Table S1. *C. elegans* resources

Resource	Description	Location and URL
DATABASES AND ON-LINE REFERENCES		
WormBase	complete genomic DNA, gene and protein database (100 Mbp, ~19,000 coding sequences, non-coding RNAs), SNPs for genotyping, protein database, yeast two-hybrid data	http://www.wormbase.org For comparative sequence browsing: *C. elegans* (http://www.wormbase.org/db/seq/gbrowse/wormbase/) *C. briggsae* (http://C.elwww.wormbase.org/db/seq/gbrowse/briggsae/) *C. remanei* (http://dev.wormbase.org/db/seq/gbrowse/remanei/)
WormPD	commercial protein database	https://www.proteome.com/proteome/
WormGenes	NCBI AceView of *C. elegans* genes. Annotation and references based on curated cDNAs	http://www.wormgenes.org
RNAiDB	summary of RNAi constructs, phenotypes and off target hits	http://www.rnai.org
PhenoBank	genome-wide RNAi screening for genes that effect the first two rounds of mitotic cell division as seen with time-lapse video microscopy.	http://www.phenobank.org
GeneOrienteer	prediction of genetic interactions	http://tenaya.caltech.edu:8000/predict
NBrowse	an interactive graphical browser for molecular interaction networks	http://gnetbrowse.org
C.elegans WWW Server	superb resource for variety of C. elegans information and portals to other sites and protocols	Leone Avery's laboratory: http://elegans.swmed.edu/
WormBook	comprehensive treatise on *C. elegans* biology, chapters continuously updated (downloadable pdf's) by investigators	http://www.wormbook.org/
C. elegans II	on-line version of the authoritative text in *C. elegans* anatomy, biology, genetics and procedures	http://www.ncbi.nlm.nih.gov/books/bv.fcgi?call=bv.View..ShowTOC&rid=ce2.TOC
Genetic nomenclature	submission site and description of new strains, genes and phenotypes	http://www.wormbase.org/wiki/index.php/Nomenclature
Princeton Protein Orthology Database (P-POD)	orthologues from multiple species with an emphasis on providing information about disease-related genes	http://ortholog.princeton.edu/help.html
REAGENTS		
Caenorhabditis Genetics Center (CGC) at the University of Minnesota	repository and distributor of mutant strain (minimal fee)	http://www.cbs.umn.edu/CGC/
Gene knockout consortia	most strains available through the CGC, or contact center or strains or to fast-track isolation of a desired mutant	*C. elegans* Gene Knockout Consortium (University of Oklahoma: http://celeganskoconsortium.omrf.org/; University of British Columbia: http://www.zoology.ubc.ca/~alorch/research1.htm; BC Genome Science Centre: http://www.bcgsc.bc.ca/); National Bioresource Project for the Experimental Animal Nematode C. elegans (Japan): http://www.grs.nig.ac.jp/c.elegans/index.jsp); EMBL-transposon C. elegans transposon insertion project (Tc and Mos insertions, Laurent Segalat: segalat@cgmc.univ-lyon1.fr;

