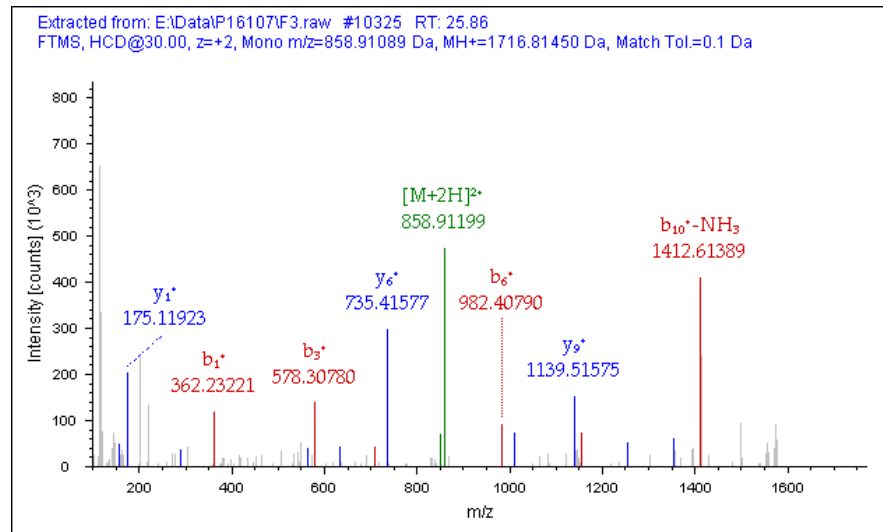


BdorOBP2 plays an indispensable role in the perception of methyl eugenol by mature males of *Bactrocera dorsalis* (Hendel)

Huan Liu¹, Xiao-Feng Zhao¹, Lang Fu², Yi-Ye Han¹, Jin Chen¹,
Yong-Yue Lu^{1*}

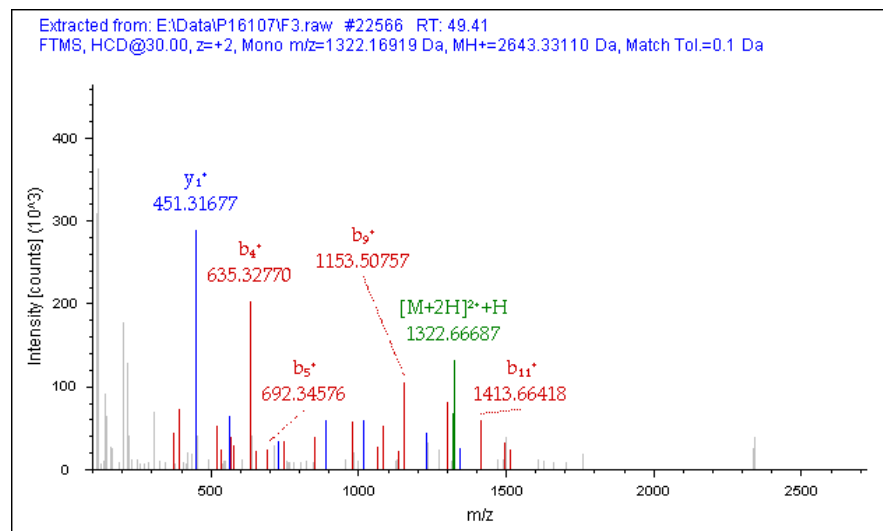
Odorant binding protein 2

(Protein Accession Number: S5R7H8; Peptides Sequence: gTDEcDTAFQIR)



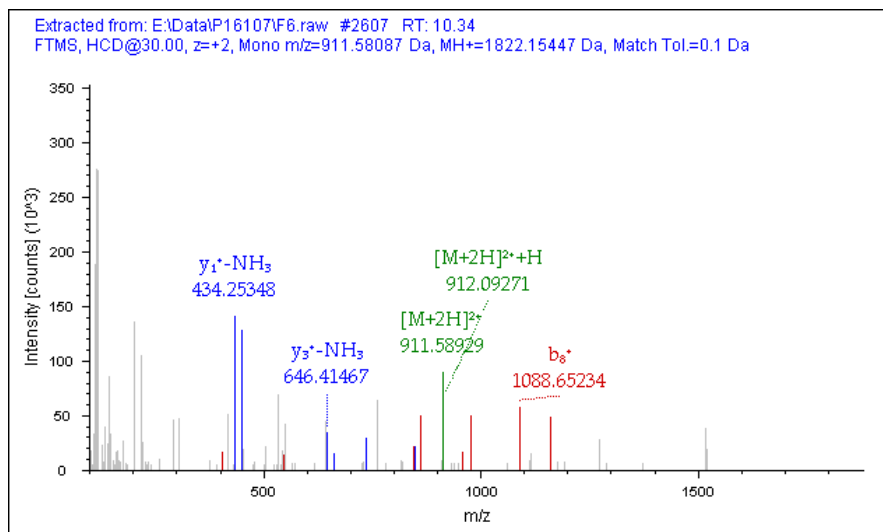
Odorant binding protein 69a

(Protein Accession Number: A0A0G2UEV0; Peptides Sequence: aTGELPNNQNLk)



