**The whole body transcriptome of *Coleophora obducta* reveals important olfactory proteins**

Dongbai Wang2, Jing Tao3, Pengfei Lu3, Youqing Luo3, Ping Hu1,2

1 Guangxi University, Nanning, Guangxi, China

2 Xingan Vocational and Technical College, Xinganmeng, Inner mongolia, China

3 Beijing Key Laboratory for Forest Pest Control, Beijing Forestry University, Beijing, China

**Supplementary file 4 Putative olfactory protein in the** **whole body transcriptome of *C. obducta***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | **Best Blast Match** |
| **Number** | **Gene ID** | **Gene length(bp)** | **ORF length(bp)** |  **FPKM** |  | **Name** | **ACC. Number** | **Speceies** | **E-value** |
| CobdGOBP1 | TRINITY\_DN10193\_c4\_g1 | 1888 | 501 | 86.05  | 　 | general odorant binding protein  | AOG12859.1 | *Eogystia hippophaecolus* | 6.10E-61 |
| CobdOBP1 | TRINITY\_DN10393\_c1\_g2 | 822 | 219 | 20.65  | 　 | Odorant Binding Protein 38  | ARO70197.1 | *Dendrolimus punctatus* | 1.10E-06 |
| CobdOBP2 | TRINITY\_DN10942\_c3\_g4 | 1072 | 303 | 5.28  | 　 | odorant binding protein 16  | AVZ44709.1 | *Grapholita molesta* | 5.90E-69 |
| CobdOBP3 | TRINITY\_DN12399\_c3\_g2 | 464 | 408 | 17.69  | 　 | odorant binding protein  | AOG12879.1 | *Eogystia hippophaecolus* | 1.90E-40 |
| CobdOBP4 | TRINITY\_DN14180\_c1\_g1 | 402 | 327 | 197.37  | 　 | odorant binding protein 16  | ALD65890.1 | *Spodoptera litura* | 1.00E-13 |
| CobdOBP5 | TRINITY\_DN14253\_c1\_g7 | 837 | 540 | 21.43  | 　 | odorant binding protein  | AOG12877.1 | *Eogystia hippophaecolus* | 7.70E-40 |
| CobdOBP6 | TRINITY\_DN3399\_c0\_g1 | 579 | 573 | 1.92  | 　 | odorant binding protein 9  | ALD65883.1 | *Spodoptera litura* | 4.40E-10 |
| CobdOBP7 | TRINITY\_DN5958\_c0\_g1 | 587 | 459 | 3.75  | 　 | odorant binding protein LOC100301496 precursor  | NP\_001153664.1 | *Bombyx mori* | 2.50E-45 |
| CobdOBP8 | TRINITY\_DN6761\_c0\_g1 | 947 | 759 | 24.95  | 　 | odorant binding protein  | AOG12867.1 | *Eogystia hippophaecolus* | 7.50E-84 |
| CobdOBP9 | TRINITY\_DN8533\_c0\_g1 | 859 | 720 | 6.35  | 　 | odorant binding protein  | AOG12855.1 | *Eogystia hippophaecolus* | 3.00E-55 |
| CobdGOBP2 | TRINITY\_DN8926\_c1\_g4 | 808 | 489 | 178.96  | 　 | general odorant binding protein  | AEZ52491.1 | *Orthaga achatina* | 1.30E-63 |
| CobdOBP10 | TRINITY\_DN9234\_c2\_g2 | 461 | 423 | 12.12  | 　 | odorant binding protein  | AOG12873.1 | *Eogystia hippophaecolus* | 5.80E-58 |
| CobdOBP11 | TRINITY\_DN6480\_c0\_g1 | 715 | 459 | 59.70  | 　 | odorant-binding protein 4  | AGK24580.1 | *Chilo suppressalis* | 9.70E-60 |
| CobdPBP1 | TRINITY\_DN10947\_c2\_g3 | 831 | 465 | 23.86  | 　 | pheromone binding protein 2  | AKA27976.1 | *Atrijuglans hetaohei* | 3.00E-60 |
| CobdPBP2 | TRINITY\_DN6722\_c0\_g1 | 804 | 495 | 5.00  | 　 | pheromone-binding protein 3  | AHZ89399.1 | *Grapholita molesta* | 4.20E-51 |
