



**Extended Data Figure 1. Increased IEG expression in POA neurons following ejaculation.**

**a.** Comparable quality of single-nucleus RNA-sequence data between cells from the intromission and ejaculation conditions, as demonstrated by similar number of detected genes (nFeature\_RNA), total detected molecules (nCount\_RNA), and similar percentage of mitochondria gene counts detected (percent\_mito).

**b.** Percentage of cells from the intromission (intro, blue) or the ejaculation (eja, red) conditions distributed across each POA neuron clusters.

**c.** Heatmap showing the percentage of POA neurons (represented by the size of the circles) and the relative expression levels of each IEG (depicted by the intensity of the circle's color) under the ejaculation (top) or intromission (bottom) condition. Many IEGs are upregulated in POA neurons after ejaculation.