Supplementary Materials

Molecular Biology of the Cell

Land *et al*.

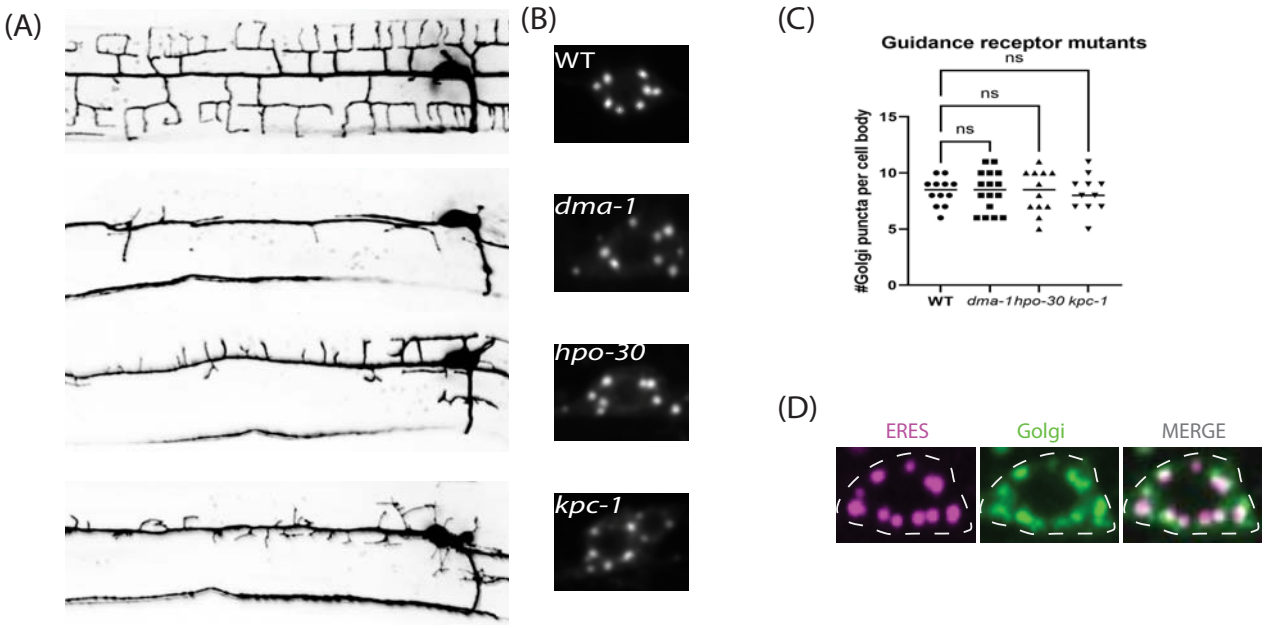

Figure S1 (related to Fig. 2). Guidance receptor mutants do not impact the number of early secretory structures. (A) PVD dendrite morphology of wild type and indicated mutants. (B) AMAN-2::GFP overexpression shown in PVD soma. (C) Quantification of number of AMAN-2::GFP puncta in somas of wild type and indicated mutants. See methods Table S1 for allele names. (D) ERES marker SEC-23::TAG-RFP (left) in WT PVD soma, along with the Golgi marker, AMAN-2::GFP (middle).

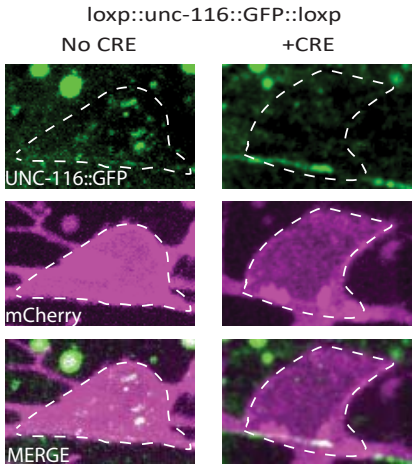

Figure S2 (related to Fig. 5). The CRE line used in this study, wyIs897, disrupts expression of floxed genes in PVD. Confocal fluorescence microscopic images of PVD soma in animals with the endogenously tagged gene loxP-UNC-116-GFP-loxP, without (left) or with (right) an integrated array (wyIs897) expressing CRE in PVD lineage cells. punc-86::mCherry::PLCdeltaPH is expressed via an extrachromosomal array and labels PVD membrane.

