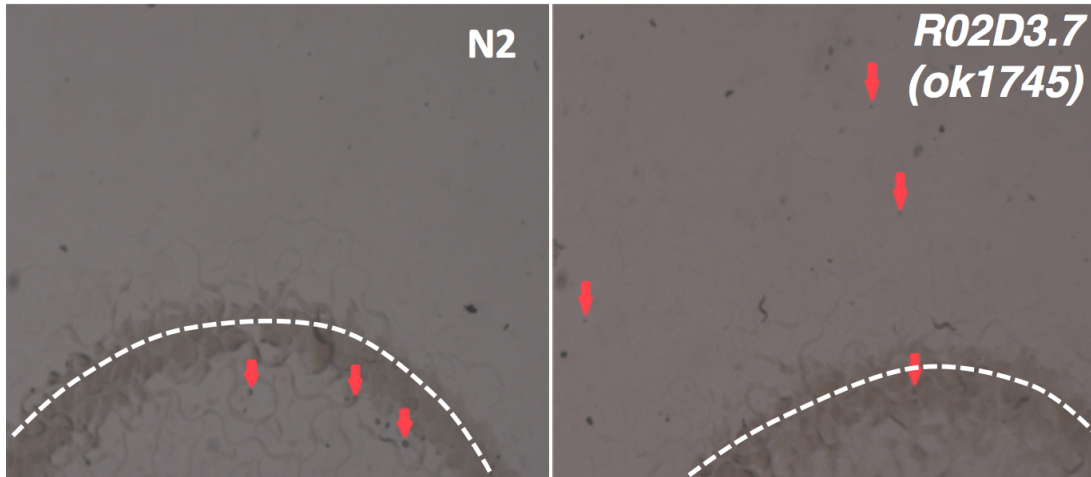


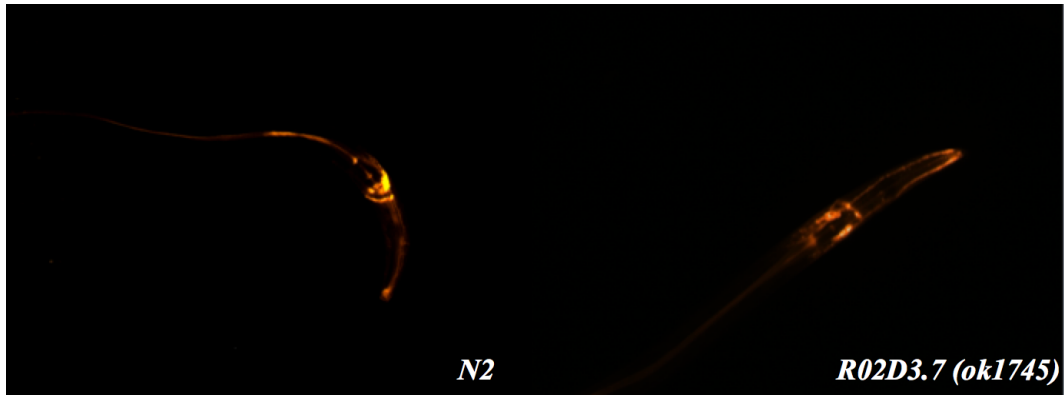
## Supplementary Materials

**Video S1. Movement of N2 wildtype.** The arrow indicates the location of the nematode at the beginning of the video. Video was recorded by an Olympus SZX7 zoom stereo microscope.

**Video S2. Movement of *R02D3.7(ok1745)*.** The arrow indicates the location of the nematode at the beginning of the video. Video was recorded by an Olympus SZX7 zoom stereo microscope.

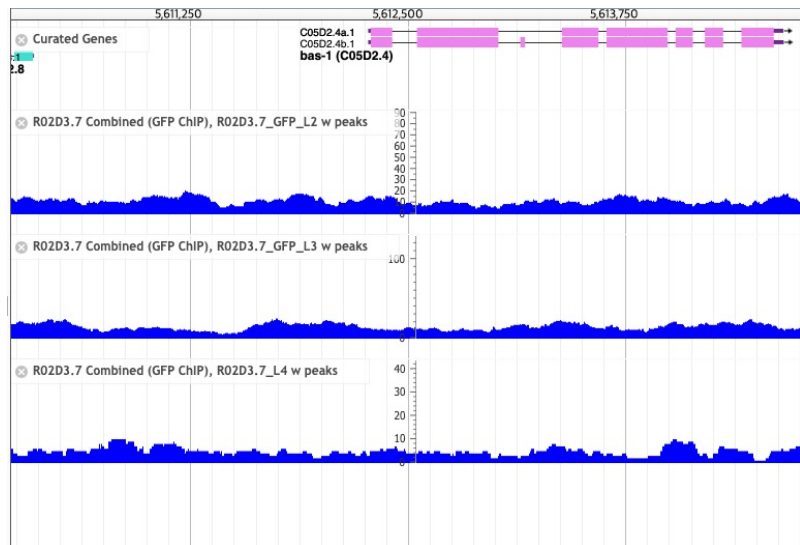


**Figure S1. Egg laying pattern of *R02D3.7(ok1745)*.** *R02D3.7(ok1745)* strain lays egg outside of seeded food unlike the wild-type animals that lay inside of seeded food.

