## TABLE 4: 139 genes on chromosome III associated with progeny-only phenotypes and 9 genes associated with F0 sterility

### A. Embryonic lethal (78 genes) (0-10 F1 larvae; dead eggs on plate)

| Gene | Brief identification | Comments |
|---|---|---|
| B0303.3 | Acetyl-coa acetyltransferase | |
| B0336.1 | similar to beta-catenin homologue | |
| B0464.2 | TPR domain-containing protein | |
| C07A9.2 | G10 protein | |
| C16A3.4 | putative zinc finger protein | |
| C16A3.5 | NADH-ubiquinone oxidoreductase B22 | |
| C16A3.6 | putative mitochondrial 60S ribosomal protein L3 | |
| C16C10.6 | no strong homologues outside *C. elegans* ; weak similarity with *unc-89* | |
| C23G10.8 | weak similarity with *S. pombe* adenylyl cyclase-associated protein | |
| C23G10.9 | no clear homologies | |
| C26E6.4 | DNA-directed RNA polymerase II | |
| C29F9.7 | integrin-linked kinase | |
| C30C11.1 | weak similarity to uncharacterized *Drosophila* protein | |
| C32A3.1 | LAG3a (functions in Notch signalling pathway) | |
| C34E10.1 | no clear homologies | Few survivors become sterile F1 adults. |
| C34E10.2 | putative ATP (GTP) binding protein | |
| C38C10.5 | component of Mediator complex; transcriptional regulation | |
| C38D4.6 | homeobox protein (cad subfamily) | |
| C50C3.6 | putative U5 snRNA-associated splicing factor (PRP 8) | |
| D2045.6 | cullin family | |
| F01F1.7 | RNA helicase | |
| F02A9.6 | GLP-1 | Few survivors become sterile F1 adults with no visible gonads, germ cells or F2 embryos. |
| F09F7.4 | Enoyl-CoA hydratase | |
| F20H11.2 | strongly similar to *Drosophila* Strawberry Notch | |
| F26F4.11 | RNA polymerase II subunit | |
| F31E3.5 | elongation factor 1-alpha | |
| F35G12.11 | homologous to *Drosophila* enhancer of | |
| F37C12.1 | similar to *S. cerevisiae* YJU2 protein | |
| F40F12.7 | no homologues outside *C. elegans* ; similar to K03H1.10 (bromodomain family) | Variable numbers of survivors in some experiments (variable penetrance?) |
| F44B9.7 | similar to replication factor C subunit 3 | |
| F45G2.8 | similarity to *Drosophila* and human proteins; UPF0108 family | |
| F53A2.4 | simliar to *A. nidulans* Nud C | |
| F54C4.3 | zinc finger protein | In some experiments, few survivors are L2/L3-sized and have variable |
| F56A8.6 | contains RNA recognition motif (aka RRM, RBD, or RNP domain) | Variable numbers of survivors in some experiments (variable penetrance?) |
| F57B9.6 | eIF-4A | |
| F59A2.4 | putative ATP/GTP-binding protein with possible human homologue (HEAB) | |
| H10E21.3 | zinc finger protein | |
| K01G5.1 | Zinc finger, C3HC4 type (RING finger) | |
| K03H1.10 | CBP-1 protein, contains bromodomain. | |
| K03H1.2 | RNA helicase (DEAH subfamily) | |
| K04G7.10 | SN-RNP U1 | |
| K04G7.11 | homologous to uncharacterized *Drosophila* and human proteins | In some experiments with dsRNAs #2 and #3, surviving F1 worms were noted with small size (dpy), and uncoordinated movements (unc). |
| K08E3.5 | UTP-glucose-1-phosphate- uridyltransferase (EC 2.7.7.9) | |
| K12H4.5 | unknown function, no apparent homologues | In some experiments with dsRNA #1, animals died as L1's. |
| M01F1.3 | lipoic acid synthase | In some experiments, some F1 worms hatched but had slow larval |
| M03C11.7 | U4/U6 small nuclear ribonucleoprotein HPRP3 | |
| R07E5.10 | apoptosis protein RP-8 | |
| R07E5.3 | homologous to *S. cerevisiae* Snf5p | |
| R08D7.1 | homologous to uncharacterized *Drosophila* | |
| R12B2.4 | coiled coil protein | |
| R13F6.1 | no clear homologies | |
| R144.2 | similar to uncharacterized *Drosophila* and human proteins | |
| R144.7 | similar to Lupus LA proteins | |
| T04A8.14 | S1 RNA binding domain | |
| T10F2.4 | guanine nucleotide binding protein | |
| T12D8.1 | PHD-finger (2 domains), SET domain | |
| T12D8.7 | TFIID 31 kDa subunit (TAFII-31) | dsRNA#2 had lower penetrance. |
| T16H12.4 | transcription factor TFIIH subunit | |
| T17E9.2 | PNMT | dsRNA#1 had lower penetrance. |
| T17H7.4 | homologue of *O. volvulus* B20 protein (nematode specific) | In some experiments , animals died as L1's. |
| T20B12.2 | TFIID | |
| T20B12.8 | structure-specific recognition protein (SSRP1) | dsRNA#2 had slightly lower penetrance, with normal surviving F1 worms. |
| T20H4.5 | mitochondrial complex I 23K chain | |