		http://www.cgmc.univ-lyon1.fr/cgmc_info_celeganstp.php
EST databases and cDNA libraries	clones and sequences available	Yuji Kohara clones: http://www.ddbj.nig.ac.jp/ M. Vidal (WORFDB, the ORFeome Project), (http://worfdb.dfci.harvard.edu/) ORFeome v1.1 available from GeneService LTD : http://www.geneservice.co.uk/products/cdna/Celegans_ORF.jsp and v3.1 available from Open Biosystems: http://www.openbiosystems.com/GeneExpression/Non%2DMammalian/Worm/C%5F%20elegans%20ORFs/
RNAi libraries	arrayed feeding libraries, most have been assayed and phenotypes in WormBase along with primer design for target construction, validation of clone inserts suggested	Ahringer RNAi feeding library (http://www.gurdon.cam.ac.uk/~ahringerlab/pages/rnai.html) available from GeneService LTD: http://geneservice.co.uk/products/rnai/ Vidal RNAi feeding library v1.1 (http://worfdb.dfci.harvard.edu/) available from Open Biosystems: http://www.openbiosystems.com/GeneExpression/Non%2DMammalian/Worm/CelegansORF%2DRNAi/
Promoter collection library	for expression and yeast one-hybrid assays	available from Open Biosystems: http://www.openbiosystems.com/GeneExpression/Non%2DMammalian/Worm/CelegansPromoters/
Transcription factor library	for yeast one-hybrid assays	available from Open Biosystems: http://www.openbiosystems.com/GeneExpression/Non%2DMammalian/Worm/TranscriptionFactors/
Genomic DNA clones	BACs, YACs, fosmids, cosmids	http://www.sanger.ac.uk/Projects/C_elegans/; http://www.geneservice.co.uk/products/clones/index.jsp
Fire cloning and expression vectors	1995,1997 and 1999 plates (n = 288 vectors)	http://www.addgene.org/pgvec1?f=c&cmd=showcol&colid=1
Monoclonal antibodies	contact centers for antibodies or prospect for generating reagents	Sugimoto laboratory *C. elegans* Monoclonal Antibody Collection: http://www.cdb.riken.jp/dge/KTmAbDB/KTtop.html Nonet laboratory: http://neuroscience.wustl.edu/nonetlab/ResourcesF/MonoclonalsMade.html
EXPRESSION DATA		
The Nematode Expression Pattern DataBase	expression of GFP and lacZ reporters	NEXTDB (Kohara laboratory): http://nematode.lab.nig.ac.jp/ BC Genome Sciences Centre: http://www.bcgsc.ca/; promoter::GFP fusion expression patterns: http://gfpworm.org/index Hope laboratory expression database: http://bgypc059.leeds.ac.uk/~web/databaseintro.htm
Serial Analysis of Gene Expression (SAGE)	data repository, integrated into WormBase	BC Genome Sciences Center: http://elegans.bcgsc.bc.ca/
In situ mRNA	data repository	http://nematode.lab.nig.ac.jp/db2/index.php

Microarrays	ologonucleotide and cDNA arrays	http://nematode.lab.nig.ac.jp/ Washington University: http://genome.wustl.edu/genome/celegans/microarray/ma_gen_info.cgi Affymetrix: http://www.affymetrix.com/products/arrays/specific/celegans.affx Agilent: http://www.chem.agilent.com/Scripts/PDS.asp?lPage=29452
ANATOMY AND DEVELOPMENT		
C. elegans parts list	cell lineage development	http://elegans.swmed.edu/parts/parts.html
WormAtlas	extensive database of behavioral and structural anatomy, including the SlidableWorm	Center for *C. elegans* anatomy, AECOM: http://www.wormatlas.org/
Neuronal connectivity map	deduced from extensive EM studies	http://www.wormatlas.org/handbook/nshandbook.htm/nswiring.htm
WormImage	searchable archive of unpublished electron micrographs from several *C. elegans* labs	http://www.wormimage.org/
PARASITIC NEMATODES		
Nematode.Net	compendium of nematode sequencing efforts and databases	http://www.nematode.net
Nematode and neglected genomics	The Blaxter lab website with useful clinical, pylogenetic and genomic information including the Filarial genome project and links to the filarial genome network	http://www.nematodes.org

