

nVue™ System

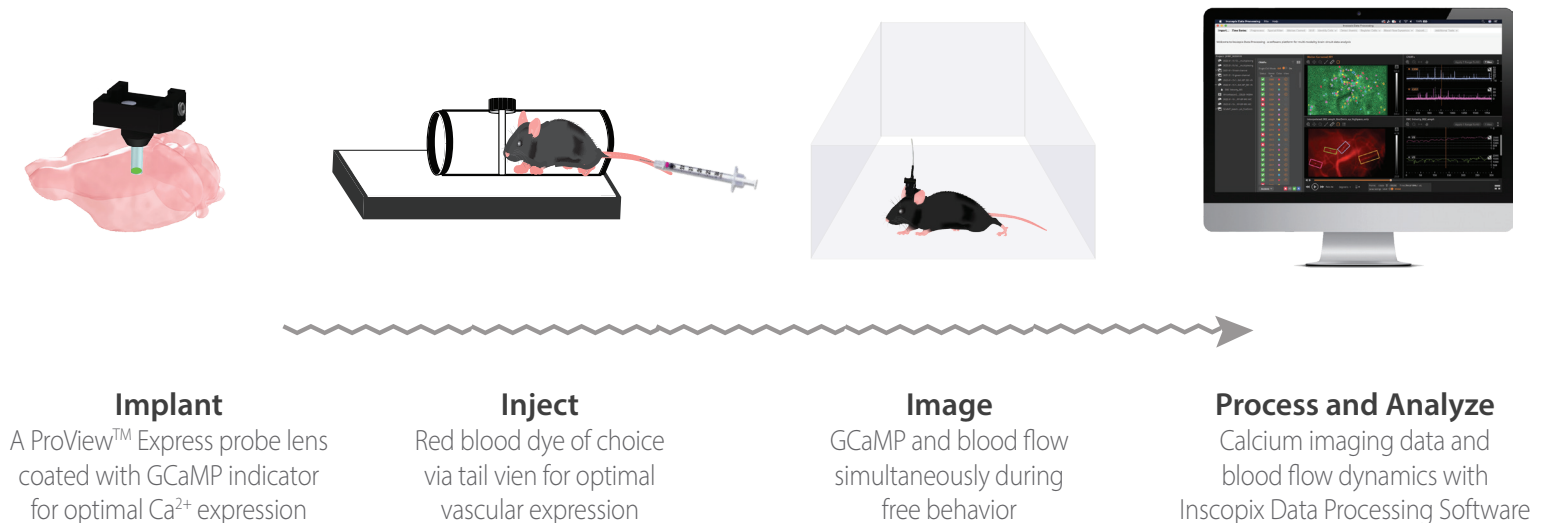
Simultaneous blood flow activity & neural dynamics during free behavior

Key benefits

- Record neuronal activity and blood flow simultaneously over months during free behavior
- Measure vascular changes, red blood cell velocity and extract neuronal activity
- Investigate blood flow dynamics in cortical and deep brain regions

