**Supplementary Information for**

**Sensory experience controls dendritic structure and behavior by distinct pathways involving degenerins**

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**This file includes:**

Supplementary file 1a

Supplementary file 1b

Supplementary References

**Supplementary file 1a.** List of strains and transgenes used in this work

|  |  |  |
| --- | --- | --- |
| **Strain** | **Genotype** | **Details** |
| N2 | Wild-type | (1) |
| JPS282 | *asic-1(ok415) I*; *vxEx282[WRM0621dC07 + unc-122p::GFP]* | CGC |
| VC244 | *gtl-1(ok375) IV* | CGC |
| SS104 | *glp-4*(*bn2*) *I* | CGC (2) |
| CB1338 | *mec-3(e1338) IV* | CGC (3) |
| MT1085 | *unc-8(n491) IV* | CGC (4) |
| VC2633 | *degt-1(ok3307)* *V* | CGC (5) |
| DR466 | *him-5(e1490) V* | CGC |
| NC279 | *del-1(ok150) X* | CGC (5) |
| CB1611 | *mec-4(e1611)* *X* | CGC (6) |
| ZB2551 | *mec-10(tm1552)* *X* | CGC (5) |
| JPS478 | *asic-1(ok415) I*; *mec-10(tm1552)* *X*; *vxEx478[sto-5p::asic-1(+) unc-122p::GFP]* | CGC |
| AQ3272 | *ljEx637[PF49H12.4::DEGT-1::mCherry Punc-122::GFP]* | Provided by W. Schafer (5) |
| AQ3273 | *ljEx638[PF49H12.4::MEC-10::mCherry Punc-122::GFP]* | Provided by W. Schafer (5) |
| ZX819 | *lite-1(ce314) X*; *zxIs12*[*pF49H12.4::ChR2::mCherry pF49H12.4::GFP*] | Provided by A. Gottschalk (7) |
| BP709 | *hmnIs133(ser-2Prom3::Kaede)* | Provided by M. Heiman (13( and used by T. Gattegno (8) |
| BP925 | *mec-4(e1611) X;* *hmnIs133(ser-2Prom3::Kaede)* | Cross (9) |
| BP1021 | *him-5(e1490) V*; *hmnIs133(ser-2Prom3::Kaede)* | Cross: BP709 X DR466 |
| BP1022 | *mec-10(tm1552)* *X*; *hmnIs133(ser-2Prom3::Kaede)*; *him-5(e1490)* *V* | Cross: BP1021 X JPS478 |
| BP1023 | *asic-1(ok415) I*; *him-5(e1490)* *V; hmnIs133(ser-2Prom3::Kaede)* | Cross: BP1021 X JPS478 |
| BP1024 | *asic-1(ok415) I; mec-10(tm1552)* *X*; *him-5(e1490) V;* *hmnIs133(ser-2Prom3::Kaede)* | Cross: BP1021 X JPS478 |
| BP1025 | *asic-1(ok415) I; degt-1(ok3307) V*; *mec-10(tm1552) X* | Cross: BP1024 X VC2633 |
| BP1026 | *degt-1(ok3307) V; mec-10(tm1552) X* | Cross: BP1024 X VC2633 |
| BP1027 | *degt-1(ok3307)* V; *hmnIs133(ser-2Prom3::Kaede)* | Cross: BP1021 X VC2633 |
| BP1028 | *asic-1(ok415) I; degt-1(ok3307)* *V; hmnIs133(ser-2Prom3::Kaede)* | Cross: BP1025 X BP1027 |
| BP1029 | *mec-10(tm1552); degt-1(ok3307) V; hmnIs133(ser-2Prom3::Kaede)* | Cross: BP1025 X BP1027 |
| BP1030 | *asic-1(ok415) I; mec-10(tm1552) X; degt-1*(*ok3307) V*; *hmnIs133(ser-2Prom3::Kaede)* | Cross: BP1025 X BP1027 |
| BP1031 | *degt-1(ok3307) V*; *ljEx638[PF49H12.4::mec-10::mCherry Punc-122::GFP*] | Cross: VC2633 X AQ3273 |
| BP1033 | *mec-10(tm1552) X*; *ljEx637[PF49H12.4::degt-1::mCherry Punc-122::GFP]* | Cross: BP1022 X AQ3272 |
| BP1034 | *mec-10(tm1552) X*; *hmnIs133(ser-2Prom3::Kaede); him-5(e1490) V; hyEx321[ser-2Prom3::mec-10genomic]* | pWRS825 plasmid provided by W. Schafer (5) was injected into BP1022 |
| EB1982 | *dzIs53[pF49H12.4::mCherry]* *II* | Provided by Y. Salzberg (10) |
| TV17924 | *wyls50007[ser2prom3*::GCaMP6 *egl-17*::*mCherry] X* | Provided by K. Shen (11,12) |

**Supplementary file 1b**. List of primers used in this work

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| **Gene** | **Sequence of the primer** |
| *asic-1(ok415)*I | Forward-1: 5' aactggtgtggccacttcaactttc 3’; Forward-2: 5’ aaggtttcagatgatcgcgtagtcaag 3’; Reverse: 5’ catttctcttcttccgtcagcgc 3’ |
| *mec-10(tm1552)* X | Forward-1: 5’ acacggctccttcttgagttccga 3’;  Forward-2: 5’ attcggtttcctcctcttcttccaatgc 3’ ;  Reverse: 5’ cgtttttttcagcgccctttcctgca 3’ |
| *degt-1(ok3307)* V | Forward-1:5’cgagtagctgattatcaaaaagtcctcga 3’;  Forward-2: 5’ cggatattccagcattggcgaa 3’;  Reverse: 5’ ttccccgttgatcttctatgtattaca 3’ |

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