

Supplementary information

TATCGGTCGTAATGTCGCCGTAATGCATGCGTCGATTGGCTGAAACATATTGGCTTGGCTGATTGCGTAACAAATGCCGTG
 CTTGTCGGTGAAATGCCTGCGTACCATTCGGCATGCGTACGTGCAATCCAATTCTAATGCGTAATGCGTACT

1 - ATGGAGTCGCCTCC ACCTAGCTACCAAT GTGGCGCTTCAGTAC AATGAGACGACGGTG GTGTACGACGAGGGA
 1 - M E F A S T L A T N V A L Q Y N E T T V V Y D E G

76 - GATGACCCGGATGCT GTCACGTTGCTCTCC ATACTGCTTGTGGT ATATTCCGTGTCATTG CTGATATTCCCTCAGC
 26 - D D P D A V T L L S I L L V G I F L S L L I F L S

151 - GTAGCAGAACATA CTGGTCTGCATCGCG ATATACACGGACCGA GGGTTGCGACGCATC GGGAACCTGTTCCCTG
 51 - V A G N I L V C I A I Y T D R G L R R I G N L F L

226 - GCATCGTGGCCATC GCTGACATGCTGGTA GCTGCTGCGGTATG ACCTTGAGGAGTC AATGACCTGCTTGGA
 76 - A S L A I A D M L V A A A V M T F A G V N D L L G

301 - TACTGGTATTCGGC GAGCAGTTCTGCGAC ACCTGGTGGCGTGT GACGTCATGTGCTCA ACCGCCTCCATACTC
 101 - Y W V F G E Q F C D T W V A C D V M C S T A S I L

376 - AACCTGTGCGCTATC TCGCTCGACAGATAC ATTACACATCAAAGAC CCTTTGAGGTACGGT CGCTGGGTGACCCGC
 126 - N L C A I S L D R Y I H I K D P L R Y G R W V T R

451 - AAGGTGGCGGTAGCC ACAATAGCCATGATC TGGCTGCTAGCAGGC CTGGTCAGTTCTTG CCCATCTCGCTAGGG
 151 - K V A V A T I A M I W L L A G L V S F L P I S L G

526 - CTTCACAGGCCCTGAT GAAGAAGCCCTGGCC ACACAGAAGCCCCG AGATACCCCACGTGC GCGTGGTCCCTGACG
 176 - L H R P D E E A L A T Q K P P R Y P T C A L V L T

601 - CCGACGTACGCGGTC GTCTCCAGCTGTATA TCGTTCATACTACCG TGTATTGTTATGATT AGTATATACTGCAGA
 201 - P T Y A V V S S C I S F I L P C I V M I S I Y C R

676 - CTATACTGCTACGCT CAAAAACACGTCAAG TCAATCCGGGCCGTC ACCCGAACGGTCAA ATGCCGACAACCGG
 226 - L Y C Y A Q K H V K S I R A V T R T V Q M P D N R

751 - ACGAAGTCCGCCGG ACTCGAGTGCACACC CACGTGCACCGTCA CCGTACACGTCTCC GATCACAAGGCGGCC
 251 - T K S V R T R V H T H V H S S P Y H V S D H K A A

826 - ATTACTGTGGGTATC ATCATGGAGTGTCTT CTTCTTGCTGGGTG CCCTTCTCTGTGTG AACATCGTCGCTGCG
 276 - I T V G I I M G V F L L C W V P F F C V N I V A A

901 - TTTGTAAAACGTGT ATACCGGATTGGCA TTCAAAATCTGACCG TGGCTGGCTACTCA AACTCCGCTTCAAC
 301 - F C K T C I P D L A F K I L T W L G Y S N S A F N

976 - CCTATCATATACTCA ATATTCAACACAGAG TTCCGGAAGCCTTC AAGAAGATCCTAACG TCCAGGTATCCTCTA
 326 - P I I Y S I F N T E F R E A F K K I L T S R Y P L

1051 - TGCTGCCGATACCAA AGCGTCAGAGCAAC ACACCAACACGAAAC GACAACCTTGTCACT GACTACGGGACTAAA
 351 - C C G Y Q S V R A N T P T R N D N F V T D Y G T K

