

Supplemental Materials

Molecular Biology of the Cell

Maguire et al.

Supplemental Materials

Supplemental Figure Legends:

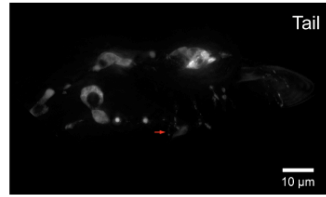
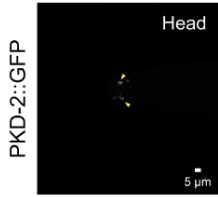
Supplemental Figure 1: CIL-7 has Invertebrate Homologs that All Share a Predicted Myristoylation Motif. (A) The Cil phenotype of *cil-7(my16)* males could be rescued by injection (0.3 ng/ μ l) of a *cil-7* genomic clone. (B) The *tm5848* allele failed to complement the *my16* allele producing Cil males. (C) Maximum likelihood phylogenetic tree of protein sequences showing similarity to W03G9.7 (pBLAST <1e-5). Sequences showing the conserved myristoylation sequence (1-17aa) are marked with a triangle. (D) Conservation of the N-terminal glycine is exhibited in invertebrate homologs.

Supplemental Figure 2: Endogenous PKD-2 Accumulated Abnormally at Ciliary Bases in Male-Specific CEM neurons of *cil-7(tm5848)* Males. (A, D) An α -PKD-2 antibody labeled cilia and ciliary bases and was excluded from the transition zone. (C, F) NPHP-4::GFP (driven by the *pkd-2* promoter) specifically marked CEM transition zones. (B, E) In the merged image, the majority of endogenous PKD-2 was found at the ciliary bases in wild-type and *cil-7(tm5848)* CEM cilia. In *cil-7*, the abnormal ciliary base accumulation of endogenous PKD-2 correlated with the abnormal accumulation of EVs in TEM images (Figure 3). yellow bracket – cilia; white bracket – cilia base; white asterisks – transition zone.

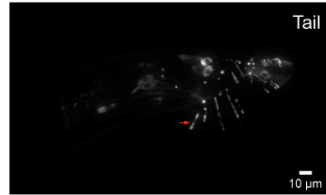
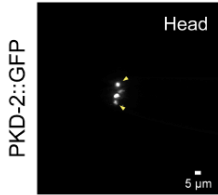
Supplemental Figure 3: Endogenous LOV-1 and PKD-2::GFP Accumulated Abnormally in the Male-Specific Neurons of *cil-7(tm5848)* Males. (A-C) PKD-2::GFP and α -LOV-1 colocalized in CEM, RnB, and HOB neurons. (D-F) PKD-2::GFP and α -LOV-1 abnormally accumulated at the ciliary bases of CEM, RnB, and HOB neurons. Yellow arrow – cilia; red arrow – dendrite; white arrow – cell body.

Supplemental Figure 4: The Kinesin-3 KLP-6 is Required for Normal CIL-7 Localization. (A) In wild-type CEM and IL2 neurons *Pcil-7::CIL-7::GFP* localized to cilia and along dendrites. (B) In *klp-6(my8)*, *CIL-7::GFP* abnormally localized to bases of cilia as nodules. (C,D) In wild type, *KLP-6::GFP* was found throughout the male sensory neurons and the shared IL2 neurons. In a *cil-7(tm5848)* mutant, the localization of *KLP-6::GFP* was not altered. Yellow arrow and yellow bracket – cilia; white bracket – cilia base; red arrow – dendrite; white arrow – cell body.

A *cil-7(my16); Ex[cil-7(+)]*



B *cil-7(my16)/cil-7(tm5848)*

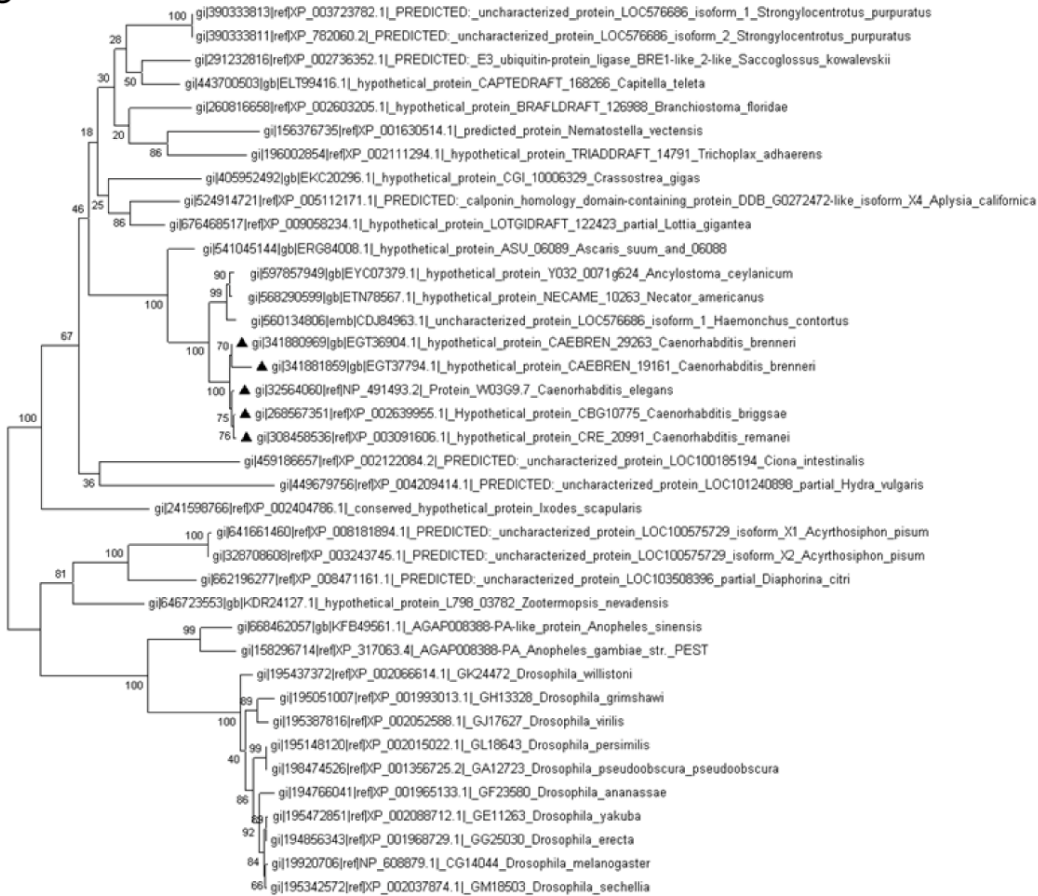


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<i>C. elegans</i>	w03G9.7 [NP_491493]	: MGS	SPSKRSDPVEDIRK
<i>C. brenneri</i>	[EGT36904]	: MGS	SPSKRSDQVEIISK
<i>D. melanogaster</i>	[NP_608879]	: MGC	GSMDTQTNPVVTE
<i>A. californica</i>	[XP_005112171]	: MGC	GNKSKAVDLSSGQ
<i>S. purpuratus</i>	[XP_003723782]	: MGC	ASSAQGGPAYPKQ
<i>S. kowalevskii</i>	[XP_002736352]	: MGC	AISSQDAGTSTQSKG

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