



**Supplemental Figure 1. Philanthotoxin-433 confirms that presynaptic kainate receptors are calcium permeable at Schaffer collateral synapses onto SOM interneurons.**

**A**, Example of EPSCs recorded from an s. radiatum EGFP-expressing SOM interneuron before and during application of a calcium-permeable AMPA and kainate receptor antagonist, Philanthotoxin-433 (5  $\mu$ M). Scale bars: 20 ms, 75 pA. **B**, Group results for paired-pulse ratios versus interval from EGFP-expressing SOM interneurons before (solid black circles) and during application of Philanthotoxin-433 (solid red circles) (n=6). Philanthotoxin-433 caused a significant decrease in paired-pulse facilitation for intervals from 20 to 80 ms. The magnitude of the effect of Philanthotoxin-433 was variable from cell to cell, which may be due to instability of the toxin. The average magnitude of the reduction was slightly smaller with Philanthotoxin-433 ( $19.7 \pm 10.0\%$ ) than with NASPM ( $31.0 \pm 2.9\%$ ), most likely due to an incomplete block by Philanthotoxin-433 in some cells, although the difference was not statistically significant ( $p > 0.12$ ). **C**, Average amplitude of first EPSC for experiments in B was not reduced by Philanthotoxin-433 ( $p > 0.3$ ).  
\*=significant,  $p < 0.05$ .