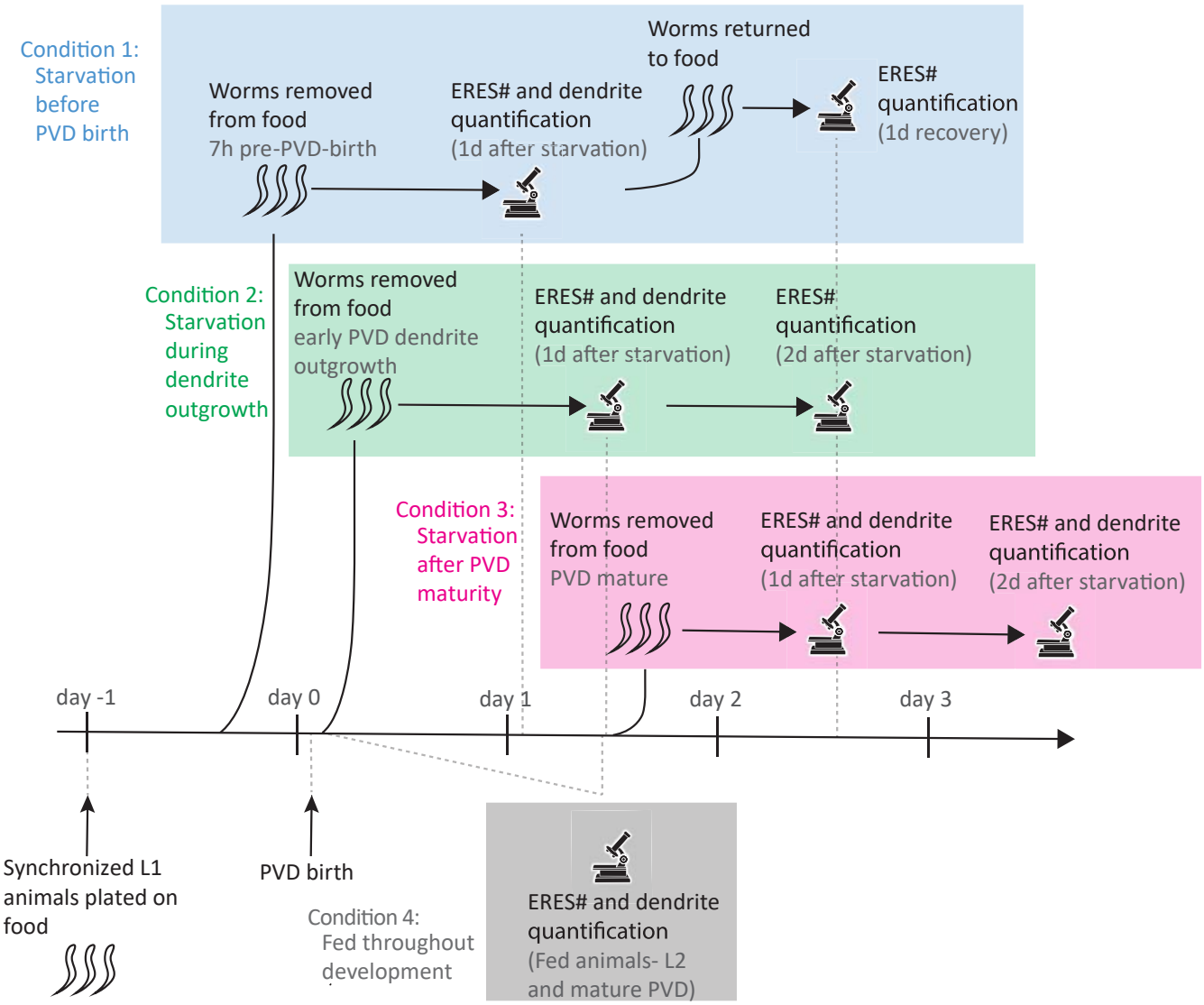

Figure S3 (related to Fig. 6). Diagram of starvation timelines. A graphic illustration of the experimental procedure for the starvation experiments shown in Figure 6.

