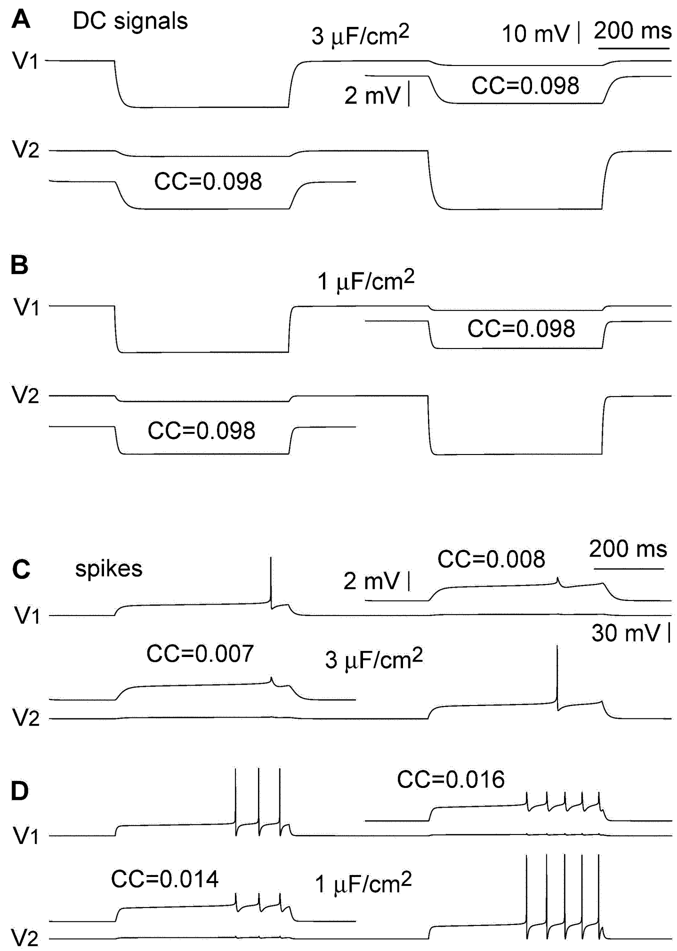

Supplemental Figure 1: Comparison of the responses of the model network when different specific capacitance values are implemented. Propagation of DC signals and spikes between model cells connected by a junctional conductance (0.5 nS) between the soma of cell 1, (V_1) and mid-dendrite of cell 2 (V_2). **(A)** Simulations were run using a high value (3 μF/cm^2) of specific capacitance in order to compensate for the simplified structure of the model cells. Traces illustrate the propagation of DC signals generated by the sequential injection of a current step (-100 pA, 500 ms) in cell 1 and cell2, respectively. Insets show the responses in the non injected cells at magnified scale. DC coupling coefficients (CC) are shown above the response in the non-injected cells. Notice that repeating the simulation using a more traditional value of specific capacitance (1 μF/cm^2) does not affect significantly the propagation of DC signals in the model, as shown in panel **(B)**. In contrast, propagation of spikes is depressed when using higher values of specific capacitance as shown by the comparison of the simulations run in panel **(C)** (3 μF/cm^2) and **(D)** (1 μF/cm^2). Spikes were evoked in the model cells by the sequential injection in cell 1 and 2 of a depolarizing current step (70 pA, 500 ms). The propagation obtained by implementing higher capacitance values are more conservative and result in a better match to experimentally determined values [see Price et al., 2005 (average DC CC reported was 0.094±0.056) and Zsiros and Maccaferri, 2005 (reported spike CC was 0.005±0.001)]