Supplementary Figure 1
Lien et al., 2006

**a**  Presynaptic release

**b**  Postsynaptic response

**c**  NMDAR-mediated current

**d**  Cumulative charge (fQ)

- Cumulative charge (fQ)
  - Suprathreshold
  - Subthreshold

**Notes:**
- [Glutamate] (mM)
- Time (ms)
Supplementary Fig. 1 Legend

Simulated NMDAR-mediated currents associated with bursting spikes and subthreshold responses.

(a) We assume that the light stimulus induces the release of glutamate by triggering presynaptic bursts (10 pulses with 1-ms duration at 100 Hz), resulting in brief changes of glutamate concentration from 25 µM to 1 mM in the synaptic cleft. (b) The measured supra- and subthreshold membrane depolarization associated with the “off-response” of the cells shown Fig. 1b. (c) Ten consecutive traces of simulated NMDAR-mediated currents triggered by glutamate (shown in a) during supra- and subthreshold depolarizations are superimposed, respectively. The red and blue curves are averaged traces. (d) Cumulative charges of NMDAR-mediated currents, activated during supra- and subthreshold depolarization associated with the off-responses triggered by 10 repeated light stimuli. Scales: 20 mV, 0.4 pA.