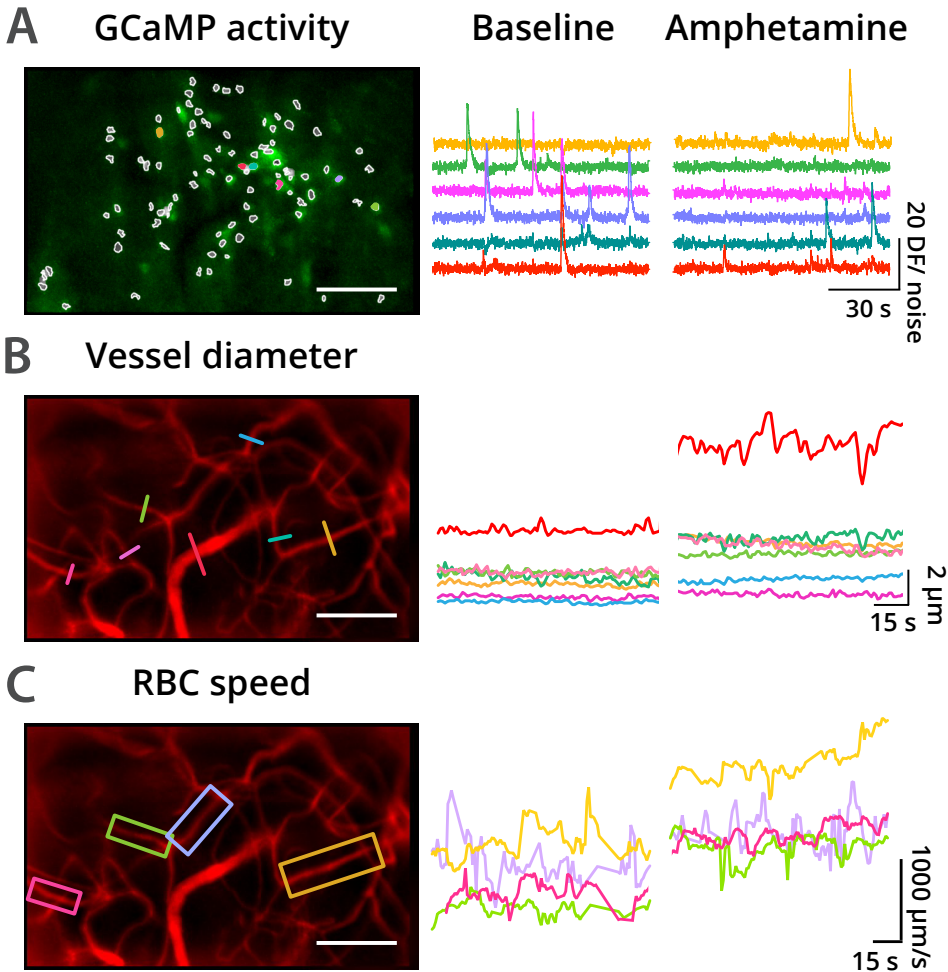
The Inscopix nVue system enables simultaneous dual color imaging of neural calcium activity and blood flow dynamics

Our dual color miniscope enables data collection of calcium (Ca^{2+}) and blood flow signals in freely-behaving animals, empowering scientists with greater neurovascular insights into function and behavior. The application shown here is one of several approaches to express, visualize, record, and analyze two dynamic signals within the same field of view.



Record neural activity and blood flow dynamics in a single session with the nVue system

The nVue system provides a deeper level of insight into how neuronal activity and blood flow are linked during free behavior across states. We labeled medium spiny neurons (MSNs) in the mouse dorsal striatum using a ProView Express Probe coated with CaMKII-GCaMP6 and labeled the blood plasma with Texas Red-dextran. Both GCaMP cellular activity and blood flow were imaged simultaneously during free behavior with the nVue system.

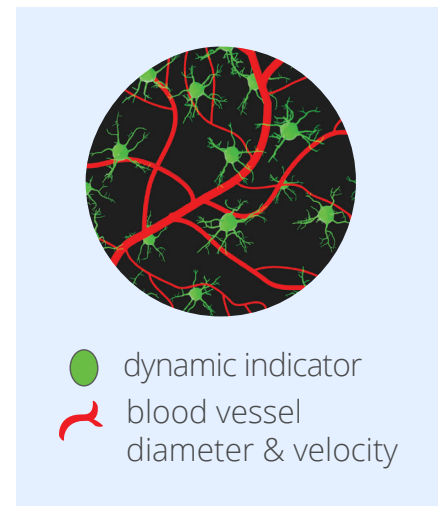


Simultaneous imaging of GCaMP and blood flow activity using the nVue system. Texas red-dextran injection in mice implanted with ProView Express probes enables simultaneous imaging of neural activity (green) and blood flow (red). Example data from an animal expressing GCaMP in MSNs. Recordings were made in baseline and amphetamine conditions. **A.** Cell contours along with traces of highlighted neurons. Cells were identified using Inscopix CNMFe in Inscopix Data Processing Software (IDPS). Fluorescence traces of highlighted neurons shown for both baseline and amphetamine conditions. **B.** ROIs for vessel diameter overlaid on red channel maximum projection image of spatially bandpassed movie. Vessel diameter computed using the Blood Flow function in IDPS. Time course of vessel diameter changes shows dilation in vessels post-amphetamine administration. **C.** ROIs for red blood cell (RBC) speed overlaid on red channel maximum projection image of spatially bandpassed movie. RBC speed computed using the Blood Flow function in IDPS. Time course of RBC speed changes in highlighted vessels shows an amphetamine induced increase in RBC speed. Scale bar= 100 μ m.

Inscopix nVue System



Application



Our Complete Solution

- Biological reagents & accessories
- Cutting-edge instrumentation
- Powerful data processing
- Expert scientific support