Table S2. Human disease-related genes conserved in *C. elegans*

Disorder	Human gene	*C. elegans* gene
INBORN ERRORS OF METABOLISM/SIMPLE MENDELIAN DISORDERS		
Aarskog-Scott syndrome	*FGD1* (guanine nucleotide exchange factor)	*exc-5*
Achondroplasia	*FGFR3* (FGF receptor tyrosine kinase)	*egl-15*
Adrenoleukodystrophy, X-linked	*ALD* (peroxisomal membrane protein related	*pmp-4*
Agammaglobulinemia, X-linked	*BTK* (non-receptor tyrosine kinase)	*abl-1*
Alzheimer's disease	*AD3* and *4* (presenilins)	*sel-12*
	APP (amyloid precursor protein)	*apl-1*
Amyloidosis I, hereditary neuropathic	*TTR* (transthyretin/prealbumin)	R09H10.3, Y73B6BL.1
Amyotrophic lateral sclerosis	*SOD1* (super oxide dismutase)	*sod-4*
Aniridia	*PAX6* (paired homeobox domain)	*vab-3*
Ataxia telangiectasia	*AT* (PI-3 kinase-like domain)	*atl-1*
Barth syndrome	*TAZ* (phosphate acyl transferase)	*acl-2*
Batten disease	*CLN3* (small molecule transporter)	*cln-3.1*, *.2* and *.3*
Beckwith-Weidemann syndrome	*GFI1/2* (C2H2 zinc-finger protein)	*pag-3*
Benign familial neonatal convulsions	*KCNQ2* (potassium channel)	*kqt-1*
Bloom syndrome	*BLM* (RecQ-like ATP-dependent DNA helicase)	*him-6*
Cardiomyopathy, dilated, 1D	*TNNT2* (troponin T)	*tnt-3*
Carnitine palmitoyltransferase I deficiency	*CPT1A* (carnitine palmitoyltransferase I)	*cpt-1*
Carnitine palmitoyltransferase II deficiency	*CPT2* (carnitine palmitoyltransferase II)	*cpt-2*
Charcot-Marie-Tooth disease, type 4B2	*SBF1* (SET-binding factor)	*mtm-5*
Chondrodysplasia punctata	*ARSA* (aryl sulfatase)	*sul-2*
Chronic granulomatous disease	*NCF1* (neutrophil cytosolic factor-1)	*itsn-1*
Cystic fibrosis	*CFTR* (ABC transporter)	*mrp-2*
Darier-White disease	*ATP2A1* (sarco-endoplasmic reticulum Ca^{2+} ATPase)	*sca-1*
Deafness, non-syndromic	*DIAPH1* (Rho GTPase binding)	*cyk-1*
Diabetes mellitus	*IRF4* (insulin)	Y53F4B.10
Friedreich ataxia	*FRDA* (mitochondrial protein required for Fe/S protein biosynthesis)	*frh-1*
Galactosemia	*GALT* (galactose-1-phosphate uridylyltransferase)	ZK1058.3
Gaucher disease	*GBA* (acid beta-glucosidase)	F11E6.1
Glucose-6-phosphate 1-dehydrogenase deficiency	*G6PD* (glucose-6-phosphate dehydrogenase)	B0035.5
Glutaricaciduria type IIC	*ETFDH* (electron-transferring-flavoprotein dehydrogenase)	*let-721*
Glycerol kinase deficiency	*GK* (glycerol kinase)	R11F4.1
Glycogen storage disease, type III	*AGL* (glycogen debranching enzyme isoform 6)	R06A4.8
Familial dysautonomia	*IKBKAP* (inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase complex-associated protein)	*elpc-1*
Hailey-Hailey disease	*ATP2C1* (Golgi P-type ATPase)	*pmr-1*
Hermansky-Pudlak syndrome	*AP-3* (adaptin)	*apm-3*
Hirschsprung disease	*ECE1* (endothelin-converting enzyme 1)	*F18A12.8*
Holoprosencephaly 5	*ZIC2* (zinc finger protein of cerebellum)	*ref-2*
Homocystinuria	*MTHFR* (methylenetetrahydrofolate reductase)	C06A8.1
Huntington's disease	*HD* (huntingtin)	F21G4.6
Hypogonadotropic hypogonadism	*GNRHR* (gonadotropin releasing hormone receptor)	*gnrr-1*
Isovalericacidemia	*IVD* (isovaleryl-CoA dehydeogenase)	*ivd-1*
Krabbe disease	*GALC* (galactocerebrosidase)	C29E4.10
Lissencephaly/Miller-Dieker sundrome	*LIS1* (platelet activating factor acetylhydrolase)	*lis-1*
Long QT-syndrome, type 1	*KVLQT1/LQT1* (potassium channel)	*kqt-3*
Lysosomal beta-mannosidase deficiency	*MANBA* (beta-mannosidase)	C33G3.4
Malignant hyperthermia/central core disease	*RYR1* (ryanodine receptor)	*unc-68*
Maple syrup urine disease, type Ia;	*BCKDHB* (branched chain keto acid dehydrogenase e1, alpha polypeptide)	F27D4.5

