Supplemental Data

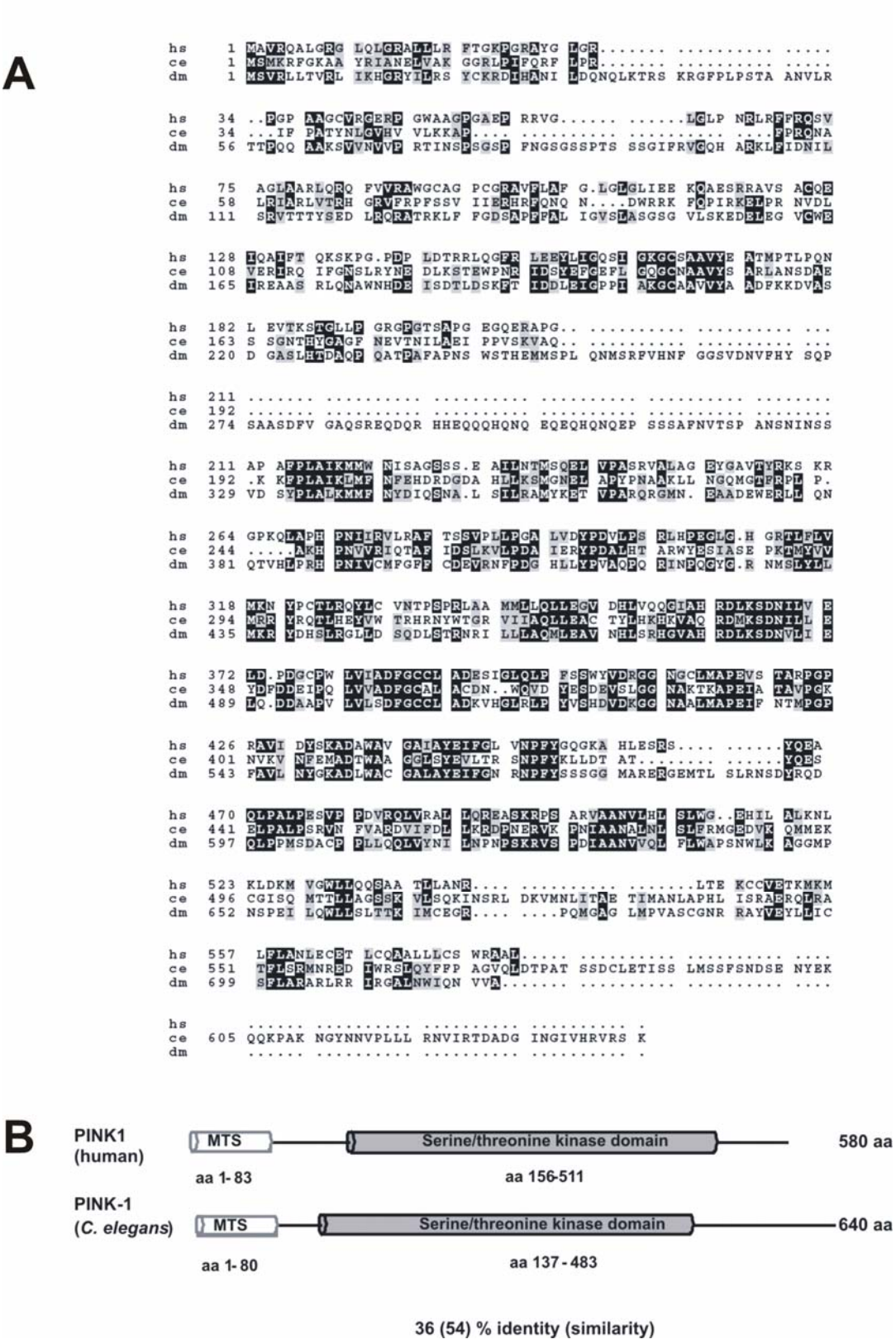
Supplementary Fig. 1. PINK-1 is evolutionarily conserved from nematodes to mammals. A, The sequence alignment of PINK-1/PINK1 proteins. Sequence identity is highlighted in black; grey shading indicates sequence similarity. Predicted amino acid sequences were aligned with ClustalW: Ce, *C. elegans* PINK-1 (accession number: Q09298); hs, human PINK1 (accession number: NP_115785); ds, *Drosophila* PINK1 (accession number: JU0270). B, Schematic comparison of *C. elegans* PINK-1 and human PINK1 proteins. MTS: Mitochondrial targeting sequence. Identity and similarity values of amino acid sequences of the kinase domain are shown.