Table S1:

Strain ID	Genotype
TV27272	*sec-16a.2(wy1524)* wyIs900 X; wyIs891 III; wyIs581 IV
TV28411	wyEx10586; *sec-16a.2(wy1524)* X; wyIs969 IV?
TV28412	wyEx10587; sec-16a.2(wy1524) X; wyIs969 IV?
TV27328	*ahr-1(ju145) I; sec-16a.2(wy1524)* wyIs900 X; wyIs891 III; wyIs581 IV
TV26984	wyEx10309; wyEx9857; wyIs592 III
TV24562	wyEx9857; wyIs592 III
TV25633	wyIs901 wyIs592 III; rab-1(wy1375) V/nT1 (IV; V)
TV27727	wyEx10429; wyIs581 IV; sec-16a.2(wy1524) wyIs900 X
TV27728	wyEx10429; *mec-3(e1338)* wyIs581 IV; *sec-16a.2(wy1524)* wyIs900 X
TV26084	wyIs50030
TV26063	*hpo-30(ok2047)*;wyIs50030
TV26064	*kpc-1(gk8)*; wyIs50030
TV26073	*dma-1(tm5159)*; wyIs50030
TV26068	*unc-86(e1416)*; wyIs50030
TV27747	*sec-16a.2(wy1524)* wyIs900 X; *lin-5(wy1576)* II; *zif-1(gk117)* III; wyIs581 IV
TV27812	wyEx9744; *lin-5(wy1576)* II; *zif-1(gk117) III*; wyIs969 (IV?); *sec-16a.2(wy1524)* wyIs900 X
TV27272	*sec-16a.2(wy1524)*/wyIs900 X; wyIs891 III; wyIs581 IV
TV27776	*let-363(ok3018)*/hT2 I; *sec-16a.2(wy1524)* wyIs900 X; wyIs891 III; wyIs581 IV
TV28329	*let-363[floxed atg + first 8 exons](wy1706)* I; wyIs901 wyIs592 III
TV27845	wyIs897 X? *sec-16a.2(wy1524)* X; wyIs969 IV? wyIs581 IV
TV28418	wyIs897 *sec-16a.2(wy1524)* X; *let-363[floxed atg + 8 exons](wy1706)* I; wyIs969 wyIs581 IV
Strain ID: 92278	Crossed from FR297[22]. rol-6(n1276e187); swEx226 [rol-6(su1006) *Plet-363/tor*::gfp]; *sec-16a.2(wy1524)* wyIs900 X; wyIs581 IV
Strain ID: 92276	rol-6(n1276e187); swEx226 [rol-6(su1006) *Plet-363/tor*::gfp]; *sec-16a.2(wy1524)* wyIs900 X; wyIs581 IV
TV25173	*unc-116(wy1311)*;wyIs897;wyEx9745

Mutant alleles	Notes
sec-16a.2(wy1524) X	CRISPR inserted AID::GFP::N-terminal_FRTonCassette(FRTminimal::Degron::STOP ::FRTminimal) fused at the 3' of endogenous *sec-16A.2*
rab-1(wy1375 [loxP::rab-1::loxP]) V	loxP sites flanking rab-1, injected into N2
ahr-1(ju145) I	obtained from CGC
sec-16a.2(wy1750)	CRISPR removed AID from sec-16a.2(wy1524)

[GFP::FRT::Degron::STOP::FRT::sec-16a.2] X	
lin-5(wy1576) II	lin-5::ZF knock in
let-363(ok3018)	(ortholog of mTOR) arrests during larval development in L3-early L4. Obtained from CGC
mec-3(e1338)	obtained from CGC
unc-86(e1416) III	obtained from CGC
hpo-30(ok2047)	
kpc-1(gk8)	
dma-1(tm5159)	
let-363(wy1706)	CRISPR added loxp sites. First loxp site is just after the closest upstream gene at the beginning of the putative let-363 promoter. The other loxP site is in the long intron after the 8th exon
unc-116(wy1311)	*loxP-unc-116-gfp-loxP* knock in worm. left loxP is inserted right before the start codon, right loxP was inserted to the 3'UTR region.