Maple syrup urine disease, type II	*DBT* (dihydrolipoamide branched chain transacylase)	ZK669.4
Marfan syndrome	*FBN1* (fibrillin)	*fbn-1*
Menkes syndrome	*ATP7A* (Cu^{2+} transporting ATPase)	*cua-1*
McArdle disease	*PYGM* (muscle glycogen phosphorylase)	T22F3.3
Migraine, familial hemiplegic	*CACNA1A* (alpha subunit, P/Q type voltage-dependent Ca^{2+} channel)	*unc-2*
Mucolipidosis type IV	*MLIV* (mucolipin-1)	*cup-5*
Muscular dystrophy, Duchenne/Becker	*DMD* (dystrophin)	*dys-1*
Muscular dystrophy, Fukuyama	*FCMD* (fukutin)	T07D3.4
Muscular dystrophy, limb-girdle, type 2D	*SGCA* (sarcoglycan alpha)	*sgca-1*
Muscular dystrophy, limb-girdle, type 2E	*SGCB* (sarcoglycan beta)	*sgcb-1*
Myoshi myopathy	*DYSF* (dysferlin)	*fer-1*
Myotonic dystrophy	*CUGBP1* (RNA binding protein)	*etr-1*
Neimann-Pick disease type B (NPB)	*ASM* (acid sphingomyelinase)	*asm-2*
Neimann-Pick disease type C1 (NPC1)	*NPC1* (patched membrane domain-containing permease)	*ncr-1* and *-2*
Neimann-Pick disease type C2 (NPC2)	*NPC2* (cholesterol-binding protein)	*heh-1*
Orotic aciduria I	*UPMS* (uridine monophosphate synthetase)	T07C4.1
Osteogenesis imperfecta	*COL4A2* (type IV collagen)	*let-2, emb-9*
Pallister-Hall syndrome	*GLI3* (GLI-Kruppel family transcription factor)	*tra-1*
Parkinson's disease	*PARK2* (parkin)	*pdr-1*
Pelizaeus-Merzbacher disease	*PLP1* (proteolipid protein 1)	*nmgp-1*
Phenylketonuria	*PAH* (phenylalanine-4-hydroxylase)	*pah-1*
Polycystic kidney disease, type 1	*PKD1* (polycystin-1)	*lov-1*
Polycystic kidney disease, type 2	*PKD2* (polycystin-1)	*pkd-2*
Refsum disease	*PHYH* (phytanoyl-coa hydroxylase)	ZK550.6
Schindler disease	*GALB* (alpha-galactosidase B)	*gana-1*
Severe combined immunodeficiency, X-linked	*IL2RG* (interleukin 2 receptor, gamma)	T20B12.4
Smith-Lemli-Opitz syndrome	*DHCR7* (7-dehydrocholesterol reductase)	B0250.9
Sorsby fundus dystrophy	*TIMP3* (tissue inhibitor of metalloproteinase 3)	*cri-2*
Spastic paraplegia 4	*SPAST* (spastin, AAA ATPase)	*spas-1*
Spinal muscular atrophy	*SMN* (survival motor neuron, an mRNA splicing protein)	*smn-1*
Spinocerebellar ataxia 1	*SCA1* (ataxin-1)	K04F10.1
Spinocerebellar ataxia 2	*SCA2* (ataxin-2)	*atx-2*
Stargardt disease	*ABCA4* (ABC transporter)	*abt-4*
Vitamin D-resistant rickets	*VDR* (steroid hormone receptor)	*daf-12*
Vitelliform macular dystrophy	*VMD2* (vitelliform macular dystrophy protein)	C01B12.3
Waardenburg syndrome	*PAX3* (paired homeobox domain)	*vab-3*
Werner syndrome	*WRN* (RecQ DNA helicase)	*wrn-1*
Wernicke-Korsakoff syndrome	*TKT* (transketolase)	D2007.2
Wilson disease	*ATP7B* (Cu^{2+} transporting ATPase)	*cua-1*
Xeroderma pigmentosum B/Cockayne syndrome	*ERCC2* (excision repair cross-complementing group 2)	Y50D7A.2
	ERCC3 (excision repair cross-complementing group 3)	Y66D12A.15
	ERCC5 (excision repair cross-complementing group 5)	*xpg-1*
Zellweger syndrome 3/Refsum disease	*PXMP3* (peroxisomal membrane protein 3)	*prx-2*
CANCER		
Adenomatous polyposis coli	*APC* (tumor suppressor in beta-catenin signaling pathway	*apr-1*
Cowden disease	PTEN (tumor suppressor, phosphatase and tensin)	*daf-18*
Hereditary non-polyposis colon cancer	*MLH1* (DNA mismatch repair)	*mlh-1*
	MSH2 (MutS DNA repair)	*msh-2*
Leukemia, juvenile myelomonocytic	*GRAF* (GTPase regulator associated with focal adhesion kinase)	T04C9.1
Li-Fraumeni syndrome	*TP53* (p53 tumor suppressor)	*cep-1*
Multiple endocrine neoplasia, type 2a	*RET* (receptor tyrosine kinase)	*egl-15*
Nevoid basal cell carcinoma syndrome	*PTCH* (SSD patched membrane protein)	*ptc-1*
Neurofibromatosis, type 2	*NF2* (talin family)	*nfm-1*
Pancreatic carcinoma	*DPC4* (TGFβ signal transducer)	*sma-4*
Retinoblastoma	*RB1* (tumor suppressor)	*lin-35*

Partial list of genes complied from several sources including WormBase, WormBook, OMIM and (7-9, 86)