| CobdPBP3 | TRINITY\_DN7344\_c0\_g1 | 1377 | 543 | 9.08  | 　 | pheromone binding protein 2  | ACJ07123.1 | *Chilo suppressalis* | 1.40E-14 |
| CobdCSP1 | TRINITY\_DN9951\_c0\_g1 | 968 | 336 | 72.92  | 　 | chemosensory protein 20  | AKT26494.1 | *Spodoptera exigua* | 9.50E-42 |
| CobdCSP2 | TRINITY\_DN9566\_c1\_g1 | 553 | 381 | 9.97  |  | chemosensory protein 3  | AGR39573.1 | *Agrotis ipsilon* | 1.90E-34 |
| CobdCSP3 | TRINITY\_DN8861\_c1\_g4 | 771 | 390 | 370.89  |  | chemosensory protein  | ABW34383.1 | *Pieris rapae* | 1.90E-40 |
| CobdCSP4 | TRINITY\_DN8789\_c1\_g1 | 769 | 129 | 92.22  |  | chemosensory protein  | AIX97838.1 | *Cnaphalocrocis medinalis* | 3.00E-14 |
| CobdCSP5 | TRINITY\_DN8204\_c1\_g1 | 1428 | 966 | 18.71  |  | chemosensory protein 14  | AKT26490.1 | *Spodoptera exigua* | 3.80E-55 |
| CobdCSP6 | TRINITY\_DN5965\_c0\_g1 | 525 | 360 | 32.30  |  | chemosensory protein 7 precursor  | NP\_001037068.1 | *Bombyx mori* | 4.50E-30 |
| CobdCSP7 | TRINITY\_DN4941\_c0\_g2 | 276 | 228 | 1.43  |  | putative chemosensory receptor 4, partial  | CAD31946.1 | *Heliothis virescens* | 5.80E-37 |
| CobdCSP8 | TRINITY\_DN14546\_c1\_g4 | 1019 | 330 | 2.56  |  | chemosensory protein  | AIX97829.1 | *Cnaphalocrocis medinalis* | 7.90E-47 |
| CobdCSP9 | TRINITY\_DN14335\_c4\_g2 | 988 | 369 | 12.72  |  | chemosensory protein 5  | BAV56809.1 | *Ostrinia furnacalis* | 2.10E-44 |
| CobdCSP10 | TRINITY\_DN13445\_c0\_g1 | 744 | 324 | 79.19  |  | chemosensory protein  | APG32548.1 | *Conogethes punctiferalis* | 4.00E-16 |
| CobdCSP11 | TRINITY\_DN12620\_c1\_g1 | 2535 | 267 | 4.33  |  | putative chemosensory receptor 2  | AAW52583.1 | *Spodoptera exigua* | 2.30E-236 |
| CobdCSP12 | TRINITY\_DN12289\_c0\_g1 | 437 | 342 | 1.85  |  | chemosensory protein 8  | AKT26485.1 | *Spodoptera exigua* | 3.20E-37 |
| CobdCSP13 | TRINITY\_DN10385\_c3\_g2 | 685 | 645 | 1.70  |  | putative chemosensory receptor 13  | CAG38114.1 | *Heliothis virescens* | 2.60E-46 |
| CobdCSP14 | TRINITY\_DN10019\_c5\_g4 | 699 | 384 | 379.12  |  | chemosensory protein 7  | BAV56811.1 | *Ostrinia furnacalis* | 1.40E-39 |
| CobdPR1(CobdOR1) | TRINITY\_DN10385\_c3\_g2 | 685 | 645 | 1.70  |  | putative odorant receptor  | AGY14585.2 | *Sesamia inferens* | 8.20E-48 |
| CobdOR2 | TRINITY\_DN10828\_c0\_g4 | 254 | 234 | 2.72  |  | odorant receptor 4  | XP\_021208172.1 | *Bombyx mori* | 1.00E-11 |
| CobdPR2(CobdOR3) | TRINITY\_DN11086\_c0\_g2 | 1648 | 1296 | 3.39  |  | odorant receptor 13a-like  | NP\_001292415.1 | *Plutella xylostella* | 7.70E-76 |
| CobdPR3(CobdOR4) | TRINITY\_DN11086\_c0\_g4 | 604 | 525 | 1.72  |  | PREDICTEDodorant receptor 13a-like  | XP\_011564712.1 | *Plutella xylostella* | 2.30E-38 |
| CobdOR5 | TRINITY\_DN12061\_c0\_g6 | 577 | 366 | 6.23  |  | putative odorant receptor OR29  | AST36264.1 | *Hedya nubiferana* | 2.50E-58 |