Integrated transgenes		
allele	constructs for injection	notes
wyIs900 X	plin-32>mCherry::PH(PLCδ) (pJL188, 1ng/µl) + punc-122>RFP (60ng/µl)	Integrant of wyEx9914 in ChrX
wyIs891 III	Punc-86::FLP (pDML63) 5ng/ul, 100 ng/ul Podr-1::RFP	Flippase (FLP) is used to excise FRT cassettes for cell-specific endogenous tagging of selected genes with XFP/tag
wyIs581 IV	ser2prom3::myrmCherry::unc-54 3'UTR (pOL036), with Podr-1::GFP	
wyIs969 IV?	plin-32::FLP (@5ng/ul) with podr-1::RFP (@60ng/ul). >6x outcrossed	Integrant of wyEx10429, probably on IV
wyIs592 III	ser2prom3::myr-GFP(pOL020, 20ng/ul) +Podr-1::RFP.	Integrant of wyEx3355, on chromosome III
iesi57	[eft-3p::TIR1::mRuby::unc-54 3'UTR + Cbr-unc-119(+)] II	Single copy transgene inserted into chromosome II (oxTi179) expressing modified Arabidopsis thaliana TIR1 tagged with mRuby in the soma. This strain can be used for auxin-inducible degradation (AID) in

		somatic tissues. Reference: Zhang L, et al. Development. 2015 Nov 9. pii: dev.129635.
wyIs836	Integrant of Pnhr-81::FLP (pDML60) 2.5ng/ul, 100 ng/ul Podr-1::RFP.	Flippase (FLP) is used to excise FRT cassettes for cell-specific endogenous tagging of selected genes with XFP/tag
wyIs50030	pPD95.77_ser-2Prom3::aman-2::GFP(2ng/ul) ser-2P3::mCherry(5ng/ul) Podr-1::GFP(50ng/ul)	
wyIs901	pnhr-81::cre + punc-122::rfp	Integrant of wyEx8881 on III
wyIs897	pnhr-81::cre + punc-122::rfp	integrant of wyEx8881, probably on X

Extrachromosomal transgenes		
allele	Constructs	notes
wyEx10586	Pmec-17::mscarlet(plasmid KE51) (1ng/ul); Podr-1::GFP (40ng/ul)	expresses mscarlet in touch receptor neurons
wyEx10429	plin-32::FLP (@5ng/ul) with podr-1::RFP (@60ng/ul)	Flippase (FLP) is used to excise FRT cassettes for cell-specific endogenous tagging of selected genes with XFP/tag
wyEx10587	FLP, PVD>mScarlet (Chris Tzeng plasmid @ 0.5 ng/uL); Punc-122::RFP (30ng/ul)	This array labels PVD and FLP in red
wyEx10309	Pser2prom3::sar-1-DN(dominant negative) (pCER218 @ 4ng/ul); Pmyo2::GFP @ 2ng/ul	
wyEx9857	ser2prom3::sec-23::tagrfp, Pmyo-2::rfp.	
wyEx9744	pMK41 (punc-86::mCherry::PLCdeltaPH) @ 2.5 ng/ul + pMK32 (punc-86::zif-1) @ 2.5 ng/ul + Podr-1::gfp @ 30 ng/ul	expresses zif-1 in PVDmother (for degradation of lin-5)
wyEx10429	plin-32::FLP (@5ng/ul) with podr-1::RFP (@60ng/ul)	Flippase (FLP) is used to excise FRT cassettes for cell-specific endogenous tagging of selected genes with XFP/tag
swEx226	swEx226 = [rol-6(su1006) + let-363/tor::gfp] Made by injecting 50 ug/ml pG70.3 and 200 g/ml pRF4 rol-6(su1006)	Originally from FR297[22]
wyEx9745	pMK41 (*punc-86::mCherry::PLCdeltaPH*) @ 5 ng/ul + Podr-1::gfp @ 30 ng/ul.	Can see early PVD membrane in red

wyEx10220	Pdes-2::AMAN-2::GFP with Podr-1::GFP.	Labels PVD Golgi
wyEx9857	Pser2prom3::sec-23::tagrfp with Pmyo-2::rfp	Labels PVD ERESs