SUPPLEMENTARY INFORMATION

A Cerebral Organoid Connectivity Apparatus to Model Neuronal Tract Circuitry

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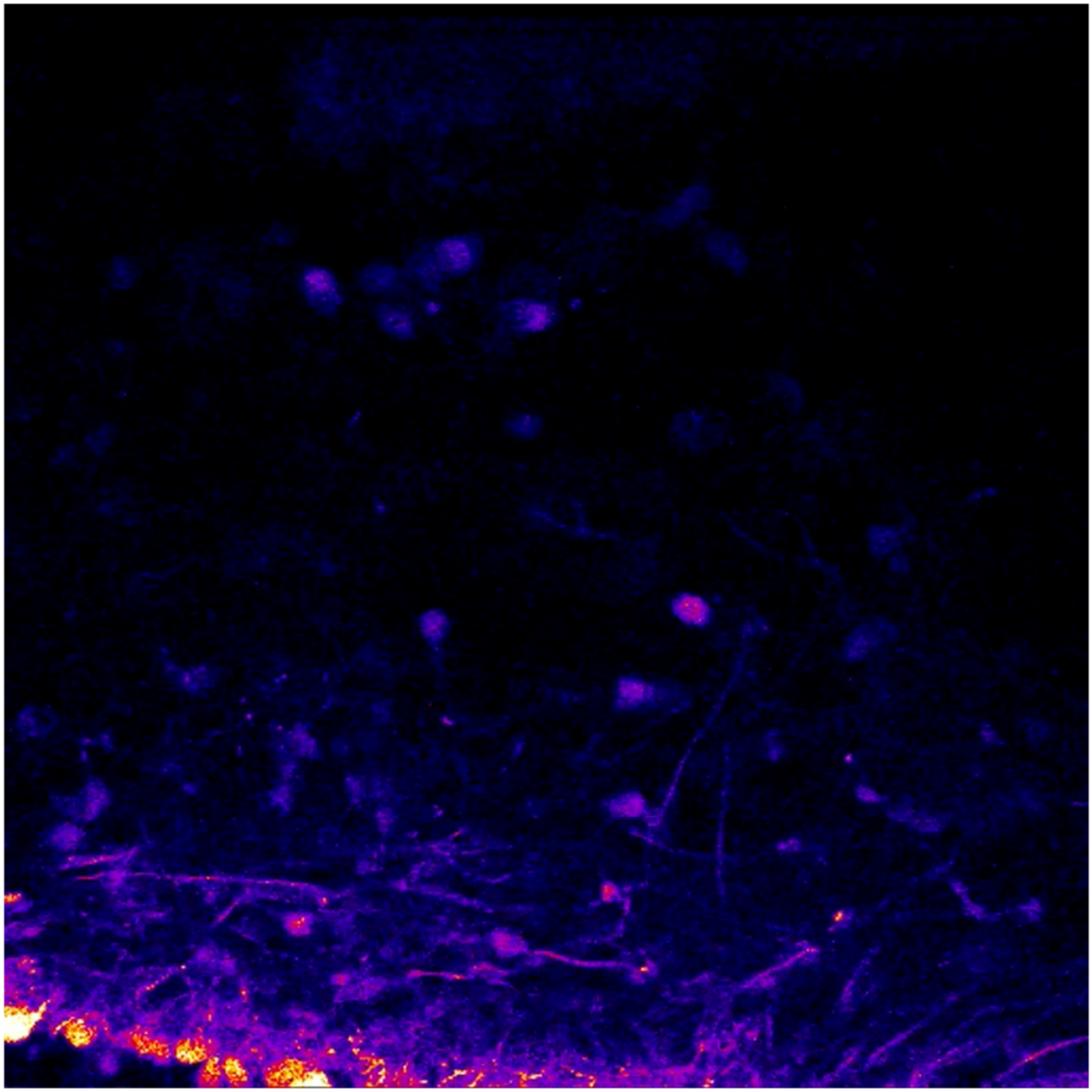
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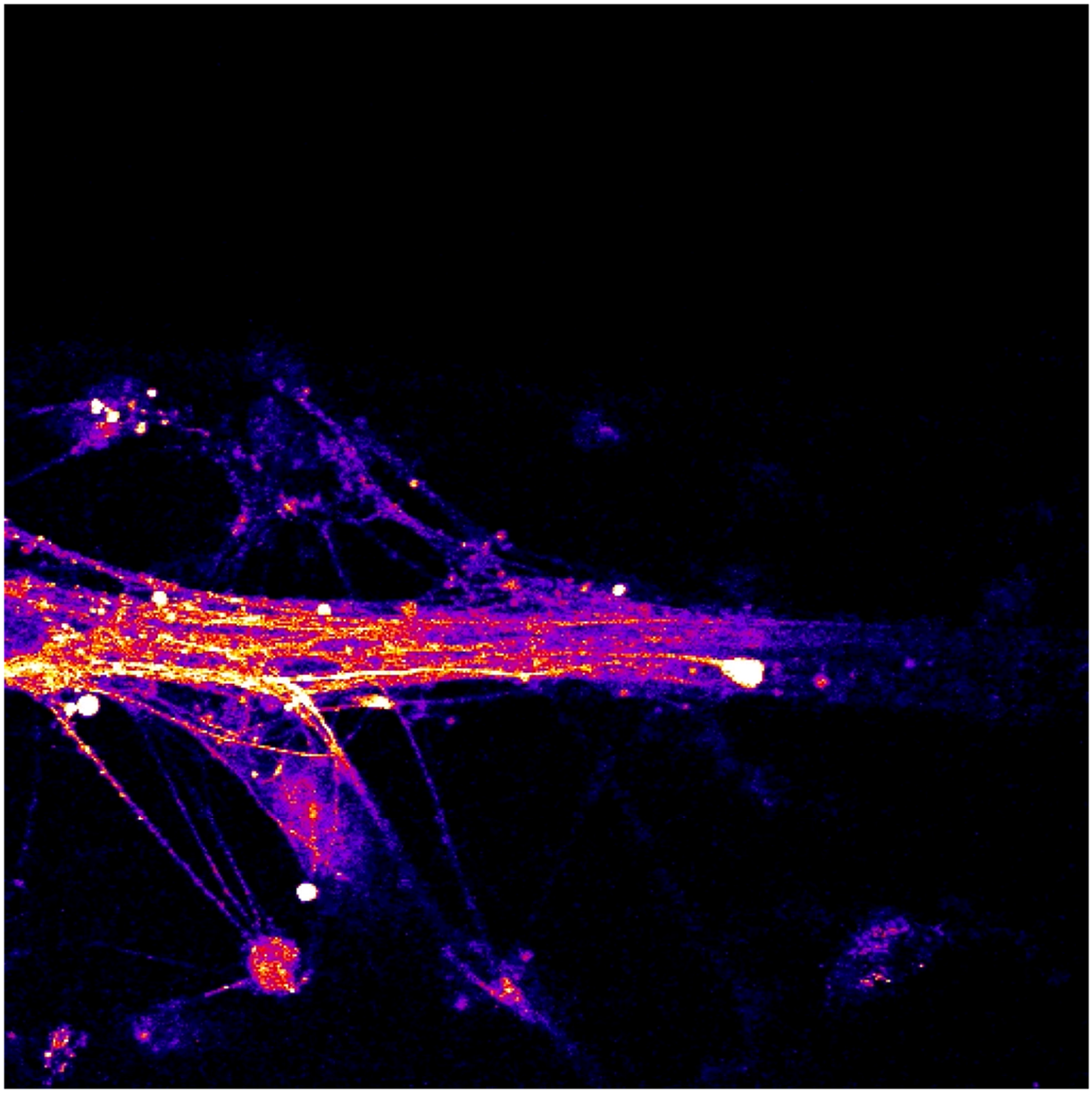
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Supplementary Videos

Video S1. Synchronized neural circuit activity within a CO cultured on compartmentalized spiked COCA for 6 weeks.
Video S2. Synchronized neural circuit activity along a connecting CO axonal tract on compartmentalized spiked COCA.



Video S1. Synchronized neural circuit activity within a CO cultured on compartmentalized spiked COCA for 6 weeks. During basal activity, neurons located within each CO side on the COCA demonstrated isolated spontaneous activity, indicating synaptic neurotransmission mediated by local axonal connections. After recording baseline activity, potassium chloride (80 mM, KCl) was added to depolarize all neuronal cells and verify cell viability. KCl addition resulted in a substantial increase in fluorescent intensity across surrounding neurons.



Video S2. Synchronized neural circuit activity along a connecting CO axonal tract on compartmentalized spiked COCA. Neuronal axons located on the connecting channel between COCA compartments demonstrated isolated spontaneous activity during baseline recordings. Potassium chloride (80 mM, KCl) addition elicited a substantial increase in fluorescent intensity in individual axons, indicating functional intracellular signaling along the axonal tract bridging the CO pair.