

Supplementary Information

Supplementary Videos

Video S1. Drop assay - response to buffer

Response of a wild-type *C. elegans* adult hermaphrodite to a drop of M9 buffer.

Video is also available at <https://youtu.be/IbDuQH3IdY>

Video S2. Drop assay - response to worm extract

Response of a wild-type *C. elegans* adult hermaphrodite to a drop of worm extract.

Video is also available at https://youtu.be/AblreY_pbR0

Video S3. Trap assay

Responses of wild-type *C. elegans* adult hermaphrodites to the worm extract and M9 buffer in the trap assay. Video is set at 5X speed. Red, worm extract; blue, buffer.

Video is also available at <https://youtu.be/34q1j2z9290>

Supplementary Figures

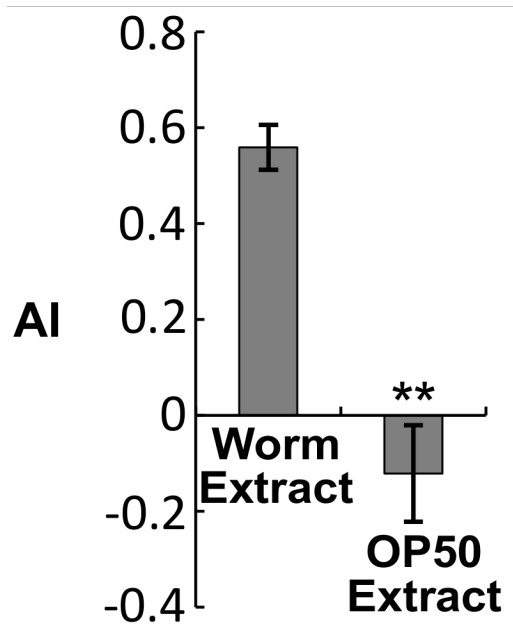


Figure S1. Bacterial extract did not repel worms

Both *E.coli* OP50 and *C. elegans* were washed, sonicated, and filtered similarly to obtain the extracts. *C. elegans* avoided the worm extract but not the bacteria extract in population assays. Bar and error bars indicate means and SEM, respectively. ** $p < 0.01$, Student's *t*-test. $n \geq 9$.

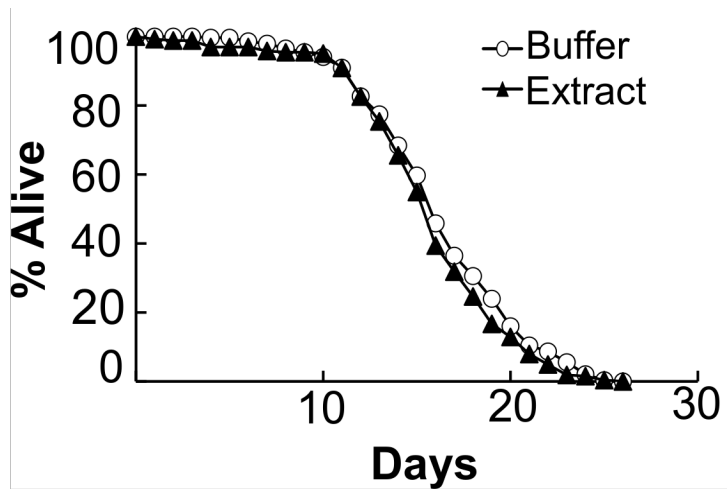


Figure S2. Repeatedly dosing worms with worm extract did not reduce their lifespan.

An independent trial confirming the results in Fig. 2A.

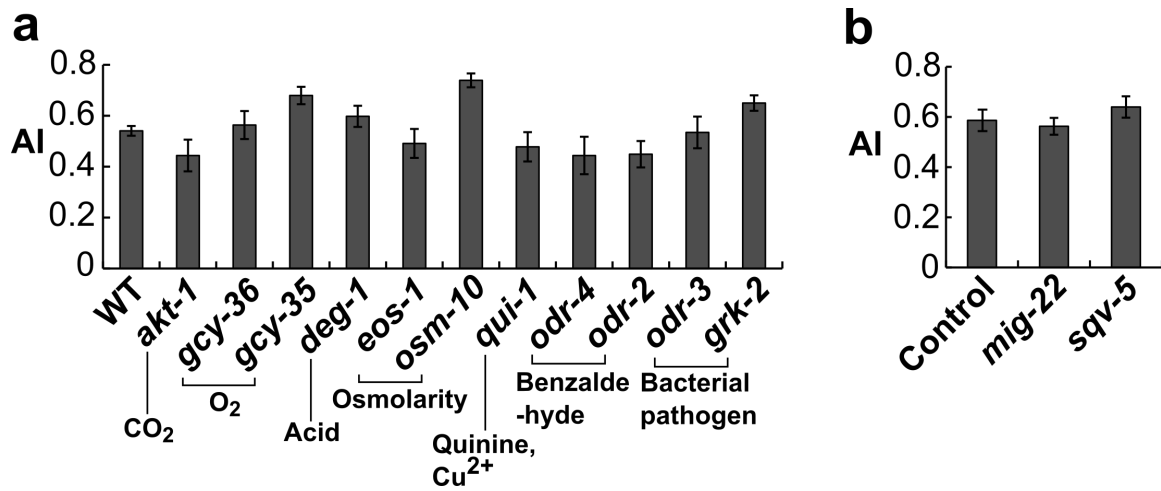


Figure S3. Alarm pheromone is a novel nematode repellent.

a. Mutants with defects in avoiding CO₂, O₂, acids, osmolarity, quinine, Cu²⁺, benzaldehyde, or bacterial pathogen (Bargmann *et al.* 1993; Hart *et al.* 1999; Bargmann 2006; Bretscher *et al.* 2008; Wang *et al.* 2008), still avoided the worm extract. n ≥ 10.

b. Extracts from worms with reduced GAG production still elicited similar level of avoidance as wild type. n ≥ 20.

