



**Extended Data Figure 9. Ejaculation induced by electrical currents through a rectum probe did not increase activity in *Pomc*<sup>+</sup> neurons, and brain regions that provide inputs to ARC *Pomc*<sup>+</sup> neurons.**

**a.** Schematics of the experimental setup.

**b.** Histological examination of sperm in the ejaculates triggered with electrical currents. The right image zooms in on the white box from the left image. Scale bar, 100  $\mu$ m for the left image and 10  $\mu$ m for the right image.

**c.** Fiber photometry recordings of *Pomc* GCaMP6s signals show no changes in fluorescent activity during electrically induced ejaculation (time "0").  $n = 2$ .

**d.** Schematics of the viral strategy using pseudo-rabies virus-mediated retrograde tracing from ARC *Pomc*<sup>+</sup> neurons.

**e.-f.** Representative images showing starter cells in ARC (**e**, scale bar, 50  $\mu$ m) and labeled upstream neurons in the indicated brain regions (**f**, scale bar, 100  $\mu$ m).

**g.** Quantification of inputs from various inhibitory (blue) or excitatory (red) brain regions.  $n = 6$ .