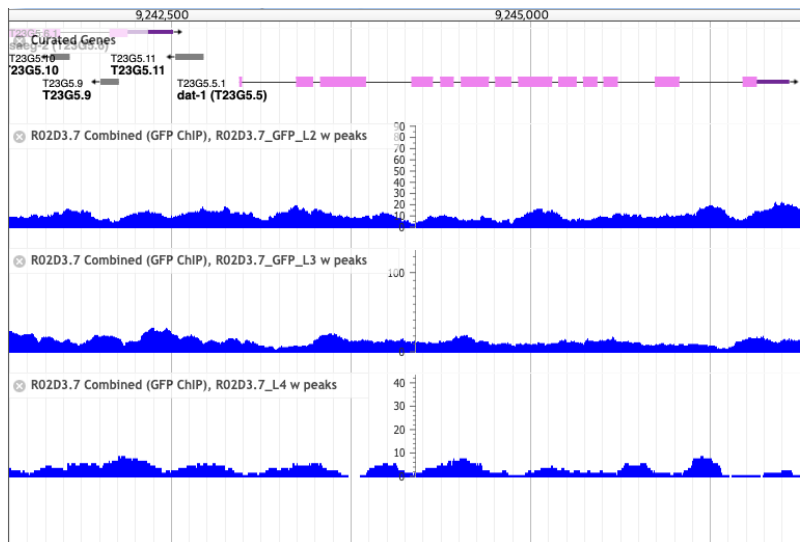


**Figure S2. DiI staining of the wild-type animals and *R02D3.7 (ok1745)* strain.** Staining of chemosensory neurons was performed on both strains. *R02D3.7 (ok1745)* was stained normally as the wild-type N2 animals. This indicates that *R02D3.7 (ok1745)* has no structural defects in chemosensory neurons.

### ***bas-1***



### ***dat-1***



**Figure S3. *bas-1* and *dat-1* genes did not bind with R02D3.7.** Illustration is driven from wormbase JBrowse([www.wormbase.org](http://www.wormbase.org)), based on ChIP-seq data analysis from modENCODE database.

**Table S1.** Nucleotide sequence of primers used in qRT-PCR

Target Gene	Primer Sequence
<i>act-1</i>	(Forward) GTATGGAGTCCGCCGA (Reverse) CTTTCATGGTTGATGGGGCAA
<i>mec-4</i>	(Forward) TCAGGGAATGACAGATGAAGTTGC (Reverse) ACATGGGACCTGCTCGAATACTAG
<i>mec-8</i>	(Forward) GCCAGAAAAATGTTGCAAGGTGTC (Reverse) AATGTTGGAGGCTGGCTGCTG
<i>mec-10</i>	(Forward) GGAACATGACAGATGAAGTTGCCA (Reverse) CAAGCCATATTGTGGTCCAGCTC
<i>myo-3</i>	(Forward) CCAGAAGATGGATTTCGTCGCC (Reverse) CACAGAAAAGTCCGGAGTATGTGT
<i>unc-22</i>	(Forward) GTCGTTGAGAACGAACTGCAATC (Reverse) CGAAGTGACCAACAGTTTGACGT
<i>unc-54</i>	(Forward) AAGGTTATCGCCAAGCTCGAAC (Reverse) GTTCCTCAGCTTCCTCAACCTG
<i>cat-1</i>	(Forward) CTTGCTCTCTTCGATGGATCAA (Reverse) ATTTCCGATGGTGATTGCTCCT
<i>cat-2</i>	(Forward) ATTTGAAAATTCTCCAAGAGG (Reverse) ATGTCTCAAATACGTAGTTGT
<i>bas-1</i>	(Forward) AACTTTTATGAAATGGGTCTC (Reverse) TCAGAGCAATACATGACAAAT
<i>dat-1</i>	(Forward) CGTACTCGGCTACATGTCCTGCAA (Reverse) CTGAAAGGCCCGGTGATGATAGCTTC
<i>ast-1</i>	(Forward) AATGATCACTTCACCGGTATGAAC (Reverse) ACGTCACTTTTGCTTTCGGTACTT