBgn0037098 | 3L  | 21544268     | 21544325   | 0.09055956   | 0.256404286  | 0.008086136 |
| 355 | wupA      | FBgn0004028 | X   | 18106931     | 18109469   | 0.23226732   | 0.348787315  | 0.015588618 |
| 356 | wupA      | FBgn0004028 | X   | 18106931     | 18111937   | 0.38507512   | 0.652952277  | 0.002576178 |
| 357 | wupA      | FBgn0004028 | X   | 18109570     | 18113257   | 0.17441947   | 0.304857315  | 0.004680056 |
| 358 | wupA      | FBgn0004028 | X   | 18112038     | 18113257   | 0.3714164    | 0.668489342  | 0.002364673 |
| 359 | yuri      | FBgn0045842 | 2L  | 15263664     | 15263769   | 0.38102595   | 0.174630083  | 0.017689166 |
| 360 | Zasp66    | FBgn0035917 | 3L  | 8626510      | 8626960    | 0.0806112    | 0.284457161  | 0.001191451 |
| 361 | Zasp66    | FBgn0035917 | 3L  | 8630376      | 8630516    | 0.11531603   | 0.361352786  | 0.022341198 |
| 362 | Zasp66    | FBgn0035917 | 3L  | 8635081      | 8635680    | 0.15360273   | 0.228022838  | 0.027499061 |
| 363 | Zasp66    | FBgn0035917 | 3L  | 8635752      | 8637438    | 0.2109349    | 0.309327234  | 0.020708319 |
| 364 | Zasp66    | FBgn0035917 | 3L  | 8637598      | 8638156    | 0.14918192   | 0.212774881  | 0.045055201 |
| 365 | Zasp66    | FBgn0035917 | 3L  | 8638195      | 8638266    | 0.08872298   | 0.159107576  | 0.000734858 |
| 366 | Zip102B   | FBgn0039902 | 4   | 313298       | 313356     | 0.12597672   | 0.025525686  | 0.043043106 |
| 367 | zyd       | FBgn0265767 | X   | 23023431     | 23030189   | 0.20981114   | 0.428412668  | 0.03244298  |
| 368 | zyd       | FBgn0265767 | X   | 23028597     | 23030189   | 0.38097802   | 0.633434857  | 0.042649676 |