Supplemental Material

Supplemental Figure 1. Specificity of Arc antibodies.

(A-B) Arc protein localization was assessed by immunohistochemistry using the anti-Arc antibody from BD Biosciences on the ipsilateral (A) and contralateral (B) side of a rat brain fixed 2 hours post-HFS. Inset in B shows staining of granule cell body and dendritic arbor.

(C) Western blot showing detection of Arc protein by the BD Biosciences antibody in a HEK293FT lysate after transfection with pcDNA3.1/Arc-V5-His (+) or with the control plasmid (-).

(D-E) Arc protein localization was assessed by immunohistochemistry using the anti-Arc antibody from Santa Cruz (H300) on the ipsilateral (D) and contralateral (E) side of a rat brain fixed 2 hours post-HFS.

(F) Western blot showing detection of Arc protein by the Santa Cruz antibody in a HEK293FT lysate after transfection with pcDNA3.1/Arc-V5-His (+) or with the control plasmid (-).

Supplemental Figure 2. Time course of phallodin-FITC staining during LTP in the rat dentate gyrus. CON= Unstimulated, contralateral dentate gyrus.

(A) Images show phalloidin staining at various time points (in minutes) after HFS of the medial perforant pathway. Arrows mark borders of phalloidin band in the middle molecular layer.

(B) Quantitative analysis of phalloidin staining in representative images. Fluorescence intensity of the phalloidin-FITC signal in the inner blade of the dentate gyrus was measured along the shortest line extending from the bottom of the granule cell layer to the hippocampal fissure. Fluorescence was normalized relative to values obtained in the center of the inner molecular layer. Values obtained at 3 sites along the dentate gyrus inner blade were averaged. The hatched lines in the figure demarcate the borders of the middle molecular layer.

Supplemental Figure 3. Effect of broad spectrum protein synthesis inhibitors on LTP maintenance.

(A) Systemic (i.p.) injection of cycloheximide (CHX; 25 mg/kg) 90 min prior to HFS resulted in LTP that decayed to baseline within 3-4 hours (n=3).

(B) Systemic injection of CHX 90 min post-HFS had no effect on LTP maintenance (n=4).

(C) Local infusion of CHX 90 min after baseline had no effect on LTP maintenance (n=4).

(D-E) Systemic injection of CHX or anisomycin (ANI; 100 mg/kg) 30 min after HFS had no effect on LTP maintenance (n=3 for each inhibitor).

(F) Injection of anisomycin 30 minutes post-HFS failed to block the increase in Arc protein immunostaining during LTP maintenance.