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Supplemental information

SKN-1 regulates stress resistance

downstream of amino catabolism pathways

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Figure S1. *amdh-1* mutants do not upregulate *gcs-1* expression, Related to Figure 1

(A) Schematic of *amdh-1/T12A2.1* genomic locus showing the location of allele *uth29* engineered using CRISPR/Cas9 (top, arrow). Scale bar, 100 bases. (B) Fluorescent images of SKN-1 reporter worms (*gcs-1p::GFP*) fed RNAi targeting *amdh-1* and *wdr-23*. Scale bar, 100 μ m. (C) Quantification of (B), Data shown are representative of n = 4 biological replicates with n > 60 animals per condition for each replicate. **** = P < 0.0001, n.s. = not significant using a one-way ANOVA non-parametric test (Kruskal-wallis).

Figure S2. *gcn-2* and *let-363* are partially required for SKN-1 activation in *amdh-1* mutants, Related to Figure 2

(A) Fluorescent images of SKN-1 reporter animals (*gst-4p::GFP*) fed RNAi targeting. Scale bar, 100 μ m. (B) Quantification of (A), Data shown are representative of n = 2 biological replicates with n > 123 animals per condition for each replicate. (C) Table of causative mutations mapped using whole genome sequencing.

Figure S3. *haly-1* is required for SKN-1 activation in *amdh-1* mutants, Related to Figure 3

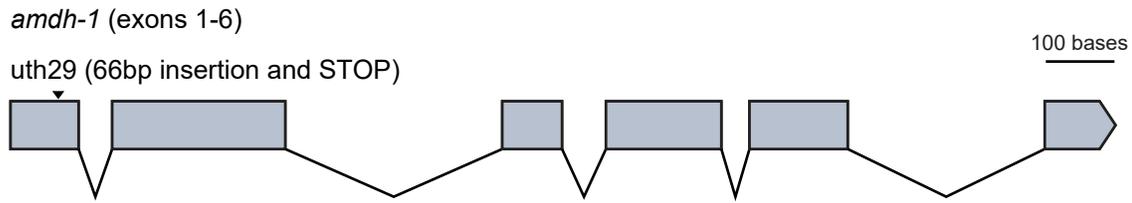
(A) Schematic of *haly-1* genomic DNA (gDNA) rescue array used for genetic rescue experiments to confirm causality (B) Fluorescent images of *haly-1; amdh-1* double mutants with or without *haly-1* gDNA rescue array. Scale bar, 100 μ m.

Figure S4. Stress response pathways are not activated in *amdh-1* mutants, Related to Figure 4

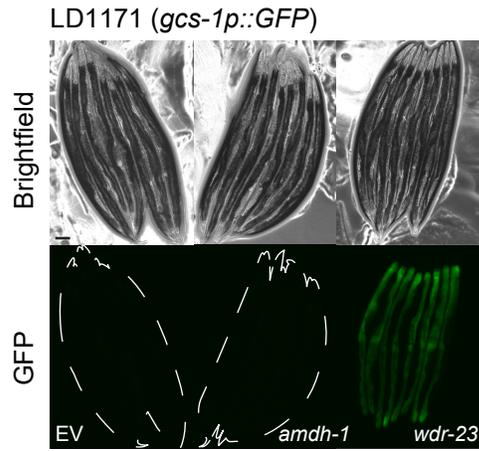
(A) Fluorescent images of heat shock response (HSR) reporter animals (*hsp-70p::GFP*) with or without heat shock treatments (34°C) in wildtype and *amdh-1(uth29)* mutant animals. Data shown are representative of $n = 3$ biological replicates. Scale bar, 100 μm . (B) Fluorescent images of a reporter of the unfolded protein response of the ER (UPR ER) animals (*hsp-4p::GFP*) fed RNAi. Scale bar, 100 μm . (C) Quantification of (B), Data shown are representative of $n = 3$ biological replicates with $n > 50$ animals per condition for each replicate. **** = $P < 0.0001$, n.s. = not significant using a one-way ANOVA non-parametric test (Kruskal-wallis) (D) Fluorescent images of UPR Mito reporter animals (*hsp-6p::GFP*) fed RNAi. Scale bar, 100 μm . (E) Quantification of (D), Data shown are representative of $n = 3$ biological replicates with $n > 50$ animals per condition for each replicate. **** = $P < 0.0001$, n.s. = not significant using a one-way ANOVA non-parametric test (Kruskal-wallis)

