



Supplementary Material

Identification and Expression Analysis of an Olfactory Receptor Gene Family in the *Yemma signatus* Hsiao (Hemiptera: Berytidae)

Yue Qin Song, Hui Zhong Sun* and Jun Feng Dong

Forestry College, Henan University of Science and Technology, Luoyang 471000, China

* Corresponding author: huizhong66@163.com

0030-9923/2020/0005-1911 \$ 9.00/0

Copyright 2020 Zoological Society of Pakistan

Supplementary Table I.- RT-qPCR primers used in this study.

Primer name	Sequence (5'-3')	Primer name	Sequence (5'-3')
YsigORCO-F	TGGAGATGCTTACGGTTCAGCG	YsigOR34-F	AACTTGGAGACTCGGGCTAA
YsigORCO-R	TCGATGAGCTCGTTCCTGGGA	YsigOR34-R	CGTTTAAACACCCGTGCCATT
YsigOR1-F	CCAGGAACGGGAAGATAACG	YsigOR35-F	CCGCTCACAGATGTTTGG
YsigOR1-R	ATCCAGACGAAGAGCGAGGC	YsigOR35-R	CAGCGAATCCTCCCAAGC
YsigOR2-F	GTCCTGGCTGAAGACGCTGTT	YsigOR36-F	AGCCTCGGATACAGCAGC
YsigOR2-R	AAAGTTGACCACGACGAAAA	YsigOR36-R	GGTGCTGGATGTTCTGCT
YsigOR3-F	ACTTGAAGGAAGGCTACAGGA	YsigOR37-F	TTGGCACTTGACGAGGAT
YsigOR3-R	TCAGTGTGCCACGGCAAGG	YsigOR37-R	ATTGGCATCAGGAGCATT
YsigOR4-F	AGCCGCACTCATCATATCCA	YsigOR38-F	GGTTTCGTAGCCCTCATT
YsigOR4-R	AGCCGTCAACAAAGTCCATT	YsigOR38-R	AGAGGACGGGTATGTGGA
YsigOR5-F	TCTTACCATCCACGATTCAA	YsigOR39-F	CAGGATACACCAGCAGATAA
YsigOR5-R	GGTTTGGACCACCAGGGATA	YsigOR39-R	GACGACCAGAGCGATAGA
YsigOR6-F	CTGTCTGCCGTCTGGTGCTG	YsigOR40-F	ACCAGGTTCTCGGTAAGG
YsigOR6-R	TCATTGTGACCCAGGCGAAG	YsigOR40-R	TTCCAGGTGACGGTGAGA
YsigOR7-F	TTTCCATCTCCCCTATCCCT	YsigOR41-F	CACAGCGTCTACGATACAA
YsigOR7-R	ATTGTTTTCTGTCGGCTTCA	YsigOR41-R	ACAGAAGCCTGAAGCAAT
YsigOR8-F	CATCCATACTTCGGTGTGCG	YsigOR42-F	CATCTGGTGTGACATAGAG
YsigOR8-R	CTCCTCGTCTGGTAGGTGA	YsigOR42-R	TGAGGAGGTTTCATAGTGGT
YsigOR9-F	TTCAACCAAACGGAGAAGGG	YsigOR43-F	TCGGGTCGTATTTGGTGA
YsigOR9-R	AGCCGATGACACTGAGGAGG	YsigOR43-R	ATCACGCTGTCAATCTCG
YsigOR10-F	CACGGTGTATCTCGCTTAT	YsigOR44-F	CGAGATTGACAGCGTGAT
YsigOR10-R	GCGTGATTTGCCGACTTCTG	YsigOR44-R	TCAAGGAGTCCCTCAGTC
YsigOR11-F	AATCGCCGAGTACGAGGTCC	YsigOR45-F	AAAGGCAGAAGACGAAAAG
YsigOR11-R	TCGCCATCAAATAAGCACAAAG	YsigOR45-R	TTATGAACTGGACGAGGGTT
YsigOR12-F	CTGTTCCGGCTGCTTCTTCT	YsigOR46-F	ACCAAAGCGGAAACGGAAGC
YsigOR12-R	CGTCGGCACCTTCATCTTTT	YsigOR46-R	TTTCAGGACCTCTGCCAACT
YsigOR13-F	GCCTTCATTGGGTGATTGTC	YsigOR47-F	GAGGACCGAAGCGATCATAT
YsigOR13-R	GGAAACCATAGAGGGAAAGG	YsigOR47-R	GATAAAGAATGAGCGAGCAA
YsigOR14-F	AGACCACTGTTGCGTTCGTT	YsigOR48-F	AAGAAGTGGAGGCGGTGATA
YsigOR14-R	GTAGCCAAGGGTCACCATAT	YsigOR48-R	CACTCAGTGGCAAAGGAAGG
YsigOR15-F	CCCAGGGTTTGTATGGTGTT	YsigOR49-F	CACGCTGTTTGTGTCTCAC
YsigOR15-R	CAGGAATGTCCAGGAAGTG	YsigOR49-R	CGTTGTACCAGTCGCTTTTCG
YsigOR16-F	GCTCTACGTGGTGTTCCTCC	YsigOR50-F	CACGACCGAGGGAAGTGT
YsigOR16-R	TGGCGACAACATACTTCTCAAT	YsigOR50-R	CGAGGAAGAGCGATATGAA