| | | |
|---|---|---|
| W06F12.1 | serine/threonine kinase (CDC2/CDC28 subfamily) | |
| W07B3.2 | no clear homologies outside *C. elegans* | |
| Y39E4B.11 | no clear homologies | |
| Y49E10.22 | no clear homologies | |
| Y49E10.6 | core histone H2A/H2B/H3/H4 | |
| Y54H5A.1 | homologous to uncharacterized *Drosophila* protein (WD40 repeat) | |
| Y56A3A.4 | weak similarities to human and and *S.* | |
| Y66A7A.8 | weakly similar to Brachyury protein | |
| Y71H2B.10 | beta-adaptin 1 (involved in clathrin coat | |
| Y71H2B.6 | weak similarity with uncharacterized *Drosophila* protein | |
| Y75B8A.14 | similar to uncharacterized *Drosophila* and human proteins | In some experiments, weaker progeny test phenotype (L3/L4: late larval defect) |
| Y79H2A.6 | SOP2-like protein | |
| ZK1128.4 | similar to human basic transcription factor 2, 35 kDa subunit | |
| ZK507.1 | serine/threonine kinase | |
| ZK652.1 | small nuclear ribonucleoprotein F (SNRNP-F) | |

**B. L1/L2: early larval defect (33 genes) (progeny resembles L1's-L2's at 4 day check; most likely arrested development)**

| | | |
|---|---|---|
| B0280.9 | homologous to uncharacterized proteins in other eukaryotes (WD40 repeats) | |
| B0303.15 | Ribosomal protein L11 | |
| C06E1.10 | ATP-dependent RNA helicase | |
| C16A3.3 | weak similarity to human RRP5 protein | |
| C18D11.4 | contains RNA recognition motif (aka RRM, RBD, or RNP domain) | L2-sized F1 worms observed both 3 days and 5 days post-injection. |
| C26E6.6 | ribosomal protein L3 | |
| C28H8.6 | weak similarity to chicken zyxin and *C. elegans* lin-11 (LIM domain) | Very small L1-like animals |
| C34C12.8 | GRPE protein homologue | |
| C56G2.6 | Estradiol 17 beta-dehydrogenase 3 (*let-767*) | |
| D2007.4 | weak similarity to uncharacterized human and *Drosophila* proteins | |
| F37C12.13 | strong similarity to human autoantigen | |
| F54F2.8 | similarity to peroxisomal farnesylated protein | Possibly dauer-like phenotype (needs confirmation). |
| F57B9.5 | similar to yeast Enp1p and human bystin | |
| K07D8.1 | EGF-repeat containing protein (*mup-4*) | In some experiments, L1/L2 larvae were all dead with distorted morphology. |
| K12H4.3 | similar to *S. cerevisiae* Yol077p | |
| M01F1.6 | similar to uncharacterized *Drosophila* protein | |
| M88.2 | weakly similar to uncharacterized *Drosophila* | |
| R02F2.7 | no clear homologues | |
| R13A5.12 | similar to yeast Ygr103p-like protein family | |
| T04A8.11 | 50S ribosomal protein L16 | Partial embryonic lethality in some experiments. |
| T04A8.6 | putative RNA binding protein | |
| T20B12.3 | similar to uncharacterized *Drosophila* protein | |
| T20G5.3 | transmembrane cell adhesion receptor MUA-3 precursor | L1/L2 larvae are all dead with very distorted morphology (unc-like). |
| W06E11.1 | no clear homologues | |
| W09D10.1 | similar to putative GTPase activating protein | |
| W09D10.3 | mitochondrial 60S ribosomal protein L7/L12 precursor | |
| Y39A1A.14 | homologous to uncharacterized proteins in other eukaryotes | |
| Y39A1A.14 | homologous to uncharacterized human protein | |
| Y43F4B.5 | phosphoglucomutase and phosphomannomutase phosphoserine | |
| Y48A6C.4 | no clear homologies | |
| Y49E10.1 | ATPases associated with various cellular activities (AAA) | |
| ZK1098.7 | weak similarity to human CGI-138 protein | |
| ZK686.2 | ATP-dependent RNA helicase | |

