

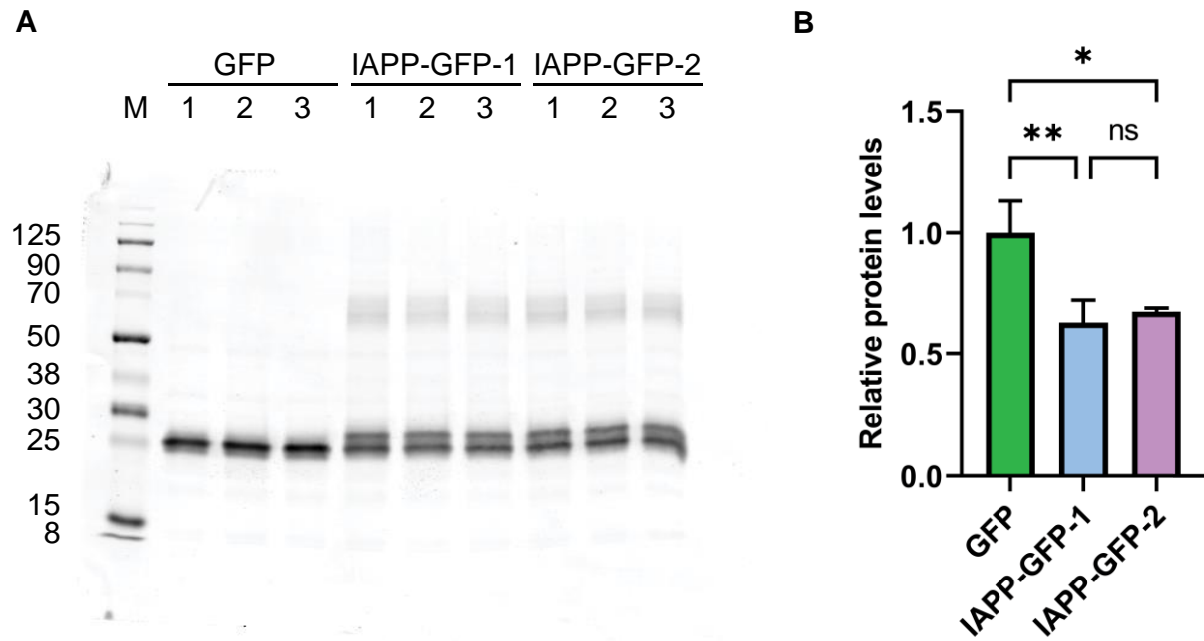
**Supplementary information for:**

**Islet amyloid polypeptide tagged with green fluorescent protein localises to mitochondria and forms filamentous aggregates in *Caenorhabditis elegans***

