

Description of Additional Supplementary Files

File name: Supplementary Data 1

Description: Granger causality analysis results

File name: Supplementary Data 2

Description: Partial correlation analysis results

File name: Supplementary Data 3

Description: Source data behind the graphs in the paper

File name: Supplementary Movie 1.

Description: Larval zebrafish brain imaging with 2P LSM

File name: Supplementary Movie 2.

Description: Expression patterns of the double transgenic *Tg(elavl3:H2B-GCaMP6; elavl3:ReaChR-TagRFP)* zebrafish line .

File name: Supplementary Movie 3.

Description: ReaChR⁻ larval zebrafish in tail-free preparation during whole-brain imaging OFF and ON.

File name: Supplementary Movie 4.

Description: ReaChR⁺ larval zebrafish in tail-free preparation during whole-brain imaging OFF and ON.

File name: Supplementary Movie 5.

Description: Raw timelapse acquisition of whole-brain imaging during optogenetic stimulation of the left habenula.

File name: Supplementary Movie 6.

Description: 3D rotation of whole-brain activation probability map in response to left habenula stimulation.

File name: Supplementary Movie 7.

Description: Volumetric activation probability maps of individual larvae in response to left habenula stimulation.

File name: Supplementary Movie 8.

Description: Volumetric correlation maps of individual larvae.

File name: Supplementary Movie 9.

Description: 3D rotation of whole-brain functional connectivity of the left habenula.