Figure S1

A



B



C

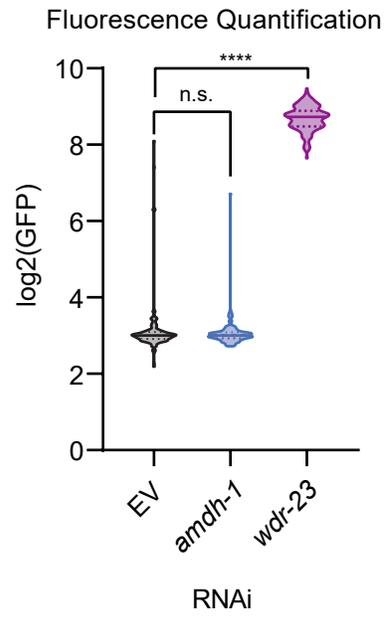
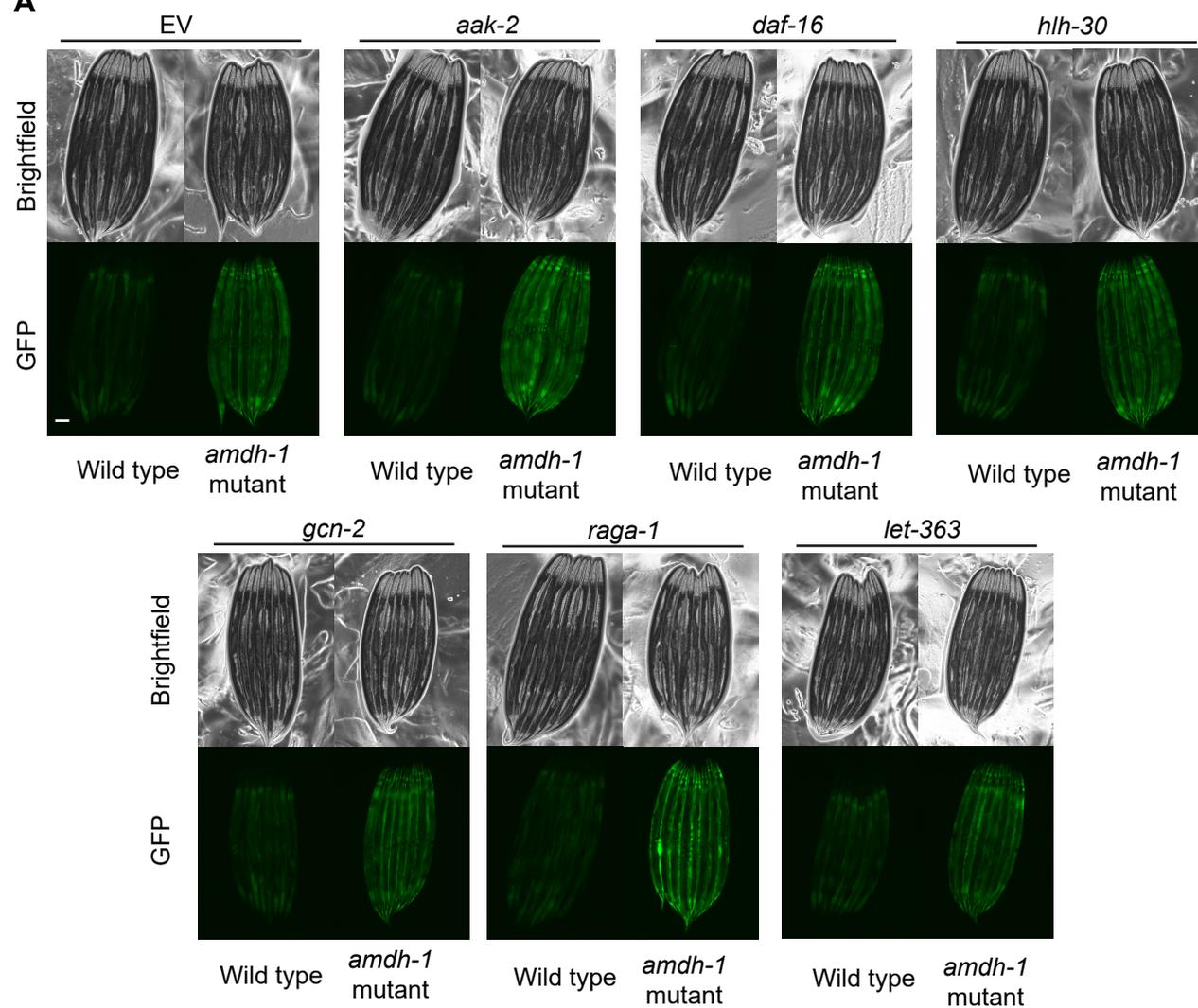
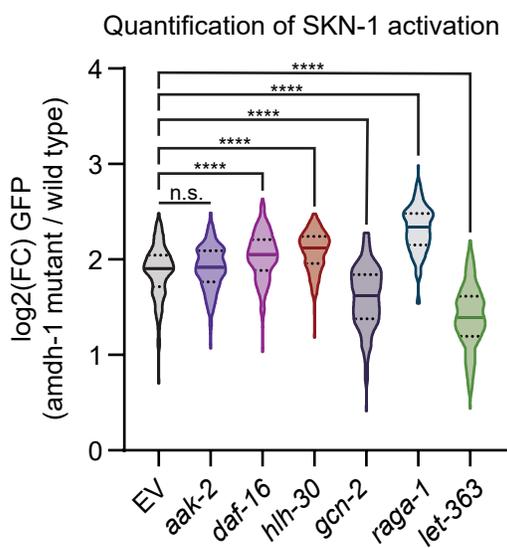