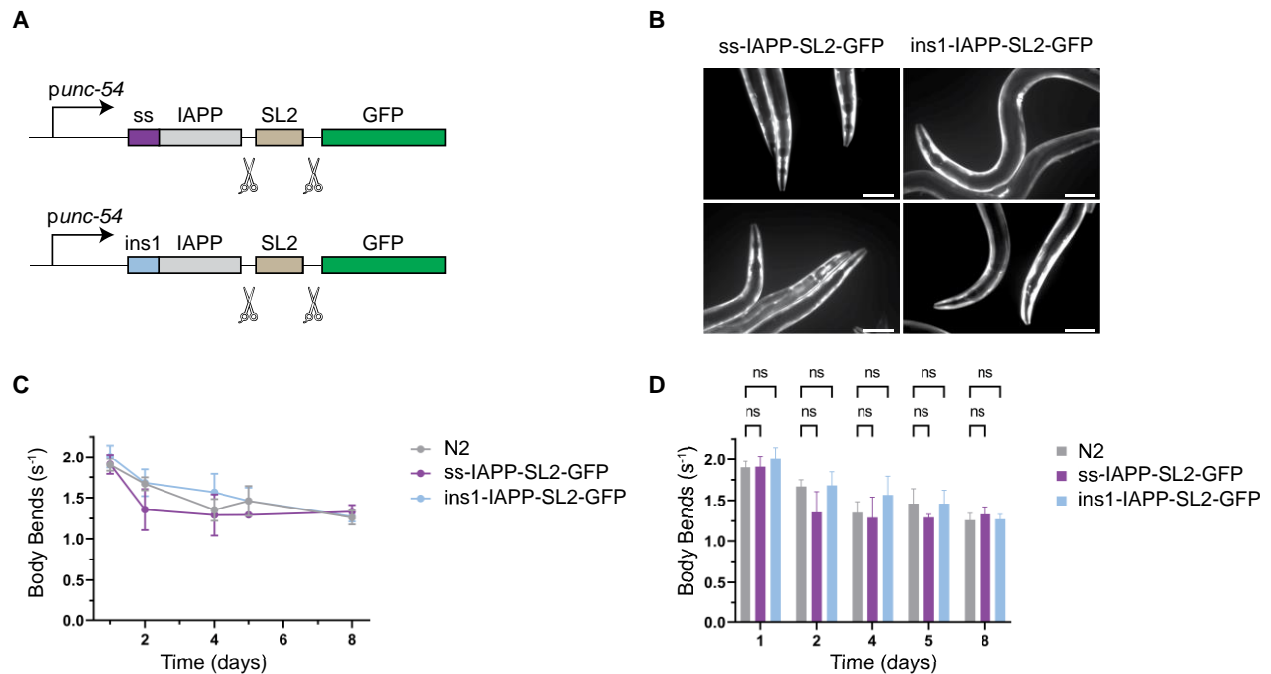
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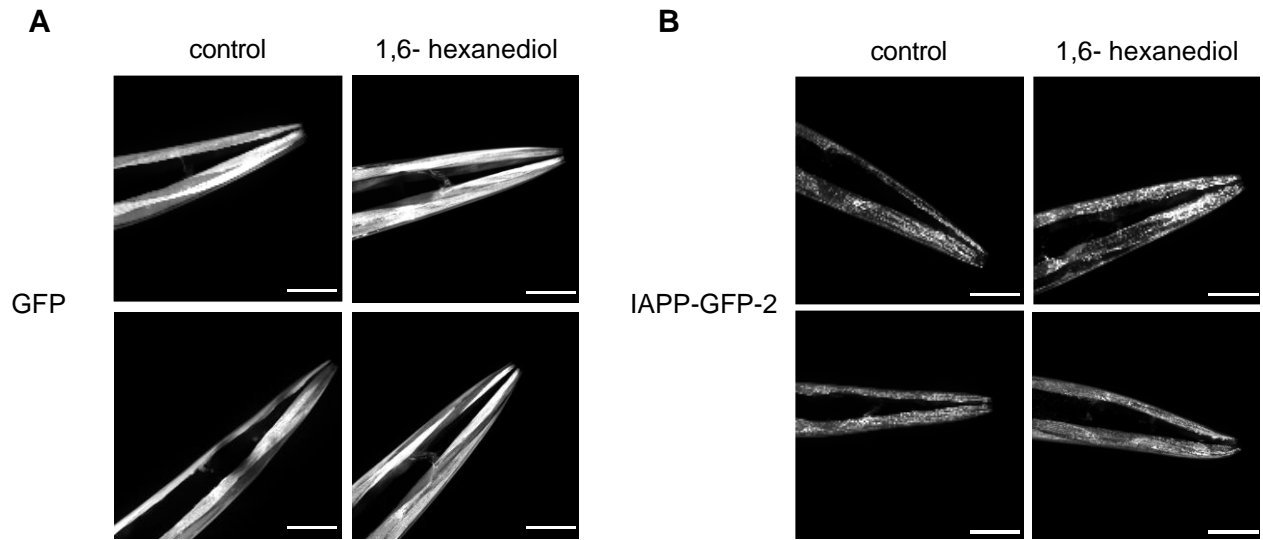
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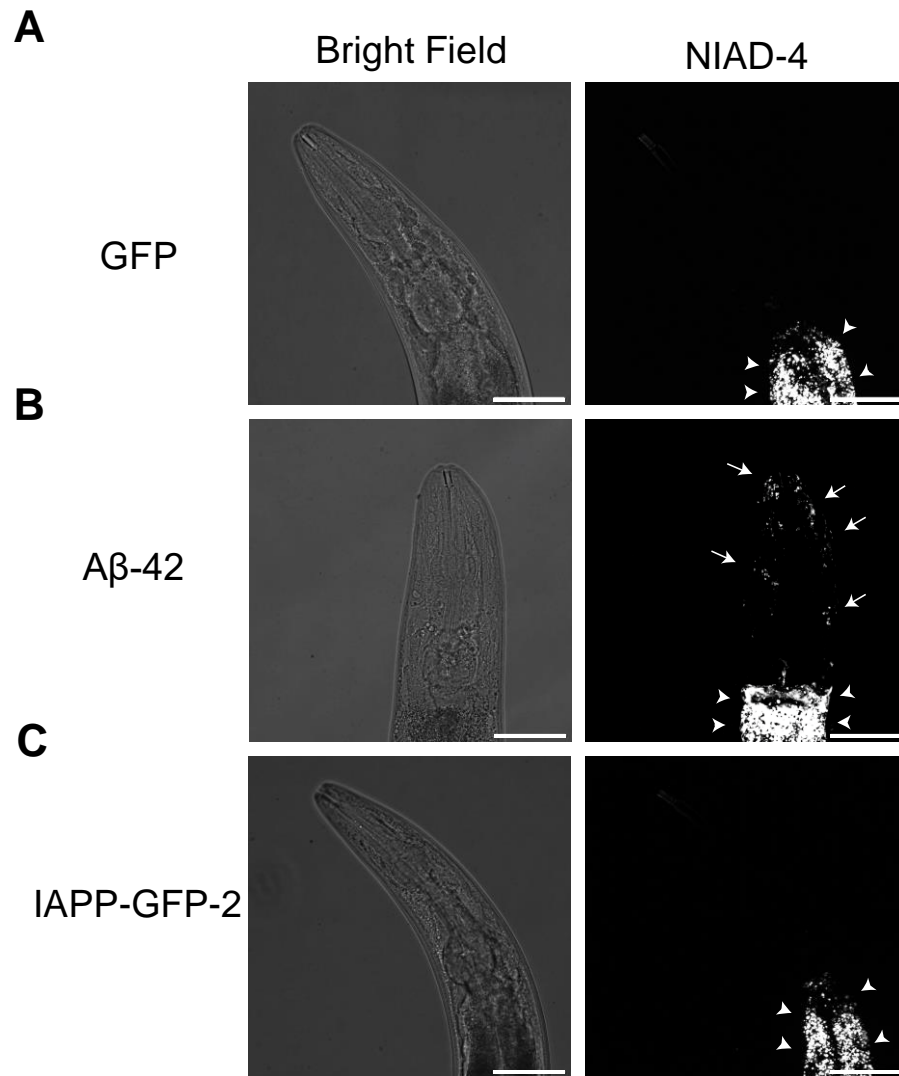
**Figure S1:** IAPP-GFP strains show similar protein expression levels. **(A)** IAPP-GFP protein expression validated by GFP western blot. Worm lysates were separated on SDS-PAGE and membranes were blotted with an anti-GFP antibody. **(B)** Quantification of the western blot. IAPP-GFP runs as a double band, the lower one corresponding to the size of GFP which is presumably a cleavage product. Both bands were included in the quantification. One-way ANOVA analysis with Tukey multiple comparison test was used for analysis. (\*  $p < 0.05$ ; \*\*  $p < 0.01$ )



