**Data and code used for making Extended Data Fig. 1**

**Folder: ExtDataFig1ad**

* IHC\_dPR1: Expression pattern of dPR1 split-Gal4.
* IHC\_TN1A Expression pattern of TN1A split-Gal4.

**Folder: ExtDataFig1b**

* MCFO\_dPR1: Multi-color flip-out image for dPR1 split-Gal4.

**Folder: ExtDataFig1c**

* IHC\_dPR1\_dsx: Images showing the coexpression of Gal4-driven mVenus and dsx. Green: mVenus. Magenta: dsx.

**Folder: ExtDataFig1e**

* MCFO\_TN1A: Multi-color flip-out image for TN1A split-Gal4.

**Folder: ExtDataFig1f-j**

Analysis

* ExtDataFig01\_Example\_TimeCourse\_OptStim\_Song\_dPR1.m: Code for plotting the example song trace during optogenetic stimulation in Extended Data Fig. 1f.
* ExtDataFig01\_TuningCurve\_OptStim\_Song.m: Code for plotting the tuning curves of pulse and sine songs induced by optogenetics in Extended Data Fig. 1g,i.
* ExtDataFig01\_Example\_TimeCourse\_OptStim\_Song\_dPR1.m: Code for plotting the example song trace during optogenetic stimulation in Extended Data Fig. 1h.

Data/Summary

* dataset.csv: A spreadsheet describing the genotype for each microphone recording channel in each experiment.
* EthogramComb\_\*: Files containing the time course of pulse/sine songs. Row: fly ID; Column: time bins.
* EthogramCombPulseTrain\_\*: Files containing the time course of pulse/sine songs. Row: fly ID; Column: time bins.
* Mic\_\*: Flies containing audio data for each experiment.
* OptStim\_\*: Files containing the timings of optogenetic stimulation in each experiment.

**Folder: Fig1k**

* IHC\_22D03LexA\_LexAopCsChrtdT: Expression pattern of 22D03-LexA in a male fly.

**Folder: Fig1l**

* IHC: Expression pattern of 22D03-LexA in a male and a female fly.

**Folder: Fig1m-q**

Analysis

* ExtDataFig01\_GrandAverTimeCourse\_OptStim\_Song\_SongDriver.m: Code for plotting the time course of pulse and sine song during optogenetic stimulation of the song driver in Extended Data Fig. 1m.
* ExtDataFig01\_TuningCurve\_OptStim\_Song\_SongDriver.m: Code for plotting the tuning curves of pulse and sine songs induced by optogenetics in Extended Data Fig. 1m,n.
* BoutLength\_WT.mat: File containing the song bout lengths of a control condition (w1118 crossed to UAS-CsChrimson).
* ExtDataFig01\_BoutLength.m: Code for plotting histograms of pulse and sine song bouts in Extended Data Fig. 1o.
* ExtDataFig01\_GrandAveTimeCourse\_OptStim\_Song\_pIP10.m: Code for plotting the time course of pulse and sine song during optogenetic stimulation of the pIP10 split-Gal4 in Extended Data Fig. 1p.
* ExtDataFig01\_TuningCurve\_OptStim\_Song\_pIP10.m: Code for plotting the tuning curves of pulse and sine songs induced by optogenetics in Extended Data Fig. 1r.

Data/Summary & Data/Summary\_pIP10

* Mic\_\*: Flies containing audio data for each experiment.
* EthogramCombPulseTrain.mat: Files containing the time course of pulse/sine songs. Row: fly ID; Column: time bins.
* StimComb.mat: Stimulation strength (from 1 to 6) in each trial (Column: block; Row: trial).