Supplementary Fig. 2: *tm1779* represents a loss-of-function allele for *pink-1*. A, Genomic structure of the *pink-1* locus. Exons and introns are indicated by boxes and lines, respectively. The promoter region is presented in the upper panel by boxed arrow. The genomic region that is removed in the *tm1779* deletion mutant is indicated in the lower panel. The solid line in the upper panel represents the probe used for northern blot analysis. B, Northern blot analysis reveals that the transcription of the *pink-1* gene is completely abolished in the *tm1779* mutant. *act-1* was used as loading control.

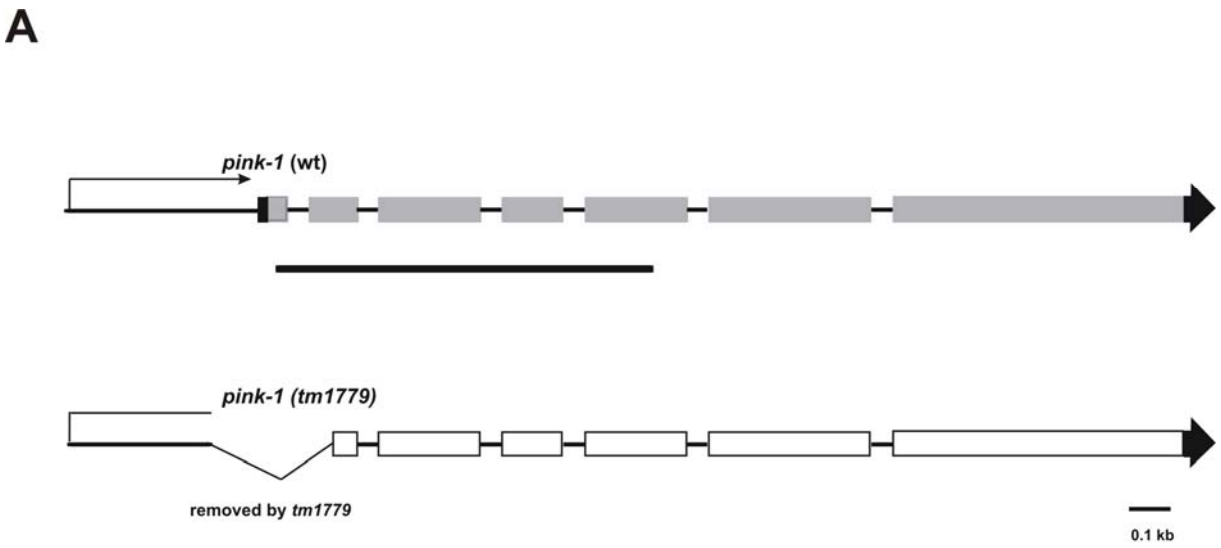
Supplementary Fig. 3: *lrk-1* is expressed ubiquitously in *C. elegans*. The expression pattern of *lrk-1* was investigated by transgenic expression of a P_{lrk-1}*::lrk-1::gfp* construct in four independent lines (BR4118, BR4119, BR4120, and BR4121). *lrk-1* is ubiquitously expressed in all body regions including head and tail neurons (A and I), the pharynx (A), the distal tip cells (arrowheads), the canal-associated neurons (CAN; open arrowheads) and vulva epithelium (asterisk). A-B, Head region (head neurons, pharyngeal muscles). C-D, Mid body region (vulva epithelium, DTCs). E-F, Expression in the hypodermis. G-H, Mid body region (CAN, vulva epithelium). I-J, Tail region (tail neurons). The corresponding DIC pictures are shown (B, D, F, H and J). Scale bars represent 20 µm.

Supplementary Fig. 4. *pink-1* mutant animals display CAN neurite pathfinding defects. Fluorescence micrographs of GFP expression in the CAN neurons of L4 larval animals carrying the integrated transgene *lqIs4[ceh-10::gfp]* (20). A, Wild type (wt) animals showed normal posterior CAN axon pathfinding and CAN cell migration. B, *pink-1(tm1779)* animals displayed CAN axon pathfinding defects, a representative animal is displayed. The enlarged sector shows a 40-fold magnified view of the misguided CAN axon. Scale bar: 50 µm.

