

SUPPLEMENTAL INFORMATION

	Odor induced current			Wash induced current		
	Latency (ms)	Rise time (s)	Decay time (s)	Latency (ms)	Rise time (s)	Decay time (s)
AWC (TAX-2/TAX-4)	195.7 ± 30.3	0.4 ± 0.1	—	1252.3 ± 353.4	1.4 ± 0.3	9.9 ± 1.3
ASH (OSM-9)	487.9 ± 138.8	2 ± 0.3	15.8 ± 2.8	N.A.		

Table S1. Biophysical Properties of IAA-induced Currents from AWC and ASH Neurons. Related to Figure 1.

The rise times and decay times were obtained from 10% to 90% of the peak amplitude.
Voltage: -70 mV. $n \geq 5$.

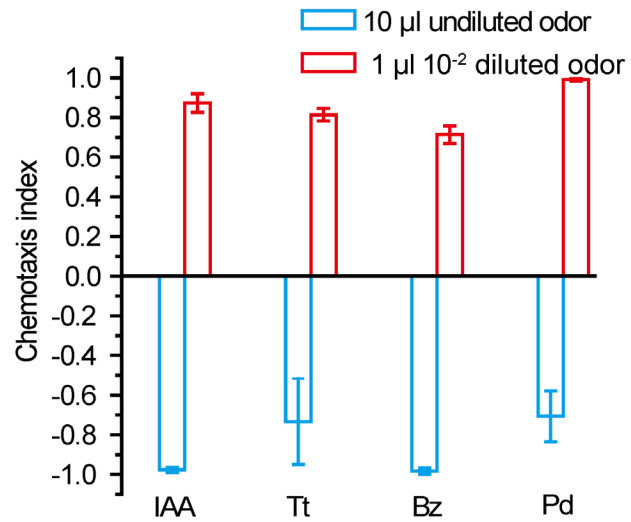


Figure S1. Odorants Which Are Attractive in Low Concentration Elicit Avoidance Response with High Concentration in *C. elegans*. Related to Figure 1.

Odorants were diluted with ethanol. IAA, isoamyl alcohol; Tt, 2,4,5-trimethylthiazole; Bz, benzaldehyde; Pd, 2,3-pentanedione. N = 3. Error bars: SEM.

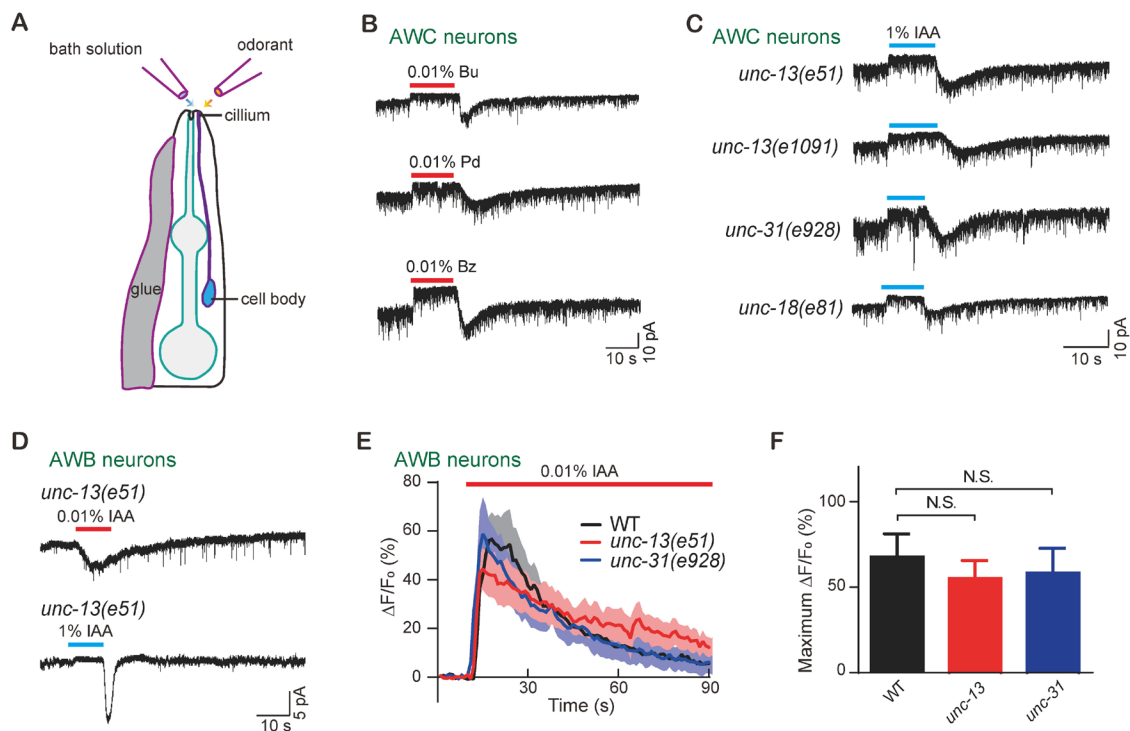


Figure S2. IAA induced Responses in AWC and AWB Neurons. Related to Figure 1.

(A) A schematic drawing of the calcium imaging and electrophysiological recording of odorant-induced responses in *C. elegans* olfactory neurons.

(B) Representative traces show olfactory currents from AWC neurons induced by 0.01% Bu (AWC^{ON}), 0.01% Bz (AWC^{ON} and AWC^{OFF}), and 0.01% Pd (AWC^{OFF}). Bz, benzaldehyde. Pd, 2,3-pentanedione. Bu, butanone.

(C) 1% IAA-induced currents in AWC neurons in *unc-13(e51)*, *unc-13(e1091)*, *unc-31(e928)* and *unc-18(e81)* mutants were equal to that in wild-type animals. $n \geq 4$.

(D) IAA-induced currents in AWB neurons in *unc-13* mutants. $n \geq 7$.

(E and F) 0.01% IAA-induced calcium responses in AWB neurons in *unc-13(e51)* and *unc-31(e928)* mutants. $n \geq 7$.

For patch-clamp recording, the cell membrane potential was voltage-clamped at -70 mV. Error bars: SEM. N.S.: not s