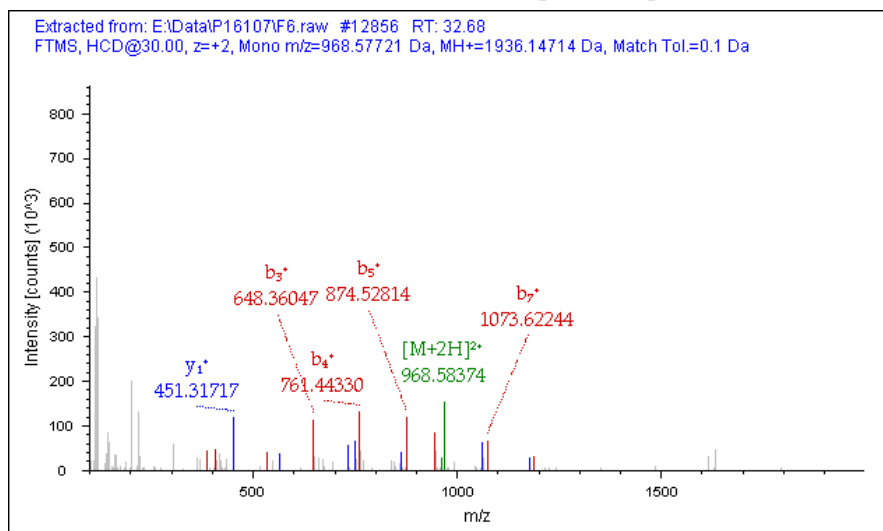
Odorant receptor 94b

(Protein Accession Number: A0A0G2UEY4; Peptides Sequence: tASANIII AVLk)



Odorant binding protein 44a

(Protein Accession Number: A0A0G3Z7T5; Peptides Sequence: tQNLIAQLGQNk)



Putative odorant-binding protein A5

(Protein Accession Number: A0A034WGF4; Peptides Sequence: KYDMELVAGNIFTSR)

