

Additional File 1. Average (mean $\pm$ SEM in nm) thickness of PSD from excitatory synapses in stratum radiatum of the CA1 region of hippocampal slice cultures.

exp	control	30'' K ⁺	1' K ⁺	2' K ⁺	3' K ⁺	K ⁺ + 1' recovery	K ⁺ + 5' recovery	K ⁺ + 10' recovery
1	38.1 $\pm$ 1.1 (27) [26-48]	48.1 $\pm$ 1.3 (42) [31-68]		70.2 $\pm$ 2.4 (45) [38-99]				
2	39.6 $\pm$ 1.2 (28) [30-51]				70.0 $\pm$ 2.4 (38) [42-94]		54.0 $\pm$ 2.5 (47) [28-115]	
3	41.9 $\pm$ 1.1 (45) [30-61]				77.5 $\pm$ 1.6 (27) [58-116]			41.2 $\pm$ 0.9 (35) [27-54]
4	42.0 $\pm$ 1.3 (40) [24-61]		54.8 $\pm$ 1.6 (46) [30-76]			48.0 $\pm$ 1.5 (48) [27-74]	44.8 $\pm$ 1.5 (51) [22-81]	
Mean$\pm$ SEM	40.4 $\pm$ 0.9	51.5 $\pm$ 3.4		72.6 $\pm$ 2.5		47.0 $\pm$ 2.7		

	control	30'' NMDA	1' NMDA	2' NMDA
5	34.7 $\pm$ 0.8 (51) [20-47]	47.3 $\pm$ 1.4 (35) [34-64]	55.2 $\pm$ 1.4 (46) [39-81]	60.9 $\pm$ 1.8 (46) [44-96]
6	36.5 $\pm$ 0.9 (38) [27-47]	49.1 $\pm$ 1.2 (42) [38-68]	53.1 $\pm$ 1.9 (36) [32-85]	64.0 $\pm$ 2.1 (34) [46-95]
Mean$\pm$ SEM	35.6 $\pm$ 0.9	48.2 $\pm$ 0.9	54.2 $\pm$ 1.1	62.5 $\pm$ 1.2

(n) = number of synaptic profiles measured.

[range] = minimum – maximum values.

ANOVA with Tukey's pairs comparison:

Exp 1: control vs. 30'' K⁺ (P<0.005); cont vs. 2' K⁺ (P<0.0001); 30'' vs. 2' K⁺ (P<0.0001).

Exp 2: P<0.0001 for all 3 pairs of comparison.

Exp 3: 3' K⁺ highly significant (P<0.0001) from control and 3' K⁺ + 10' recovery.

Exp 4: control vs. 1'K⁺ (P<0.0001); cont. vs. 1'K⁺ + 1' recovery (P<0.05); 1'K⁺ vs. 1'K⁺ + 1' recovery (P<0.01); 1'K⁺ vs. 1'K⁺ + 5'recovery (P<0.0001).

Exp 5: control highly significant (P<0.0001) from all 3 NMDA samples. 30'' NMDA vs. 1' NMDA (P<0.005); 30'' NMDA vs. 2' NMDA (P<0.0001); 1' NMDA vs. 2' NMDA (P<0.05).

Exp 6: except for no significance between 30'' and 1' NMDA, all other pairs-comparison highly significant (P<0.0001).