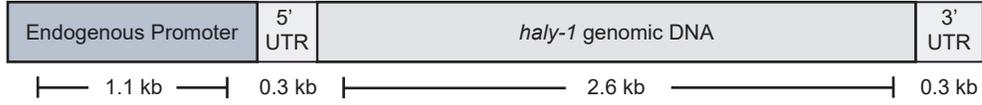
Figure S2**A****B****C**

Allele	Gene	Mutation
<i>uth89</i>	<i>skn-1</i>	A514T
<i>uth94</i>	<i>elt-3</i>	Q128*
<i>uth112</i>	<i>suco-1</i>	A429M
<i>uth92</i>	<i>haly-1</i>	G134E
<i>uth93</i>	<i>haly-1</i>	G265E
<i>uth95</i>	<i>haly-1</i>	G551V

Figure S3

A

haly-1 gDNA rescue array



B

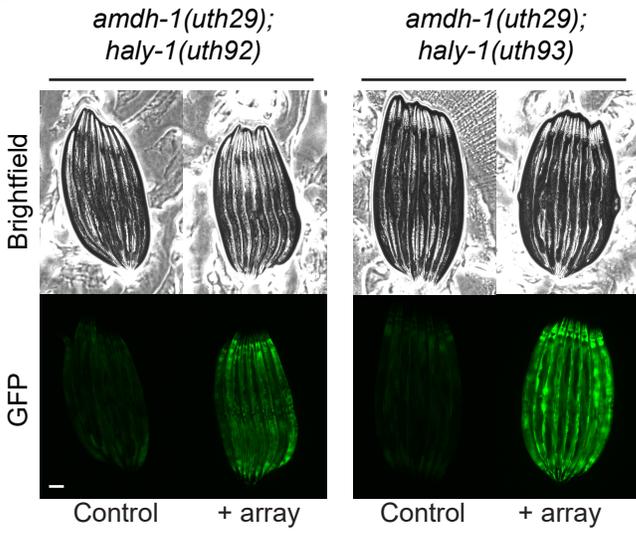
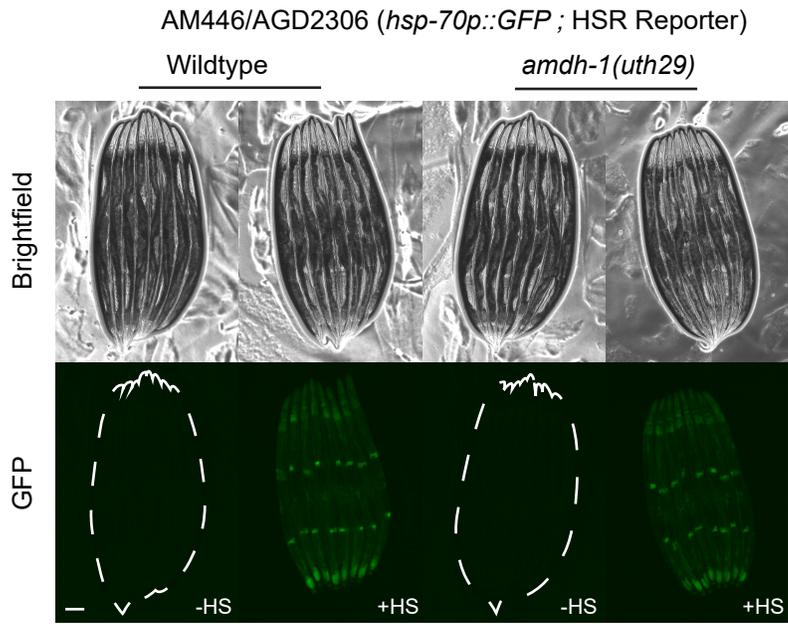
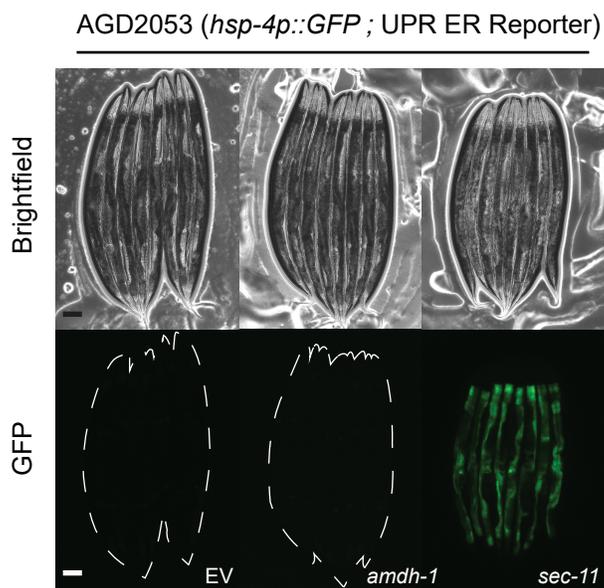


Figure S4

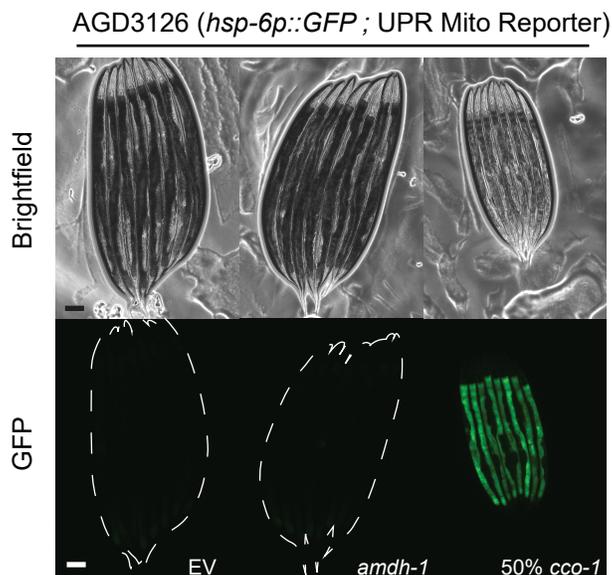
A



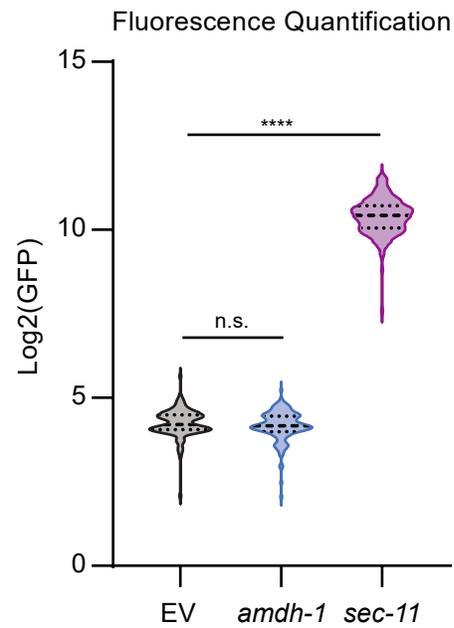
B



D



C



E

