

Supporting Information

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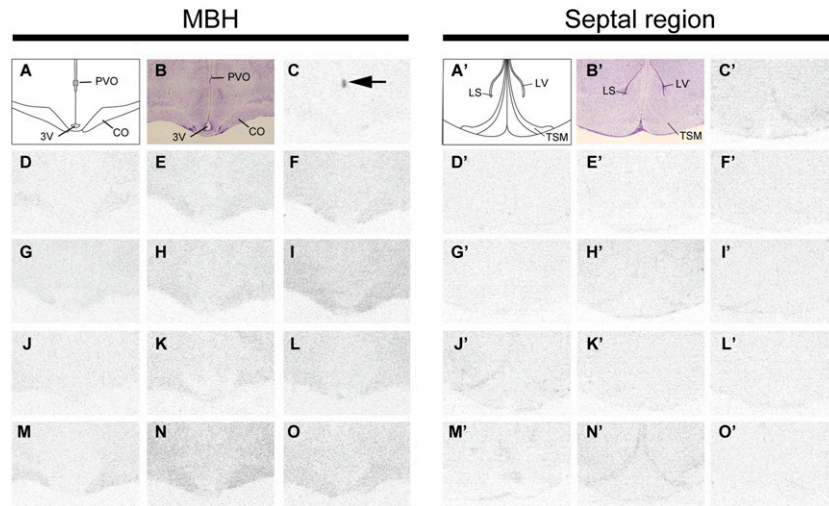


Fig. S1. Expression analysis of members of the opsin superfamily in the mediobasal hypothalamus (MBH) (Left) and the septal region of telencephalon (Right). Schematic drawings (A and A') and light-field photomicrographs of Nissl-stained coronal sections (B and B'). (C–O and C'–O') Representative autoradiograms for members of the opsin superfamily. (C and C') Opsin 5. (E and E') Blue-sensitive cone opsin. (F and F') Violet-sensitive cone opsin. (G and G') Green-sensitive cone opsin. (H and H') Red-sensitive cone opsin. (I and I') Rhodopsin. (J and J') Encephalopsin. (K and K') Melanopsin. (L and L') Pinopsin. (M and M') VA opsin. (N and N') Peropsin. (O and O') RGR opsin. For sense controls, only the result for Opsin 5 is shown (D and D'). CO, optic chiasm; LS, lateral septum; LV, lateral ventricle; PVO, paraventricular organ; TSM, septopallomesencephalic tract; 3V, third ventricle.

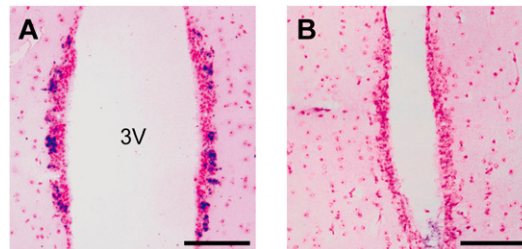


Fig. S2. No signal was observed using the DIG-labeled sense riboprobe. (A) Antisense probe. (B) Sense probe. (Scale bars: 100 μm .) 3V, third ventricle.

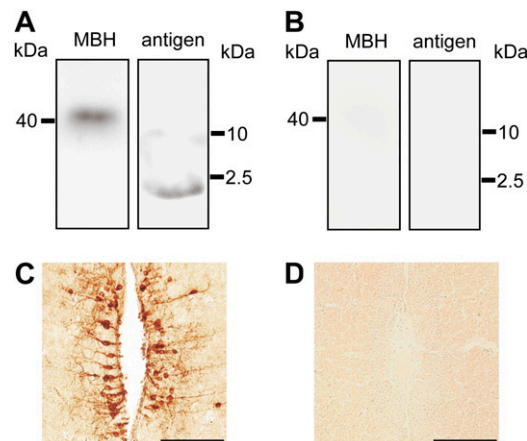


Fig. S3. Characterization of polyclonal anti-quail Opsin 5 antibodies. (A and B) Western blots of quail MBH extract (Left) and the synthetic Opsin 5 peptide used as antigen (Right). (C and D) Representative image of Opsin 5-like immunoreactivity in the PVO. Signals were eliminated when the anti-Opsin 5 antibodies were preincubated with an excess amount of the antigen peptide (B and D). (Scale bars: 100 μm , C and D.)

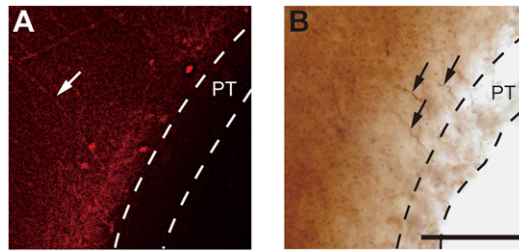


Fig. 54. Enlarged photomicrographs of the external zone of the median eminence. Arrows indicate labeled fibers. (A) Dil-labeled fibers. (B) Opsin 5-positive fibers. (Scale bars: 50 μm .) PT, pars tuberalis.

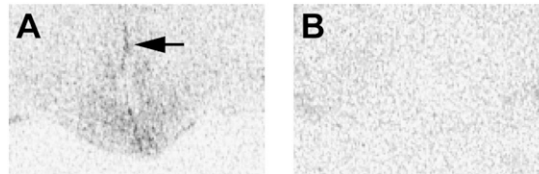


Fig. 55. Expression of Gq protein (*GNAQ*) gene in the PVO. (A) Antisense probe. (B) Sense probe.

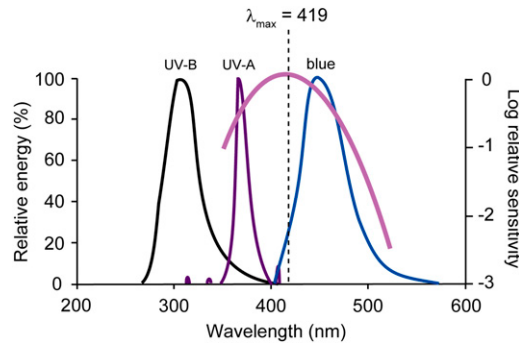


Fig. 56. Relative radiant outputs of low-pressure mercury vapor fluorescent lamps used in the present study (data provided by Nippon P.I. Co., Ltd.). The action spectrum of Opsin 5 has been overlaid on the data.

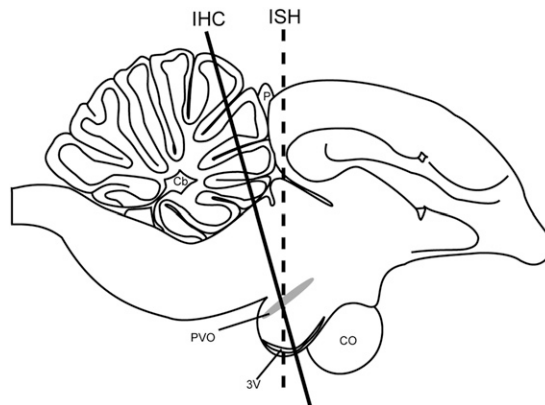


Fig. 57. Angles of PVO sections used for in situ hybridization (ISH) (Fig. 1B) and immunohistochemistry (IHC) (Fig. 1C and D). ISH was performed using coronal sections, whereas sections for IHC were made vertically to the PVO. Cb, cerebellum; CO, optic chiasm; P, pineal organ; PVO, paraventricular organ; 3V, third ventricle.

Other Supporting Information Files

[Table S1 \(XLS\)](#)