Primer name	Sequence (5'-3')	Primer name	Sequence (5'-3')
YsigOR17-F	ATCGGTGCCTATGTAAGTGC	YsigOR51-F	GCCTGGGATACAAATGAT
YsigOR17-R	ATACCATCATCTGGAGTGCC	YsigOR51-R	ACCGTAGGTCGCCTCGTT
YsigOR18-F	GAACCTGCGGTCATAGTCCA	YsigOR52-F	CCTGGCAAGGGTGATGGACT
YsigOR18-R	TTTCCTCGTGGTGCCTGATA	YsigOR52-R	CCCGACATTCAGGGCTATTT
YsigOR19-F	GCGTCCTCGGCTTCTTCATA	YsigOR53-F	CGCTTTGTCCGAAACTGCA
YsigOR19-R	TAAGTAGCCCAAAGCCAAGC	YsigOR53-R	ACGCCTGTTCTGGATGACG
YsigOR20-F	CGGTAGACGAAGCGTTGTTA	YsigOR54-F	GGGGCCTCATACTGGTGTTC
YsigOR20-R	ATACTGAGGAGCCTCTGGTG	YsigOR54-R	TCACGCAGACCTCGTAGCAC
YsigOR21-F	ATGGCTAAGGACAAGCACAA	YsigOR55-F	TCCTGGACGCTTGGACAC
YsigOR21-R	AGGAAGCCGATACAGAGGAC	YsigOR55-R	GGAGGTGGAGCATTTGGA
YsigOR22-F	TTTATCTTCTTCGGTGGA	YsigOR56-F	TAACAACCCTCCTAGTGC
YsigOR22-R	TAAGCGGAGGGAGTCAAT	YsigOR56-R	CATAGTTTATCAGCCAACC
YsigOR23-F	GCAGGGACTGGCTTACTC	YsigOR57-F	CGTGGGCGAACTAATC
YsigOR23-R	TGCCTGGTGGATTCTTAC	YsigOR57-R	ACGAAGGCACCAATCA
YsigOR24-F	TGATTGGCTACTCTACTCG	YsigOR58-F	TAGTGTGATTCTCGCTGTA
YsigOR24-R	CGTGGGACTTCACCTGTTT	YsigOR58-R	GTAGGTGCGGAGGTTG
YsigOR25-F	TGTATTGTTGGGCAGGTGAAAT	YsigOR59-F	TCGTTTGCCCTATTCC
YsigOR25-R	GGACAGGTCTCGTCGTAAGGT	YsigOR59-R	ACCCGAAACCATACTTGA
YsigOR26-F	ATTACCAAAGACGCTGAG	YsigOR60-F	GTAAGGAGCTTGAGGCG
YsigOR26-R	ATGTAGGCTGACACGAAG	YsigOR60-R	TGCTGTTTCCGATAATGTA
YsigOR27-F	GCCTTCTTAGGGCCTTTC	YsigOR61-F	AAGGAGGAAGTCTCAGCG
YsigOR27-R	CCATTTCCAGTTGGTTCGA	YsigOR61-R	AAATCACCGATAGCACAG
YsigOR28-F	GGCTTCTGGCTCGCCTACCT	YsigOR62-F	CTTCATCTGGATTATTAGCGTCAC
YsigOR28-R	GTAGAGGTAACGCTGGAACG	YsigOR62-R	ACCCGTTTCTGTTTCGTCATT
YsigOR29-F	AACCTCATAGACGCCTGGACAC	YsigOR63-F	TTCTTCACGACCAACTCC
YsigOR29-R	CTGAGCAGGTACTTGAGATTGT	YsigOR63-R	CCTTACTTCCGTCGCCATA
YsigOR30-F	CCCGTTGGGTTTCGCTTACTC	YsigOR64-F	TCAAACCTCAGCGGTATCTG
YsigOR30-R	CCGCCTCAGGTCTTCGTTC	YsigOR64-R	CAACCCGTACATCAAAGC
YsigOR31-F	TTTGATGTAACCAAGAACCAG	YsigOR65-F	CAGATTCTCGGTTTGTG
YsigOR31-R	AATGATGCCGTATGTCCTCC	YsigOR65-R	TCCCAGGACTTGGTGTA
YsigOR32-F	TGTGGAGTGGCGACAAGTGC	Ysig β -actin-F	ATGCAGAAGGAAATCACCGC
YsigOR32-R	TGATGCCGTATGTCCTCCTT	Ysig β -actin-R	TTAGAAGCACTTGCGGTGGA
YsigOR33-F	GCCGCTTCCATTACAGGCATAG		
YsigOR33-R	TTTGTAATCATCGCTGGGTG		

Supplementary Table II.- Assembly quality of *Yemma signatus* antennal transcriptome.

Sequence length (bp)	Transcripts		Unigenes	
	No.	Percentage (%)	No.	Percentage (%)
200~500	97 030	65.24	83 053	71.91
500~1 000	25 598	17.21	17 564	15.21
1 000~2 000	15 953	10.73	9 518	8.24
>2 000	10 155	6.83	5 356	4.64
Total number	148 736		115 491	
N50 length (bp)	1 181		863	
Mean length (bp)	687		578	

Supplementary Table III.- Successful annotation rate of genes of *Yemma signatus* antennal transcriptome.

Annotated database	Unigenes	Percentage (%)
NR	32 842	28.43
NT	14 986	12.97
KO	16 113	13.95
SwissProt	29 905	25.89
PFAM	31 781	27.51
GO	32 216	27.89
KOG	21 349	18.45
Annotated in all databases	6 317	5.46
Annotated in at least one database	46 224	40.02
Total unigenes	115 491	100