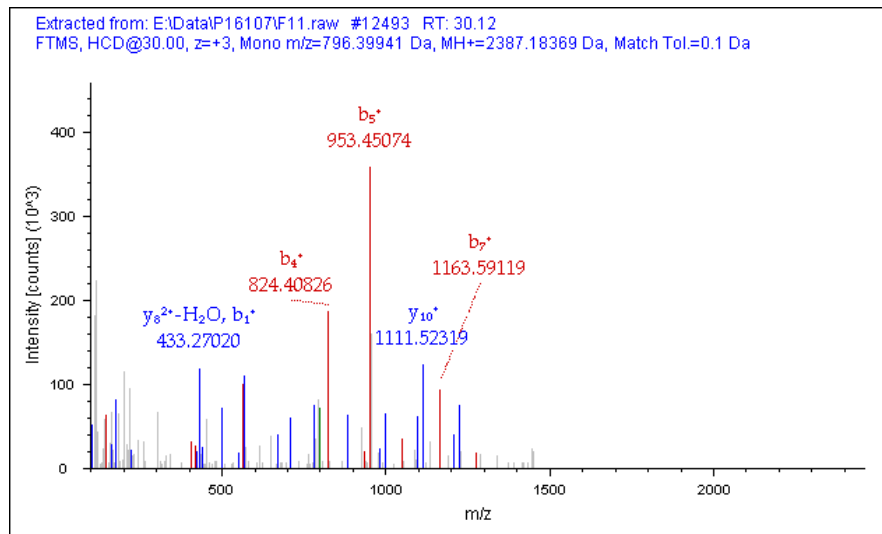


Figure S1. Representative MS spectrum of eight peptides

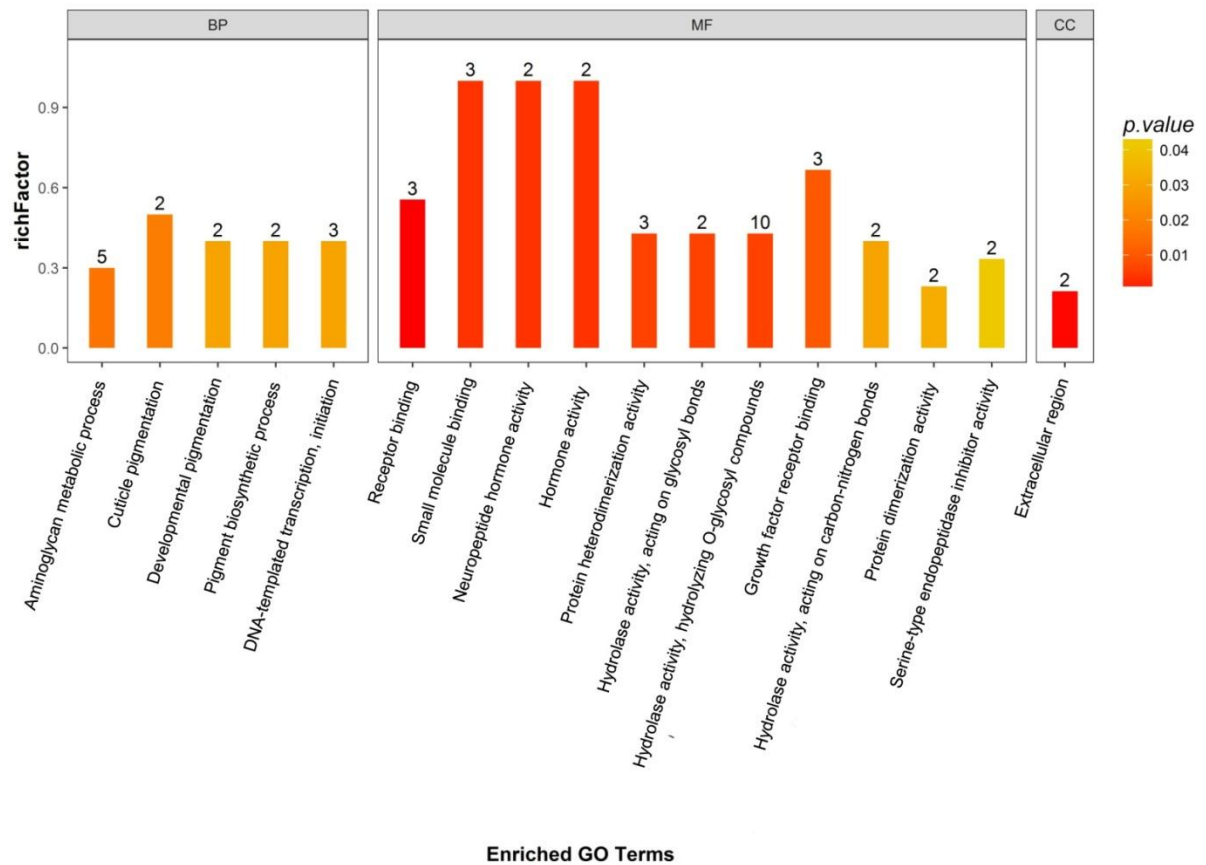


Figure S2. GO enrichment analysis of differentially expressed proteins between the responsiveness and non-responsiveness male flies' antenna. The *x*-axis represents the name of the GO terms, and *y*-axis represents the rich factor. The numbers on the columns represent the protein number. The color of column represents the corresponding *p*-value, and a corrected *p*-value < 0.05 were considered the most significant functional subcategories.