Supplementary References

- Bargmann C. I., Hartwig E., Horvitz H. R., 1993 Odorant-selective genes and neurons mediate olfaction in *C. elegans*. *Cell* **74**: 515–527.
- Bargmann C., 2006 Chemosensation in *C. elegans*. *WormBook*.
- Bretscher A. J., Busch K. E., Bono M. de, 2008 A carbon dioxide avoidance behavior is integrated with responses to ambient oxygen and food in *Caenorhabditis elegans*. *Proc. Natl. Acad. Sci.* **105**: 8044–8049.
- Hart A. C., Kass J., Shapiro J. E., Kaplan J. M., 1999 Distinct Signaling Pathways Mediate Touch and Osmosensory Responses in a Polymodal Sensory Neuron. *J. Neurosci.* **19**: 1952–1958.
- Wang Y., Apicella A., Lee S.-K., Ezcurra M., Slone R. D., Goldmit M., Schafer W. R., Shaham S., Driscoll M., Bianchi L., 2008 A glial DEG/ENaC channel functions with neuronal channel DEG-1 to mediate specific sensory functions in *C. elegans*. *EMBO J.* **27**: 2388–2399.

Table S1. Strains used in the study.

Strain ID	Genotype
VC1785	<i>acox-1(ok2257) I</i>
BQ1	<i>akt-1(mg306) V</i>
CB1112	<i>cat-2(e1112) II</i>
CB3329	<i>che-10(e1809) II</i>
DR47	<i>daf-11(m47) V</i>
RB859	<i>daf-22(ok693) II</i>
DR476	<i>daf-22(m130) II</i>
IE3058	<i>daf-37 (ttTi3058) II</i>
TU38	<i>deg-1(u38) X</i>
VS8	<i>dhs-28(hj8) X</i>
KP715	<i>eos-1(nu288) IV</i>
CX6448	<i>gcy-35(ok769) I</i>
AX1297	<i>gcy-36(db66) X</i>
HA865	<i>grk-2(rt97) III</i>
CX3937	<i>lim-4(ky403) X</i>
VS18	<i>maoc-1(hj13) II</i>
MT8944	<i>mod-5(n822) I</i>
MT9772	<i>mod-5(n3314) I</i>
CX4544	<i>ocr-2(ak47) IV</i>
CX2065	<i>odr-1(n1936) X</i>
CX2304	<i>odr-2(n2145) V</i>
CX2205	<i>odr-3(n2150) V</i>
MT5300	<i>odr-4(n2144) III</i>
PR808	<i>osm-1(p808) X</i>
MT3641	<i>osm-10(n1602) III</i>
PR802	<i>osm-3(p802) IV</i>
PR811	<i>osm-6(p811) V</i>
CX10	<i>osm-9(ky10) IV</i>
NA404	<i>him-8(e1489) qui-1(gb404) IV</i>
WWZ165	<i>srbc-64(tm1946) I</i>
WWZ164	<i>srbc-66(tm2943) V</i>
CC1	<i>srg-36 srg-37 X</i>
PR691	<i>tax-2(p691) I</i>
PR694	<i>tax-2(p694) I</i>
PR678	<i>tax-4(p678) III</i>
MT15434	<i>tph-1(mg280) II</i>
MT14984	<i>tph-1(n4622) II</i>
PY1133	<i>unc-130(oy10) II</i>
CB156	<i>unc-25(e156) III</i>
MT6214	<i>unc-25(n2569) III</i>
CB151	<i>unc-3(e151) X</i>
CB307	<i>unc-47(e307) III</i>
MT6201	<i>unc-47(n2409) III</i>

WWZ221	<i>tax-4(p678); cazEx20[Pstr-3::tax-4+Pmyo-2::Dsred]</i>
WWZ225	<i>tax-4(p678); cazEx21[Psrg-8::tax-4+Pmyo-2::Dsred]</i>
WWZ226	<i>tax-4(p678); cazEx22[Psra-13::tax-4+Pmyo-2::Dsred]</i>
PY7513	<i>tax-4(p678); Ex[ceh-36delp::tax-4,unc-122p::dsred]</i>
PY7515	<i>tax-4(p678); Ex[srbc-65p::tax-4,unc-122p::dsred]</i>
PY7502	<i>oyIs85 [ceh-36p::TU#813 + ceh-36p::TU#814 + srtx-1p::GFP + unc-122p::dsRed]</i>
PY7505	<i>oyIs84 [gpa-4p::TU#813 + gcy-27p::TU#814 + gcy-27p::GFP + unc-122p::dsRed].</i>
N2	WT
<i>Steinernema carpocapsae</i>	WT