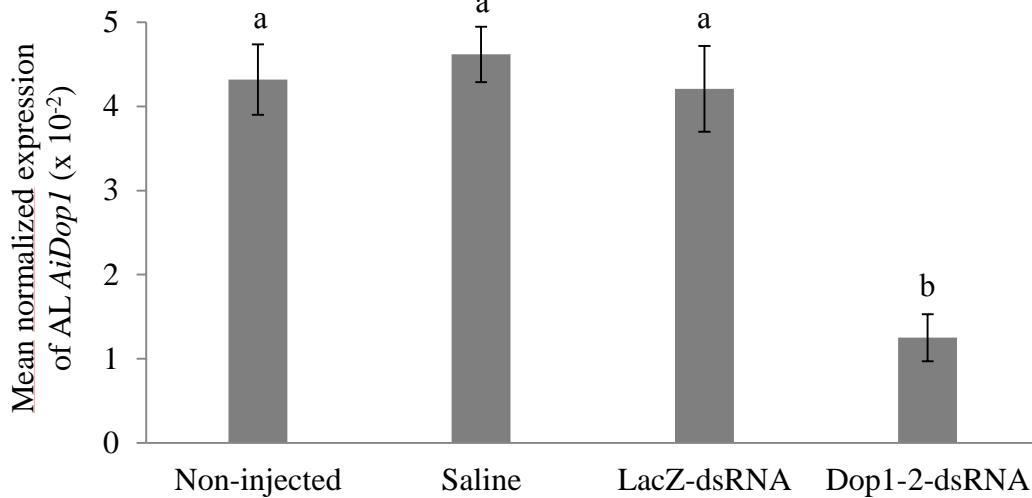
1126 - ACCTGGTGGTGCAG CGTAGCGGGTCCCTT GGCCTCTCAGGAGTG GACCCCACTCCAAGG TCATCGGCAGAGTCC
 376 - T L V V R R S G S L G L S G V D P T P R S S A E S

1201 - GTACGCCACTCAGA GAGTACAACATT
 401 - V R P L R E Y N I

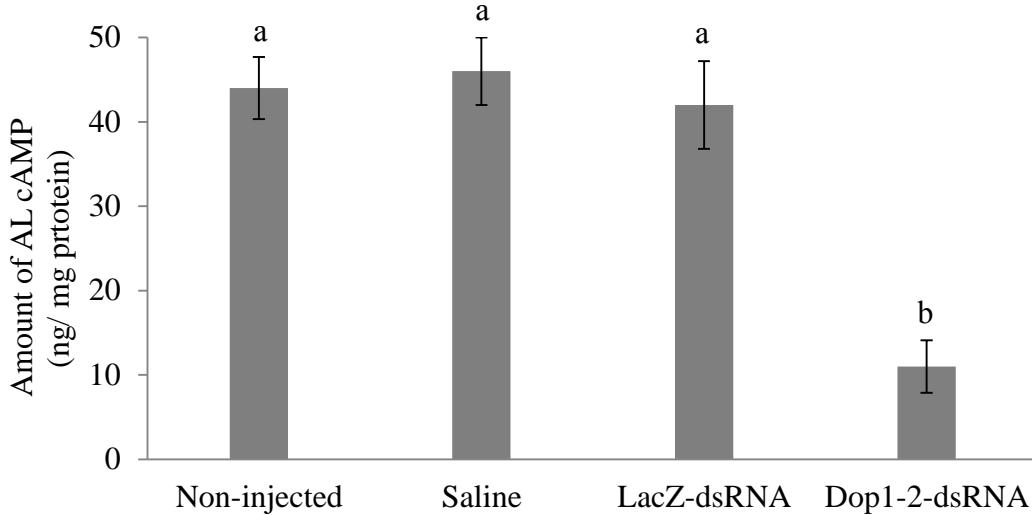
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 CAATGCGTATGCGTCGCAATCTCATGCGTGGCGAGTCGAGTCGATGCGTATTGCGGCGATGCTGACTGCGTACGCGTCAAATCGTGT
 CCGTGAATGCTCTGCGTACTGCTGATGCGTCAACTGCGTGTGACGTAACGCTGCTGACCAATGCGTGTGAGAGAC
 TGCTATGCGCATGCGTCGACTGCAATGCGGCTGGCTGCTGAGATGCTGACTACGCTACTGCGTATTGCGTGGCGTCAATGCC
 TGCTAAACTGCTCGTCGAGTATCACGTCGCTGGCGTGTGCTGACGTCGACTGCTGCAATGCGTGTGACATGCCGATGGTGC
 CACAAGTCGTCGGCTGCTGCTGCGTGGCGACACACAGGATGCGTGTGACGTCGACTACAGAGTCGATGCTGATTGGCTCGGC
 CAAGTCGTCGGCTGCAATGCTACCATGCGTACCATGCGTACATGCCGATGCCATGCAATCTGCTAGAGAGGAATC
 GT**AATAA**GTGACTGCGTGTGCGAGACATGCGTACTAGTCGATCGCGCAATCTCATCGTCGAGAATGCTGAATCGTAGTCGA
 CTCTATCGAAGCaaaaaaaaaaaaaa

Figure S1. Nucleotide and deduced amino acid sequences of *A. epsilon* Dop1. Nucleotide (upper line) and amino acid (lower line) numbers are given on the left. The polyadenylation signal (AATAAA) in the 3'-UTR is in bold type.