| CobdOR6 | TRINITY\_DN1239\_c0\_g1 | 376 | 93 | 1.32  |  | odorant receptor 4 isoform X2  | XP\_021205150.1 | *Bombyx mori* | 1.00E-20 |
| CobdOrco | TRINITY\_DN12620\_c1\_g1 | 2535 | 1425 | 4.33  | 　 | odorant receptor co-receptor  | AII15784.1 | *Sitotroga cerealella* | 3.20E-238 |
| CobdOR7 | TRINITY\_DN17301\_c0\_g1 | 342 | 237 | 1.25  | 　 | Odorant Receptor 40  | ARO70252.1 | *Dendrolimus punctatus* | 6.50E-30 |
| CobdOR8 | TRINITY\_DN5607\_c0\_g1 | 444 | 81 | 2.23  | 　 | odorant receptor, partial  | AIG51872.1 | *Helicoverpa armigera* | 7.00E-08 |
| CobdOR9 | TRINITY\_DN8037\_c1\_g5 | 406 | 141 | 7.95  | 　 | Odorant receptor, partial  | KOB65086.1 | *Operophtera brumata* | 9.20E-07 |
| CobdOR10 | TRINITY\_DN8149\_c2\_g3 | 1387 | 216 | 19.56  | 　 | odorant receptor, partial  | AIG51872.1 | *Helicoverpa armigera* | 4.40E-24 |
| CobdOR11 | TRINITY\_DN9175\_c3\_g1 | 2849 | 1215 | 4.93  | 　 | odorant receptor 17  | ARO76423.1 | *Conogethes punctiferalis* | 4.70E-166 |
| CobdOR12 | TRINITY\_DN9366\_c2\_g1 | 1384 | 693 | 24.94  | 　 | odorant receptor 60  | ALM26243.1 | *Athetis dissimilis* | 3.20E-83 |
| CobdIR25a | TRINITY\_DN11261\_c2\_g2 | 3717 | 2898 | 12.86  | 　 | putative ionotropic receptor IR25a  | AQM73611.1 | *Cydia nigricana* | 0 |
| CobdIR75p2(CobdIR1) | TRINITY\_DN11626\_c1\_g1 | 2128 | 1503 | 8.22  | 　 | ionotropic receptor  | BAR64805.1 | *Ostrinia furnacalis* | 2.60E-153 |
| CobdIR64a(CobdIR2) | TRINITY\_DN12976\_c3\_g2 | 1721 | 1116 | 1.70  | 　 | ionotropic receptor  | BAR64801.1 | *Ostrinia furnacalis* | 2.10E-116 |
| CobdIR93a | TRINITY\_DN13522\_c1\_g1 | 2343 | 2166 | 2.21  | 　 | ionotropic receptor 93a  | XP\_021190111.1 | *Helicoverpa armigera* | 0 |
| CobdIR62a(CobdIR3) | TRINITY\_DN4307\_c0\_g2 | 1226 | 972 | 1.60  | 　 | ionotropic receptor 60a1b, partial  | AMM70740.1 | *Heliconius timareta*  | 9.40E-87 |
| CobdIR68a(CobdIR4) | TRINITY\_DN7754\_c0\_g1 | 1871 | 1548 | 23.73  | 　 | ionotropic receptor  | BAR64816.1 | *Ostrinia furnacalis* | 1.10E-200 |
| CobdIR76b(CobdIR5) | TRINITY\_DN8192\_c1\_g1 | 1857 | 1626 | 25.69  | 　 | ionotropic receptor  | AOG12850.1 | *Eogystia hippophaecolus* | 3.60E-207 |
| CobdGR1 | TRINITY\_DN8311\_c0\_g1 | 771 | 357 | 172.98  | 　 | gustatory receptor  | AOG12970.1 | *Eogystia hippophaecolus* | 4.00E-19 |
| CobdGR64 | TRINITY\_DN7854\_c1\_g1 | 442 | 333 | 70.34  | 　 | gustatory receptor for sugar taste 64e-like  | XP\_013148432.1 | *Papilio polytes* | 1.20E-12 |
| CobdGR43a | TRINITY\_DN4941\_c0\_g2 | 276 | 228 | 1.43  | 　 | gustatory receptor for sugar taste 43a-like  | XP\_021196329.1 | *Helicoverpa armigera* | 5.80E-37 |
| CobdGR2 | TRINITY\_DN4584\_c0\_g2 | 372 | 138 | 1.44  | 　 | gustatory receptor 2, partial  | ALM26252.1 | *Athetis dissimilis* | 1.00E-28 |
| CobdGR3 | TRINITY\_DN16452\_c0\_g1 | 235 | 138 | 3.14  | 　 | antennal gustatory receptor 12  | ARO70284.1 | *Dendrolimus punctatus* | 3.30E-09 |
