**KEY RESOURCES TABLE**

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| **REAGENT or RESOURCE** | **SOURCE** | **IDENTIFIER** |

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| **Chemicals** |

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| Geranylacetone  | Sigma-Aldrich  | C.A.S. 689-67-8 |
| Methyl-5-hepten-2-one | Sigma-Aldrich  | C.A.S. 110-93-0 |
| Dodecanal | Sigma-Aldrich  | C.A.S. 112-54-9 |
| L-Lactic acid  | Sigma-Aldrich  | C.A.S. 79-33-4 |
| Octanoic acid | ICN | C.A.S. 124-07-2 |
| Heptanoic acid | ICN | C.A.S. 111-14-8 |
| Butyric acid | ICN | C.A.S. 107-92-6 |
| Octanal  | Chemicon:Acros  | C.A.S. 124-13-0 |
| Nonanal | Chemicon:Acros  | C.A.S. 124-19-6 |
| Limonene | Fluka | C.A.S. 5989-27-5 |
| Nonanoic acid | Fluka | C.A.S. 112-05-0 |
| 2-ethyl hexanol  | Lancaster | C.A.S. 104-76-7 |
| 1-octen-3-ol | Janssen Chimica | C.A.S. 3391-86-4 |
| Guanidine thiocyanate | Sigma-Aldrich | C.A.S. 593-84-0 |
| Sarkosyl | Fisher Scientific  | C.A.S. 137-16-6 |
| Chloroform | Fisher Scientific  | C.A.S. 67-66-3 |
| Linalool  | Sigma-Aldrich  | C.A.S. 78-70-6 |
| 2-mercapthoethanol | Sigma-Aldrich | C.A.S: 60-24-2 |

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| **Restriction enzymes** |

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| PmeI  | New England Biolabs | Catalog # R0560S |
| EcoRI | New England Biolabs | Catalog # R0101S |
| XhoI | New England Biolabs | Catalog # R0146S |
| MluI | New England Biolabs | Catalog # R1089S |

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| **Recombinant DNA** |
| pGT-Ir8a (used for donor plasmid) | This study | N/A |
| pMLM3613 (used for Cas9 MRNA) | [53] | Addgene # 42251 |
| pSL1180:polyUBdsRED (donor plasmid) | [54] | Addgene # 49327 |
| Oligonucleotides (primers) | Integrated DNA Technologies | See Table S1 |
| **Commercial Assays** |

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| MEGAscript T7 Transcription Kit  | Life Technologies | Catalog # AM1334 |
| MEGAclear transcription clean-up kit | Life Technologies | Catalog # AM1908 |
| mMachine mMachine T7 ultra kit | Thermo-Fisher Scientific | Catalog # AM1345 |
| DNeasy blood & tissue kits | QIAGEN GmbH | Catalog # 69504 |
| NucleoSpin gel and PCR cleanup kit  | Machery-Nagel Inc. | Catalog # 740609 |
| NEB PCR cloning kit | New England Biolabs | Catalog # E1202S |
| RNAlater stablization solution | Invitrogen | Catalog # AM7020 |
| RNAid Kit | MPBio | Catalog # 111007200 |
| TURBO DNA-free kit | Invitrogen | Catalog # AM1907 |
| KOD polymerase | EMD Millipore | Catalog # 71086 |
| Qiaquick PCR purification kit | Qiagen | Catalog # 28106 |
| Infusion HD cloning kit | Clontech | Catalog # 638909 |
| Qiagen Endo-free Maxiprep kit | Qiagen | Catalog #12362 |
| SimpleSeq premixed kit | Eurofins | N/A |
| IBI Genomic DNA extraction kit  | IBI scientific | Catalog # IB47222 |
| Amplitaq Gold 360 PCR master mix | Applied Biosystems | Catalog # 4398881 |
| QIAEX II Gel extraction kit | QIAGEN GmbH | Catalog # 20051 |
| pCR2.1 TOPO TA vector | Invitrogen | Catalog # K462040 |
| One Shot TOP10 cells | Invitrogen | Catalog # C607003 |
| QIAprep Spin Miniprep kit | QIAGEN GmbH | Catalog # 27104 |
| SuperScript II RT reagent kit | Invitrogen | Catalog # 18080-051 |
| RNase cocktail enzyme mix | Thermo-Fisher Scientific | Catalog # AM2286 |
| TaqMan 2X universal master mix | Thermo-Fisher Scientific | Catalog # 4324018 |
| Custom TaqMan Ir8a probe | ThermoFisher Scientific  | Catalog # 4331348 |
| **Experimental Models: Organisms/Strains** |
| *Ae. aegypti*: Orlando | Leslie Vosshall | N/A |
| *Ae. aegypti*: *Ir8adsRED* | This study | N/A |
| *Ae. aegypti*: *Ir8aattP* | This study | N/A |
| *Ae. aegypti*: *Orco5* | [21], BEI resources | NR-44377 |
| *Ae. aegypti*: *Orco16* | [21], BEI resources | NR-44378 |
| *Ae. aegypti*: *Gr3cfp* | [22], BEI resources | NR-48760 |

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| **Computer, Software and algorithms** |

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| Syntech EAG-Pro 4.6 | Custom-made | N/A |
| Peak Scanner software | Applied Biosystems | v1.0 |
| Impedance amplifier | Syntech | IDAC-4 |
| ZiFit | https://zifit.partners.org/ZiFit/ | N/A |
| Real time PCR system | Applied Biosystems | 7500 |
| Locomotor activity monitor | Trikinetics Inc. | LAM 25 |
| SnapGene & SnapGene Viewer | SnapGene | N/A |
| SDS software | Applied Biosystems | v1.4.1 |
| GraphPad Prism | GraphPad | Prism v7 & v8 |

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| **Others** |

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| Tetramin tropical fish food | Tetra | Catalog # 16152 |
| Capillary tubes | Blaubrand Intramark | Catalog # 1904637 |
| Cellulose acetate fly vial plug | Genesee Scientific | Catalog # 49-101 |
| CO2 diffusion pad | Tritech Research | Model # MINJ-DROS-FP |
| Membrane feeders | Chemglass | Catalog # CG-1835-70 |
| Uniport olfactometer | Custom-made | N/A |
| Carbon dioxide monitor  | Amprobe | Catalog # CO2-100 |
| Acrylic flowmeter | Dwyer Instrument Inc. | Catalog # VFA-4-SSV |
| Suntan knee-high pantyhose | L’eggs brand, Hanes | Model # 39400 |
| Disposable pellet pestles | Fisher Scientific | Catalog # 12-141-364 |