

Supplemental Figure 1

Axon varicosities are hot spots of action potential-evoked Ca^{2+} entry

(**A₁**) Two-photon image of an L5 pyramidal cell filled with Alexa 594. Small caliber lateral axons appear dim compared to dendrites and the primary axon. In this cell the primary axon was severed during the slice cutting procedure ending in a bleb and is marked with a chevron. An enlarged view of a lateral axon branch, including a varicosity, is shown in the inset. White line indicates position of line scan used to measure Ca^{2+} transients. (**A₂**) Action potential-evoked Ca^{2+} transients were recorded in primary and lateral axons by including the Ca^{2+} indicator Fluo5F (200 μM) in the patch pipette. The large action potential-evoked Ca^{2+} transient recorded in the varicosity indicates that it was a hotspot of VSCC entry. (**A₃**) Hot spots of Ca^{2+} entry were not apparent in the primary axon. (**B**) Action potential-evoked Ca^{2+} transients in lateral axon varicosities did not depend on location.