A



B



C

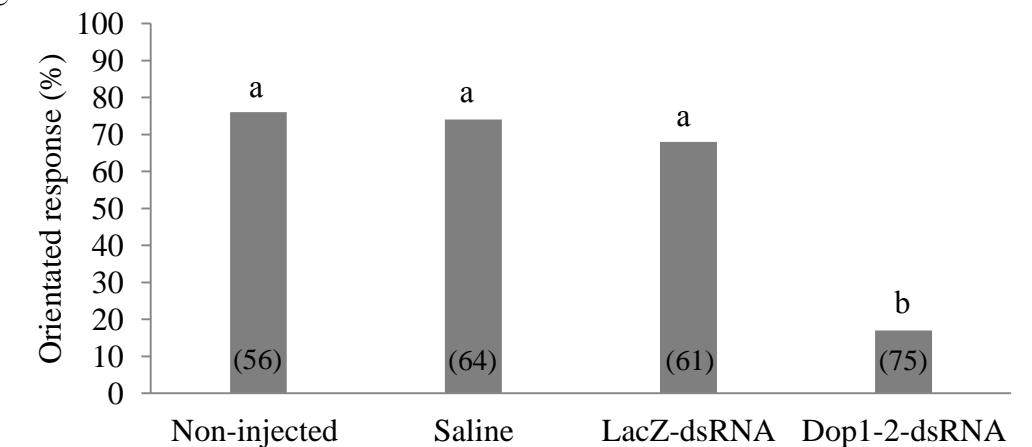


Figure S2. Efficiency and effect of Dop1-2-dsRNA on both the amount of AL cAMP and the sex pheromone behavioral response in *A. epsilon* males. Two-day-old males received an injection of saline solution, bacterial Beta-galactosidase (LacZ)-dsRNA or Dop1-2-dsRNA, or no injection (non-injected). For each treatment and three days after injection, the relative expression of *AiDop1* mRNA (A) and the amount of cAMP (B) were quantified in ALs, and the percentages of orientated responses were determined in the wind tunnel experiments (C). Each real time qPCR was run in three technical replicates with five independent biological replicates. The cAMP amounts were quantified from 10 ALs for each experimental group with 10 biological replicates. For the *AiDop1* mRNA and cAMP levels, the bars represent means \pm SD and those with different letters are significantly different (analysis of variance; Tukey's test; P<0.05). For the behavioral tests, the numbers in parentheses indicate the numbers of tested males and the columns with the same letter are not significantly different (G-test; P<0.05).

Table S1. List of the primers used in the study.

Primer name	Sequence
Dop1Gdir1	5'-CTGATATTYCTCAGYGTAGCA-3'
Dop1Grev1	5'-GTTGAATATCGAGTAKATRAT-3'
Dop15'-RACE	5'-CGCGATGCAGACCAGTATGTT-3'
Dop13'-RACE	5'-TCAAACCTCCGCGTTCAACCCCT-3'
qDop1dir	5'-GGGCTTCACAGGCCTGATGAAGAA-3'
qDop1rev	5'-CATTGAACCCTTCGGGTGACGGC-3'
RpL8dir	5'-CCAGTTGTCTACTGCGGCAA-3'
RpL8rev	5'-GCTTAACCCTAGTACGCTTGGCA-3'
LacZ T7 dir	5'-taatacgactcaactataggATGACCATGATTACGCCAAGC-3'
LacZ T7 rev	5'-taatacgactcaactataggCCATTGCCATTAGGCTGCG-3'
Dop1-1 T7 dir	5'-taatacgactcaactataggTCAGTACAATGAGACGACGGTGG-3'
Dop1-1 T7 rev	5'-taatacgactcaactataggTGATGTGAATGTATCTGAGCGAG-3'
Dop1-2 T7 dir	5'-taatacgactcaactataggTACTGCAGACTATACTGCTACGCTC-3'
Dop1-2 T7 rev	5'-taatacgactcaactataggGGCTCTGACGCTTGATCCGCAGC