**Table S1. The PCR primer sequences used in this experiment**

|  |  |
| --- | --- |
| Primer name | (5'→3') nucleotide sequence |
| **RNAi primers** |  |
| DopEcR-RNAiF | gcgtaatacgactcactataggggtggtgccgctgtccgtat |
| DopEcR-RNAiRDopEcR-swRNAiFDopEcR-swRNAiRGFP-RNAiFGFP-RNAiRGFP-swRNAiFGFP-swRNAiR | gcgtaatacgactcactataggttccgtgtcgaaattagcttctactcaagatctggtggtgccgctgtccgtattactcaggtaccttccgtgtcgaaattagcttcgcgtaatacgactcactataggtggtcccaattctcgtggaacgcgtaatacgactcactataggcttgaagttgaccttgatgcctactcagcggccgctggtcccaattctcgtggaactactcactcgagcttgaagttgaccttgatgcc |
| **qRT-PCR primers** |  |
| DopEcR-QF | actacgtatgcttacacggcca |
| DopEcR-QR | tgagccagaacgtgcagaccat |
| HHR3-QRTR1 | gactttgctgatgtcaccctccgc |
| HHR3-QRTF1EcRB1-QRTF1EcRB1-QRTR1USP1-QRTF1USP1-QRTR1BrZ7FBrZ7RRpL27FRpL27R | tcaagcacctcaacagcagccctaaattgcccgtcagtacgatgagcttctcattgaggaggtcctgacagcaatgttttccagctccagctgactgaagggtgactgtccttactgcggcttaattcctttgaccatgactacaggtatccccgcaaagtgcgtccttggcgctgaacttctc |
| β-actinF | cctggtattctgaccgtatgc |
| β-actinRCHIP FCHIP R | ctgttggaaggtggagagggaaatattcgaatcgttggcgcagtgtaattaagagaca |
| **Expression**HaDopECR-expFHaDopECR-expR**Overexpression**  | tactcagaattacatcattgcctcgtttctcatactcactcgagctcgggttggacaggttct |
| OV ErGPCR2-F\* | tactcagagctcatgattacattcataacagtg |
| OV ErGPCR2-R | tactcactgcagaggctgtttgatgttgagcgac |
| OV ErGPCR1-F | tactcactgcagatgattacattcataaca |
| OV ErGPCR1-R | tactcaggtaccaaattcgccattagtcgt |
| OV DopEcR-F | tactcagagctcatgcctgccaagatgatgagc |
| OV DopEcR-ROV Gαq-FOV Gαq-ROV Gαs-FOV Gαs-R | tactcaagatctggtcgtcgttgtccaggccgattactcagagctcatggagtgctgcatgtcggtactcactgcagtgctagattaaattccttgatactcagagctcatgggatgcttcggctcgtactcaagatctggagcagctcgtactgccg |

\*

\* The signal peptide from ErGPCR-1 was added in the front of 7TM (amino acid 359–757) of ErGPCR-2 to localize the 7TM of ErGPCR-2 on the cell membrane.