**Figure S2:** Construction of body wall muscle cell specific *C. elegans* IAPP-SL2-GFP models. **(A)** Schematic design of the constructs used to generate ss-IAPP-SL2-GFP and ins1-IAPP-SL2-GFP strains. **(B)** Fluorescence microscopy images validating the expression of GFP in the body wall muscle cells. (Scale bar 100  $\mu\text{m}$ ) **(C)** Motility assay to monitor protein toxicity. Wild-type (N2) strain was used as the control group. Data collection and analysis were done in a blinded manner and at least 30 worms were used for each data point. **(D)** Quantification of the motility assay. Two-way ANOVA analysis with Dunnet multiple comparison test was employed for statistical analysis. (\*  $p < 0.05$ ; \*\*  $p < 0.01$ )



**Figure S3:** IAPP-GFP distribution does not change by 1,6-hexanediol treatment. 1,6-hexanediol treated **(A)** GFP and **(B)** IAPP-GFP-2 strains showed similar distribution as mock treated control groups. (Scale bar 50  $\mu$ m)



**Figure S4:** Representative images of NIAD-4 stained amyloid deposits in **(A)** GFP, **(B)** A $\beta$ -42 and **(C)** IAPP-GFP-2 strains. Only A $\beta$ -42 showed NIAD-4 specific amyloid deposits (arrows). The remaining bright signal corresponds to unspecific staining of the intestine (arrow heads). (Scale bar 50  $\mu$ m)

**Table S1:** Plasmids used in this study

Plasmid	Description
pDEST R4-R3 Vector II (Invitrogen)	Ampicillin resistant general cloning vector
pMA05	Body wall muscle cell specific ss-IAPP-SL2-GFP expression plasmid
pMA06	Body wall muscle cell specific ins1-IAPP-SL2-GFP expression plasmid
pMA08	Body wall muscle cell specific IAPP-GFP expression plasmid
pMA09	Body wall muscle specific GFP expression plasmid

**Table S2:** Oligonucleotides used to generate IAPP-GFP construct (pMA08)

Primer	Sequence
<i>unc-54</i> fwd	5'- aacatatccagtcactatgGCTGCAGTGAGTATTTTCGG- 3'
<i>unc-54</i> rev	5'- cattttctgaaaagcctgctacgtCTCGCTTCTTTCAAATGGTT- 3'
IAPP fwd	5'- acgtagcaggctttcagaaaaATGAAATGCAACACTGCCACATG- 3'
IAPP rev	5'-gccactttgtacaagaaagctgggctATATGTATTGGATCCCACGTTGG- 3'
GFP fwd	5'-gaccagctttctgtacaaagtgggcATGAGTAAAGGAGAAGAAGACTTTTC- 3'
<i>unc-54</i> 3'UTR rev	5'-gagaaaataccgcatcaggcGGCCGACTAGTAGGAAACAG - 3'

**Table S3:** Oligonucleotides used to generate IAPP-SL2-GFP constructs (pMA05 and pMA06)

Primer	Sequence
SL2 fwd	5' -tgggatccaatacatattaaGCTGTCTCATCCTACTTTCACC- 3'
SL2 rev	5' -ctttactcatttttctaccggtacaGCAGTTTC- 3'
GFP fwd	5' -ggtagaaaaaATGAGTAAAGGAGAAGAAGACTTTTCACTG- 3'
<i>unc-54</i> 3'UTR rev	5' -gagaaaataaccgcatcaggcGGCCGACTAGTAGGAAACAG- 3'
ins1-IAPP oligo sequence	5'-tttcagaaaaATGTA <u>CTGGTTTTCGTCAAGTTTACAGACCCTCGTTCTTCTTT</u> <u>GGCTTTCTCGCGATCCTTCTCCTCTCGTCGCCGACGCCTTCAGACGCA</u> AAATGCAACACTGCCACATGTGCAACGCAGCGCCTGGCAAATTTTTTAGT TCATTCCAGCAACAACCTTTGGTGCCATTCTCTCATCTACCAACGTGGGAT CCAATACATAtaa
ss-IAPP oligo sequence	5'- tttcagaaaaATGCATAAGGTTTTGCTGGCACTGTTCTTTATCTTTCTGG <u>CACCAGCAGGTACCGACGCGAAATGCAACACTGCCACATGTGCAACGC</u> AGCGCCTGGCAAATTTTTTAGTTCATTCCAGCAACAACCTTTGGTGCCATT CTCTCATCTACCAACGTGGGATCCAATACATAtaa