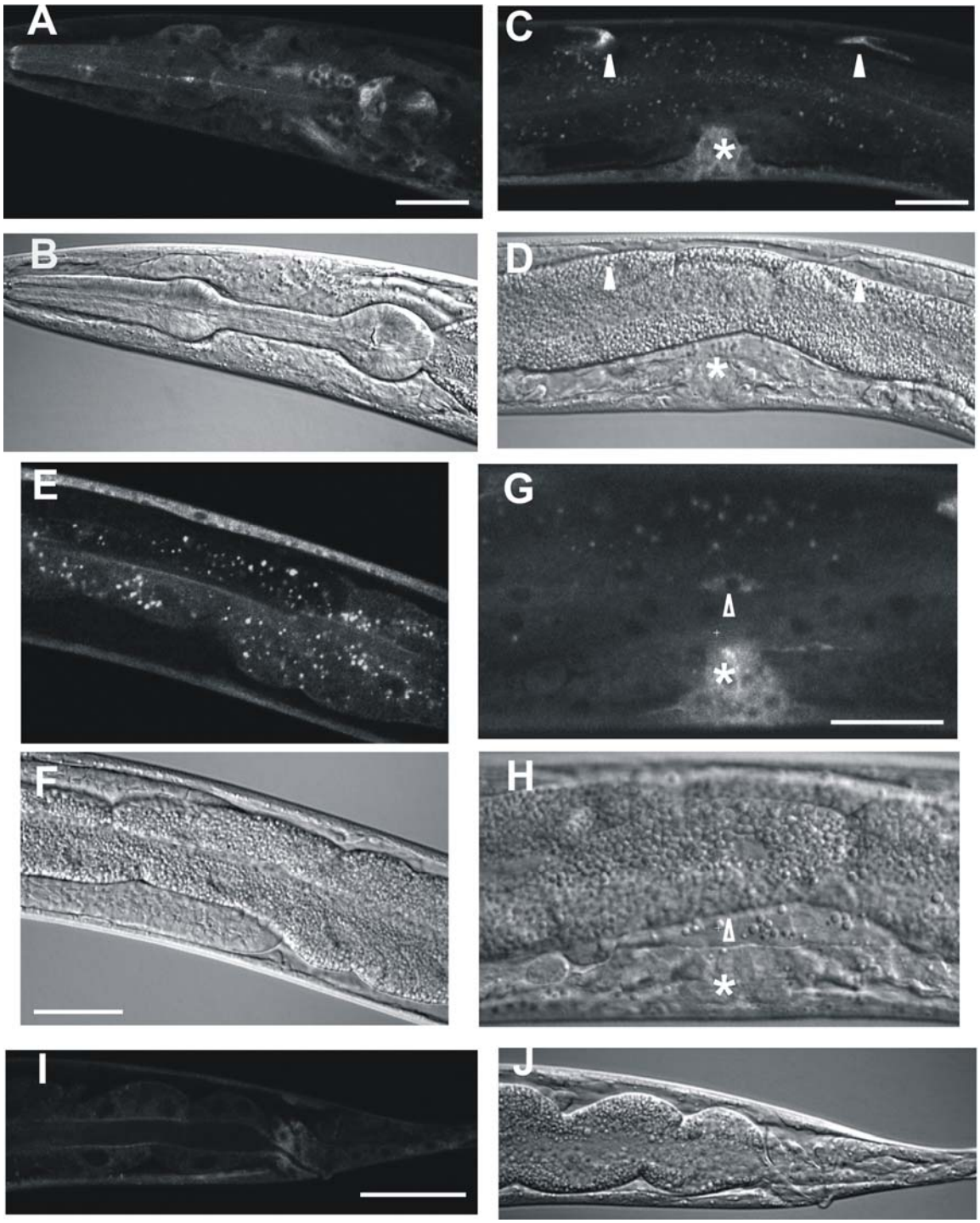
Supplementary Fig. 1



Supplementary Fig. 2



Supplementary Fig. 3



Supplementary Fig. 4