**C. L3/L4: late larval defect (15 genes) (progeny resembles L3's-L4's at 4 day check)**

| | | |
|---|---|---|
| C05D11.9 | weak similarities to uncharacterized proteins in other eukaryotes | L3-like worms, with abnormal internal structures. |
| C30C11.4 | HSP-70 like | L3-like larvae are short (dpy); also, reduced brood size in some experiments |
| C32A3.2 | no clear homologies | |
| C34E10.4 | mitochondrial tryptophanyl-tRNA synthetase | |
| C35D10.5 | similar to putative ZIC3 binding protein (Xenopus) | |
| K01G5.5 | nucleolar ribosomal processing protein | |
| K04G7.1 | no clear homologies | |
| K04H4.1 | collagen | |
| K11H3.2 | no clear homologies | |
| R12B2.5 | weak similarity to uncharacterized *Drosophila* | |
| Y39A1A.22 | homologies with murine retrovirus receptor | L3-like worms, with abnormal internal structures. |
| Y47D3B.7 | helix-loop-helix DNA-binding domain | L3-like worms, with abnormal internal structures. |
| Y48A6B.3 | ribosomal protein L7Ae | |
| ZK512.2 | RNA helicase | |
| ZK1236.3 | no apparent homologies outside *C. elegans* | Larvae die as contorted L3's-L4's, with a range of morphological defects (including vulval deformities, irregular girth, aberrant internal structures). |

**D. Adult phenotype (13 genes) (limited phenotypic characterization thus far)**

| | | |
|---|---|---|
| C03B8.4 | zinc finger protein | ~40% adults have 2-4 protrusions along body wall. |
| C05D11.2 | similar to *S. cerevisiae* vacuolar protein sorting-associated protein | 10-20% adults are shorter and fatter than normal (dpy) |
| C16A3.8 | weak similarity with *S. cerevisiae* Rlr1p ( involved in RNA pol II transcription) | ~5% adults exhibit morphological and behavioural: grossly distorted body and uncoordinated (unc), rolling behaviour (rol), short body length (dpy), aberrant vulva. |
| F31E3.1 | homeodomain-containing protein (*ceh-20* ) | ~30% adults are short (dpy), distorded and are severely uncoordinated (unc) ; ~30% are dead at the 4 day check, leaving short and bloated carcasses filled with larvae. |
| F37A4.8 | SWI/SNF chromatin remodeling protein | Adults have few or no embryos (F1 sterile); in some cases, adults also had morphological defects (long, thin, with aberrant internal structures). |
| F43D9.1 | band 4.1 domain-containing protein | ~30% of adults are shorter and fatter than normal (dpy) |
| F54D8.1 | putative collagen | >30% of adults are shorter and fatter than normal (dpy) |
| R07E5.7 | no clear homologies | Adults are shorter and fatter than normal (dpy); slightly delayed larval |
| Y39A1A.13 | no clear homologies | Adults have variable defects: distorted body and severely uncoordinated (unc), vulval deformities, apparent F1 sterility; possibly delayed larval |
| Y39A1B.3 | homology to condensins | Some adults are shorter and fatter than normal (dpy); somewhat subtle. |
| Y75B8A.2 | homeodomain-containing protein (*nob-1* ) | ~80% adults have enlarged tail region , with variable degrees of severity. |
| Y75B8A.36 | contains protein kinase domain | ~10% of adult F1 worms show distorted body with uncoordinated |
| ZK637.7 | weak homologies to 2 *Drosophila* proteins | Adults are smaller than normal, with enlarged vulva. |

**E. Sterility of F0 injected animals (9 genes)**

| | | |
|---|---|---|
| C13B9.3 | adaptor complexes medium subunit protein family | |
| F23F12.2 | no clear homologies | |
| F43C1.2 | MAP kinase | Rare embryos have complex DIC phenotype |
| F43D9.3 | homologous to *S. cerevisiae* Sly1p (involved in vesicle trafficking) | |
| F56F3.1 | no clear homologies | |
| K02D10.5 | synaptosome-associated protein 25 kDa | |
| K11D9.2 | P-type ATPase | |
| R10E11.2 | vacuolar ATP synthase subunit | |
| R10E11.8 | V-ATPase proteolipid protein family (*vha-1* ) | |