Table S1. Primers used for RT-qPCR analysis of olfactory genes of the *P. akamusi*

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| --- | --- | --- |
| Gene | Sequence | Length(bp) |
| Odorant binding proteins | |  |
| OBP1 | Sense: AGACGGGAATTAGCAGA | 165 |
| Antisense: CAGCAACTAGACGAGCAA |
| OBP2 | Sense: CTGACGTGGACAGAATAG | 138 |
| Antisense: TTGCCAATGACATGAAAC |
| OBP3 | Sense: GCTACCGTTGATGCTTG | 133 |
| Antisense: CGGCTGTTGGTTTCG |
| OBP4 | Sense: AAGCTGGATTTATGGATG | 130 |
| Antisense: GGTGTTGCTCCCTTTT |
| OBP5 | Sense: GCTGCATGGGCTCCGATAA | 131 |
| Antisense: TTGCCAATGAGACCAACTTCC |
| OBP6 | Sense: AGAGGGAAAGTGCTTATT | 104 |
| Antisense: CAGACATTGTCGAGGC |
| OBP7 | Sense: ATGCAAGTGCCGAGAA | 128 |
| Antisense: CACCTCCATCTGTGGTTC |
| OBP8 | Sense: GGCGGTTTGGTTGAT | 147 |
| Antisense: TTTGCCGATTTGTGC |
| OBP9 | Sense: TTCGGAGTAACCAAAGA | 107 |
| Antisense: GCAATATCATCAGAGGC |
| OBP10 | Sense: TGCTTCAACCACCAG | 195 |
| Antisense: CAGGGTCCTCAACATC |
| OBP11 | Sense: CTAAAACAGGAATCGA | 170 |
| Antisense: TTTAAGCCTTTCACCT |
| OBP12 | Sense: GGCAATCGCAAAATA | 164 |
| Antisense: ATCACCCCAAATCCT |
| OBP13 | Sense: ATGGATGAGGAAGGC | 140 |
| Antisense: GATTTATTGCAGATTGT |
| Odorant receptors | |  |
| OR1 | Sense: ATCAAGCGTATGAAGGA | 170 |
| Antisense: AATGGCGTTGGAGTG |
| OR2 | Sense: TGCCGTCATCTCAATC | 103 |
| Antisense: TAAGTAAGCACCCGTTT |
| OR3 | Sense: TTTCGGAGCATTTCAG | 175 |
| Antisense: CATTCGGATTGCTGAT |
| OR4 | Sense: ATCCGAAAATAAAACG | 144 |
| Antisense: GTAAAACTGTGCAGTAAGA |
| OR5 | Sense: AATGGAGCCAGATGA | 162 |
| Antisense: AAGATTGAAGCGAGAA |
| OR6 | Sense: CTCCGTGTTGTTTGG | 195 |
| Antisense: TTCGTGCTCTTATCGA |
| OR7 | Sense: CTCTTCATTCCCTGCTA | 107 |
| Antisense: TTTCTTTCCTCCTTTGT |
| OR8 | Sense: GGGAACGATGATTGA | 156 |
| Antisense: AATGGCCCACCAATA |
| Gustatory receptors | |  |
| GR1 | Sense: TTTGATTCCGTCCCTT | 153 |
| Antisense: CGTCGTCTACCGATTAG |
| GR2 | Sense: TCAAATGACCAATGCTGA | 154 |
| Antisense: TGATGTACTGCGGATGA |
| GR3 | Sense: ATCAAGCGTATGAAGGA | 170 |
| Antisense: AATGGCGTTGGAGTG |
| GR4 | Sense: AGTTCATTTCGTTGCT | 149 |
| Antisense: CTTTTCACTGATGCTTT |
| GR5 | Sense: AATGGACGAAACAAAC | 175 |
| Antisense: ATCATCCTCGCAAATA |
| GR6 | Sense: GGCTTTGAATCGTTTGC | 110 |
| Antisense: CTTGGCGTTTAATTTCG |
| GR7 | Sense: TCGCTTTCAAATGGTT  Antisense: GTCCTTTGCGAGATTG | 191 |
| GR8 | Sense: TGTAACGCATATTCATCAG | 102 |
| Antisense: GCAATTCAGCGAGGC |
| GR9 | Sense: GCCGTTCCAAGGGCATCT | 129 |
| Antisense: TCCGCAAACCTTCAGCACA |
| GR10 | Sense: ACAAGCTATTTAATAATTC | 147 |
| Antisense: AGTGGTGAGTGAAATAAATG |
| GR11 | Sense: TGAAACTGAGCGTATGT | 117 |
| Antisense: TAAGTGACCAGCGAAC |
| GR12 | Sense: TGGCAAGATGGTGAC | 151 |
| Antisense: GTACATTCGGCTCGT |
| Chemosensory proteins | |  |
| CSP1 | Sense: ATTGATAATCGTCCTG | 101 |
| Antisense: TCATTGCTATCAGACTT |  |
| Ionotropic receptors | |  |
| IR1 | Sense: TTAATGAACGCTACAAACG | 117 |
| Antisense: AGGGAGCAGTAAACAAATAGA |
| IR2 | Sense: GGCGGTGGTGGTAAT | 104 |
| Antisense: TCAGCAGGCAGTGGTT |
| IR3 | Sense: GTCAGCATCGGGAGCA | 173 |
| Antisense: CGAACCAAACGCACT |
| IR4 | Sense: ATTGTATTGCGGTGAAG | 199 |
| Antisense: AAATCCATCTAAGCCAGT |
| IR5 | Sense: TCTCGTCAACGGCAACC | 169 |
| Antisense: GGCGGAAAGTGTAAGGATG |
| IR6 | Sense: TTGCATCACGCCTCG | 200 |
| Antisense: ATCCCATTTCTTTGTCACTT |
| IR7 | Sense: TTTCTGCCGTAAGTCC | 192 |
| Antisense: ATCCCGATGATCCAAT |
| IR8 | Sense: TCCCAAACTCGGTCAA | 106 |
| Antisense: GCGTACCAAGGCATC |
| IR9 | Sense: AATTACGAGCGCAACC | 115 |
| Antisense: GTGGAAGACCGATTTGA |
| IR10 | Sense: TTCAACGCCCAAAGC | 168 |
| Antisense: TTGCCGAAAGGAAGC |
| IR11 | Sense: TATGACAAGTGGTGGAAA | 153 |
| Antisense: AATGATGGCTATAAGAACAG |
| IR12 | Sense: AAACTGGAGCCGTGAA | 119 |
| Antisense: TGGCGATGTAAAGTAGGA |
| IR13 | Sense: GCCATTGGCATGAGT | 116 |
| Antisense: GGCAATCCACCGTAC |
| IR14 | Sense: CGGCTTTATTTCGTCAA | 138 |
| Antisense: GGTAAGACAACGAGCACAA |
| IR15 | Sense: TTTCAAAGCCCTTCAT | 124 |
| Antisense: GCAGCGAGAACATAGAG |
| IR16 | Sense: CTGAAAGAGTCGGGAGA | 155 |
| Antisense: AGTAGACCGCCAATAAGA |
| Sensory neuron membrane proteins | |  |
| SNMP1 | Sense: CGTTGCTTCACCCAT | 138 |
| Antisense: GGAGTTCCCGTAGTCG |  |
| reference gene | |  |
| β-tubulin | Sense: GTTCCGTCGCAAAGC | 155 |
| Antisense: CTTCATCTTCACCCTCAAT |  |