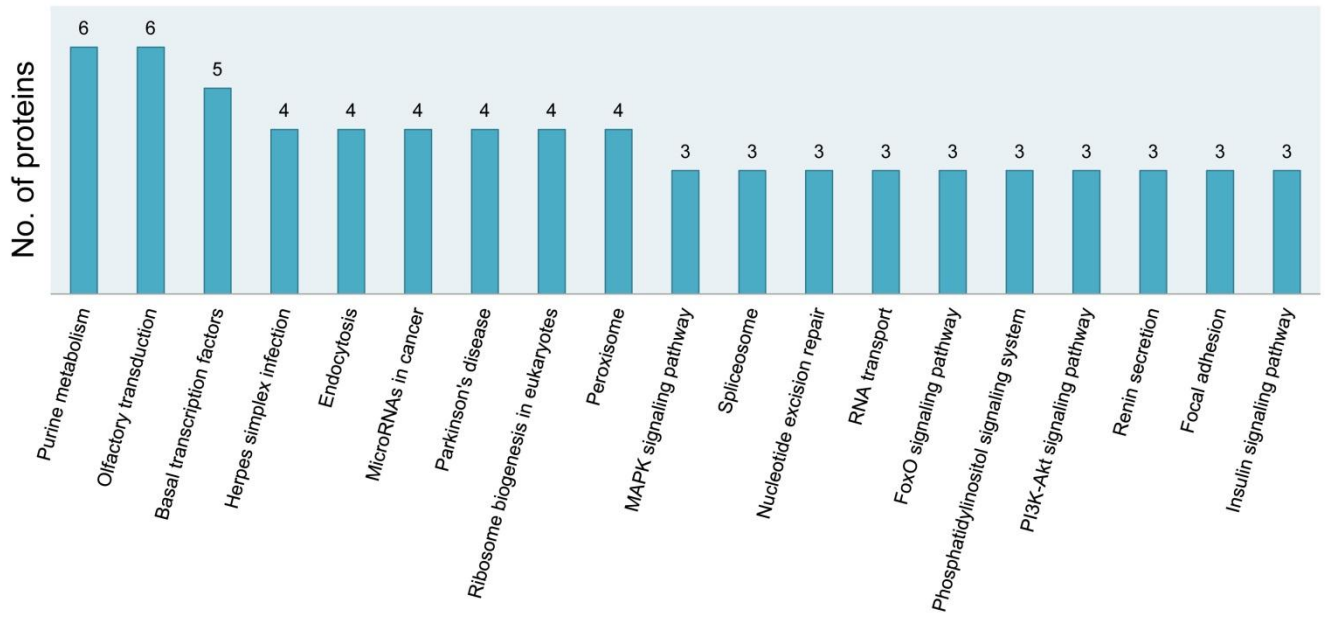


Figure S3. The most represented KEGG pathways in *B.dorsalis* proteome. The x-axis represents the name of the pathways, and the y-axis represents the protein number.

Table S1. Summary of the proteomics sequencing results.

Group Name	Number
Total spectra	266460
Spectra	48059
Peptides	26679
Unique peptides	25550
Protein	4622
Differentially expressed protein	277

Table S2. Primers used for gene expression detection by qPCR.

Primer name	Nucleotide sequences (Forward)	Nucleotide sequences (Reverse)	Primer efficiency (%)
<i>BdorOBP44a</i>	ACGCGCTGCTACATTGAGTG	GTGCATGAGTCCGATTTCTG	97.83
<i>BdorOBA5</i>	GGCTAAAGGTTACGTGCTAG	GCCACCAGCTCCATATCGT	95.45
<i>BdorOBP69a</i>	AGTGACCACTCTGGAGGTG	TCCAAGTGCACGATGTTGTC	92.53
<i>BdorOBP2</i>	GTTTTGCTAGCCTTTGTCGC	CTTGCATGCACTTGGAGAAG	95.11
<i>BdorOB19A</i>	TCGGATCAAGTTTCTGGCGG	CCTTTCTTCATCGTTTGCATC	93.43
<i>BdorOB99A</i>	CAATGAAGTGCACAGCGTTC	GTCCGGATAATCAAAGTTGTC	97.24
<i>BdorOBP83a-1</i>	CACGTACAGGCACAGGAAC	GTCACCGTTATCGTCCACC	95.99
<i>BdorOBP15</i>	CTAGTGGATAAGTACAAGGCC	GCTTCCTTTGCGCAATTCTC	92.82
<i>BdorPBP4</i>	CAGTCTTGCTCTCTCACTGG	AACGGTATTGTGTAAGTGGC	94.69
<i>BdorPBP2</i>	CTTGATTGTTTGTGTGGCGC	CATCACCATTTCATCGCACCG	96.92
<i>BdorOR94b</i>	ACCGTTGTCGTGTTTCGCTTG	GCTCAGACGCCAACCAATC	92.89
<i>BdorIR84a</i>	CGATCTGCGCATTGGTATTG	GCCGGTAGAAAATGCTGCAG	94.88
<i>α-tubulin</i>	CGCATTTCATGGTTGATAACG	GGGCACCAAGTTAGTCTGGA	94.73

Table S3. Primers used for RNA interference analysis.

Primer name	Nucleotide sequences
<i>dsOBP2-F</i>	<u>TAATACGACTCACTATAGGGAGACCACCTTCTCCAAGTGCATGCAAG</u>
<i>dsOBP2-R</i>	<u>TAATACGACTCACTATAGGGAGACCACAAATCCAAGCCCTCGTGCC</u>
<i>dsGFP-F</i>	<u>TAATACGACTCACTATAGGGGAGACCACACGGCCACAAGTTCAGCGT</u>
<i>dsGFP-R</i>	<u>TAATACGACTCACTATAGGGGAGACCACGACCACTACCAGCAGAACA</u>

Note: The underlined nucleotides sequence is T7 promoter.

Table S4. Identification of ORs in non-responsiveness and responsiveness *B.dorsalis* male antennae.

Accession Number	Protein Description	Theor. pI/MW (kDa)	Non-responsiveness/ Responsiveness	Student's <i>t</i>-test <i>P</i> value
A0A0G2UKH1	Odorant receptor 13a	8.309/50.726	1.059	0.0688
A0A034WM57	Odorant receptor 83b	8.499/53.078	1.032	0.277
A0A0G2UGJ8	Odorant receptor 43a-1	6.138/43.552	1.056	0.472
A0A0G2UEX9	Odorant receptor 67c	5.402/46.729	0.954	0.599
A0A0G2UEY4	Odorant receptor 94b	8.558/46.003	1.683	0.0198