

Supplementary Figure S1. The projection of GFP-positive neurons to the CeA and the VTA

The GFP-labeled axons in the CeA (A) and VTA (B). Scale bars: 100 μ m.

Supplementary Figure S2. The methodological validity for using the IS reporter mice

(A-F) CeA-projecting tdTomato-positive neurons in the mPFC (A), the IC (B), the alBNST (C), the PVT (D), the VMH (E), and the DR (F). Scale bars: 100 μ m. (G, H) The GFP-positive neurons and tdTomato-positive neurons in the LPB. Scale bars: 100 μ m.

Supplementary Figure S3. Activation of BMA neurons innervating the CeA and the VTA has no effect on conditioned place testing and anxiety-like behavior

(A) A schematic diagram of the viral injection and fiber implantation sites. (B) Percent changes in the occupancy time on the stimulation side after conditioning (after conditioning - before conditioning) ($n = 6$ mice for each group). (C) Experimental procedure for intermittent optogenetic activation of ChR2-expressing neurons in the open field test. (D, E) Optogenetic activation of ChR2-expressing neurons in the BMA did not affect the time mice spent in the center zone and locomotor activity of mice in the open field test ($n = 5$ mice for each group). (F) Experimental procedure for intermittent optogenetic activation of ChR2-expressing neurons in the elevated plus maze test. (G, H) Optogenetic activation of ChR2-expressing neurons in the BMA did not affect the time mice spent in the open arms and locomotor activity of mice in the elevated plus maze test ($n = 5$ mice for each group). Data are presented as mean \pm SEM.

Supplementary Figure S4. The types of neurons that innervate the CeA and the VTA (excitatory vs. inhibitory)

(A) Expression of *GFP*, *Vglut2*, and *Vgat* mRNAs with smFISH in the pBNST. Scale bars: 50 μ m. 24.1% \pm 1.8% and 67.7% \pm 1.7% of GFP-positive neurons in the pBNST expressed *Vglut2* and *Vgat*, respectively ($n = 3$ mice). (B) Expression of *GFP*, *Vglut2*, and *Vgat* mRNAs with smFISH in the BMA. Scale bars: 50 μ m. 56.1% \pm 1.5% and 34.9% \pm 3.0% of GFP-positive neurons in the BMA expressed *Vglut2* and *Vgat*, respectively ($n = 3$ mice). (C) Expression of *GFP*, *Vglut2*, and *Vgat* mRNAs with smFISH in the PPTg. Scale bars: 50 μ m. 92.5% \pm 1.2% and 5.5% \pm 0.5% of GFP-positive neurons in the PPTg expressed *Vglut2* and *Vgat*, respectively ($n = 3$ mice). Data are presented as mean \pm SEM.