| CobdGR4 | TRINITY\_DN14538\_c0\_g2 | 1778 | 954 | 9.92  |  | gustatory receptor 2, partial  | ALM26252.1 | *Athetis dissimilis* | 5.90E-90 |
| CobdGR5 | TRINITY\_DN14422\_c2\_g1 | 1192 | 867 | 5.27  |  | gustatory receptor 2, partial  | ALM26252.1 | *Athetis dissimilis* | 1.30E-40 |
| CobdGR6 | TRINITY\_DN13413\_c1\_g3 | 1449 | 753 | 1.40  |  | gustatory receptor 2, partial  | ALM26252.1 | *Athetis dissimilis* | 6.70E-100 |
| CobdGR7 | TRINITY\_DN12116\_c0\_g7 | 772 | 408 | 4.24  |  | gustatory receptor 4  | ASW18693.1 | *Helicoverpa armigera* | 4.00E-51 |
| CobdGR8 | TRINITY\_DN11423\_c2\_g3 | 733 | 636 | 2.70  | 　 | gustatory receptor 2, partial  | ALM26252.1 | *Athetis dissimilis* | 1.90E-50 |
| CobdODE1 | TRINITY\_DN10244\_c0\_g3 | 2107 | 1491 | 6.51  | 　 | odorant degrading enzyme CXE14  | AII21988.1 | *Sesamia inferens* | 8.10E-171 |
| CobdODE2 | TRINITY\_DN9716\_c0\_g1 | 2422 | 1629 | 6.30  | 　 | odorant degrading enzyme CXE10  | AII21984.1 | *Sesamia inferens* | 2.40E-174 |
| CobdODE3 | TRINITY\_DN10903\_c0\_g2 | 1868 | 1629 | 20.22  | 　 | odorant degrading enzyme CXE18  | AII21990.1 | *Sesamia inferens* | 2.20E-196 |
| CobdODE4 | TRINITY\_DN12476\_c3\_g2 | 1912 | 1677 | 25.07  | 　 | odorant degrading enzyme CXE13  | AII21987.1 | *Sesamia inferens* | 5.10E-241 |
| CobdODE5 | TRINITY\_DN10817\_c2\_g3 | 2163 | 1677 | 4.43  | 　 | odorant degrading enzyme CXE9 | AII21983.1 | *Sesamia inferens* | 7.70E-209 |
| CobdODE6 | TRINITY\_DN10817\_c2\_g4 | 1965 | 1617 | 8.85  | 　 | odorant degrading enzyme CXE3  | AII21980.1 | *Sesamia inferens* | 1.10E-201 |
| CobdCXE1 | TRINITY\_DN10261\_c0\_g1 | 2017 | 1632 | 7.34  | 　 | antennal esterase CXE12  | AMB19665.1 | *Cydia pomonella]* | 4.10E-204 |
| CobdCXE2 | TRINITY\_DN10998\_c0\_g1 | 3257 | 2070 | 86.89  | 　 | antennal oxidoreductase  | AAR26515.1 | *Mamestra brassicae* | 0 |
| CobdCXE3 | TRINITY\_DN13764\_c3\_g1 | 3208 | 1695 | 9.72  | 　 | Antennal esterase CXE14  | KOB65096.1 | *Operophtera brumata* | 2.30E-153 |
| CobdCXE4 | TRINITY\_DN16765\_c0\_g1 | 260 | 213 | 2.86  | 　 | Antennal esterase CXE19 | KOB70665.1 | *Operophtera brumata* | 1.10E-29 |
| CobdCXE5 | TRINITY\_DN9092\_c1\_g1 | 1447 | 1113 | 6.45  | 　 | antennal carboxylesterase 18, partial  | AKS40370.1 | *Chilo suppressalis* | 2.70E-101 |
| CobdSNMP3 | TRINITY\_DN11604\_c0\_g1 | 737 | 575 | 3.78  | 　 | PREDICTED: sensory neuron membrane protein 2-like  | XP\_014366457.1 | *Papilio machaon* | 2.00E-60 |
| CobdSNMP1 | TRINITY\_DN13248\_c0\_g1 | 2403 | 1593 | 6.80  | 　 | sensory neuron membrane protein 1-like  | XP\_026331738.1 | *Hyposmocoma kahamanoa* | 0.00E+00 |
| CobdSNMP2 | TRINITY\_DN7754\_c0\_g1 | 1871 | 1566 | 23.73  | 　 | RecName: Full=Sensory neuron membrane protein 2 | E5EZW9.1 | *Ostrinia nubilalis* | 0.00E+00 |