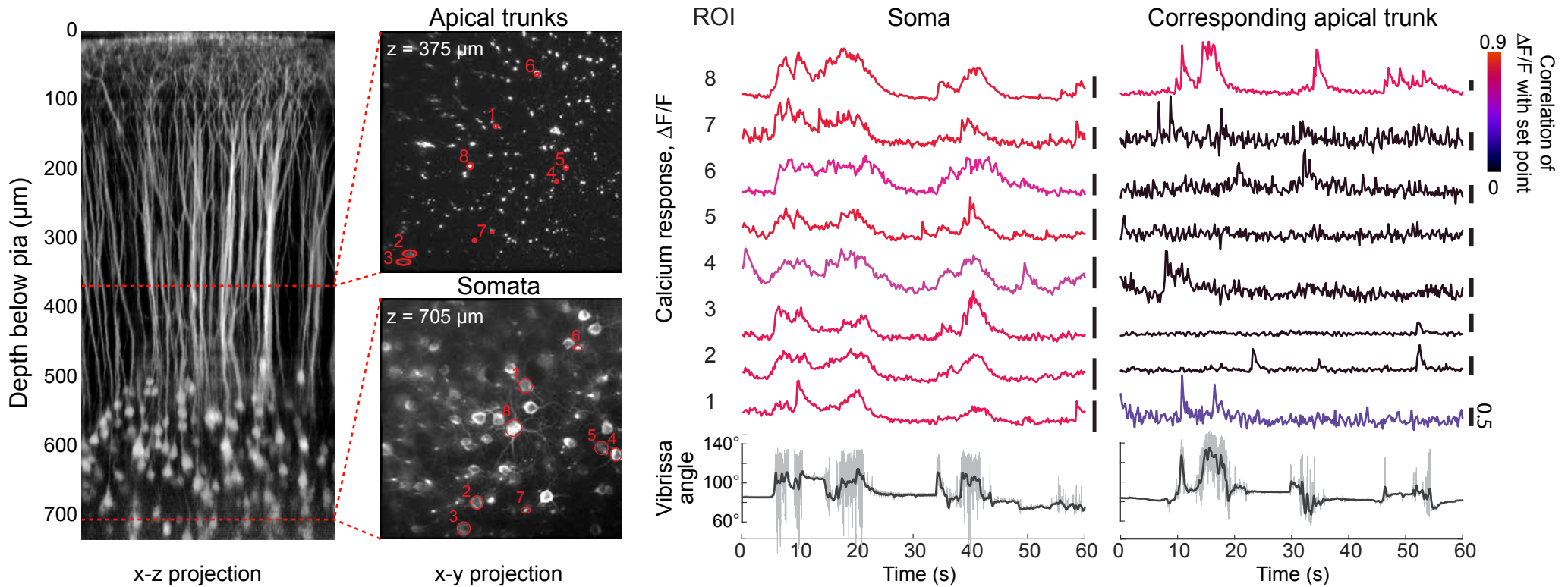
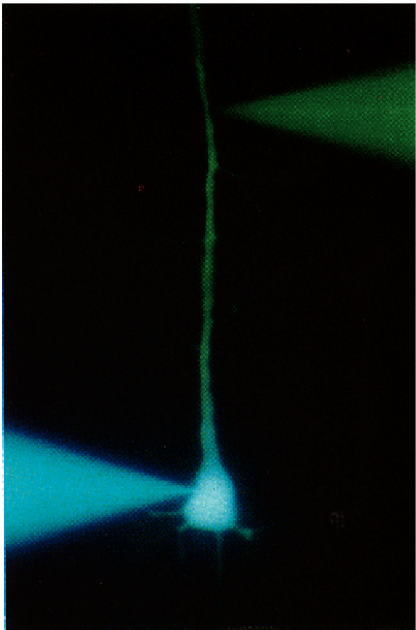
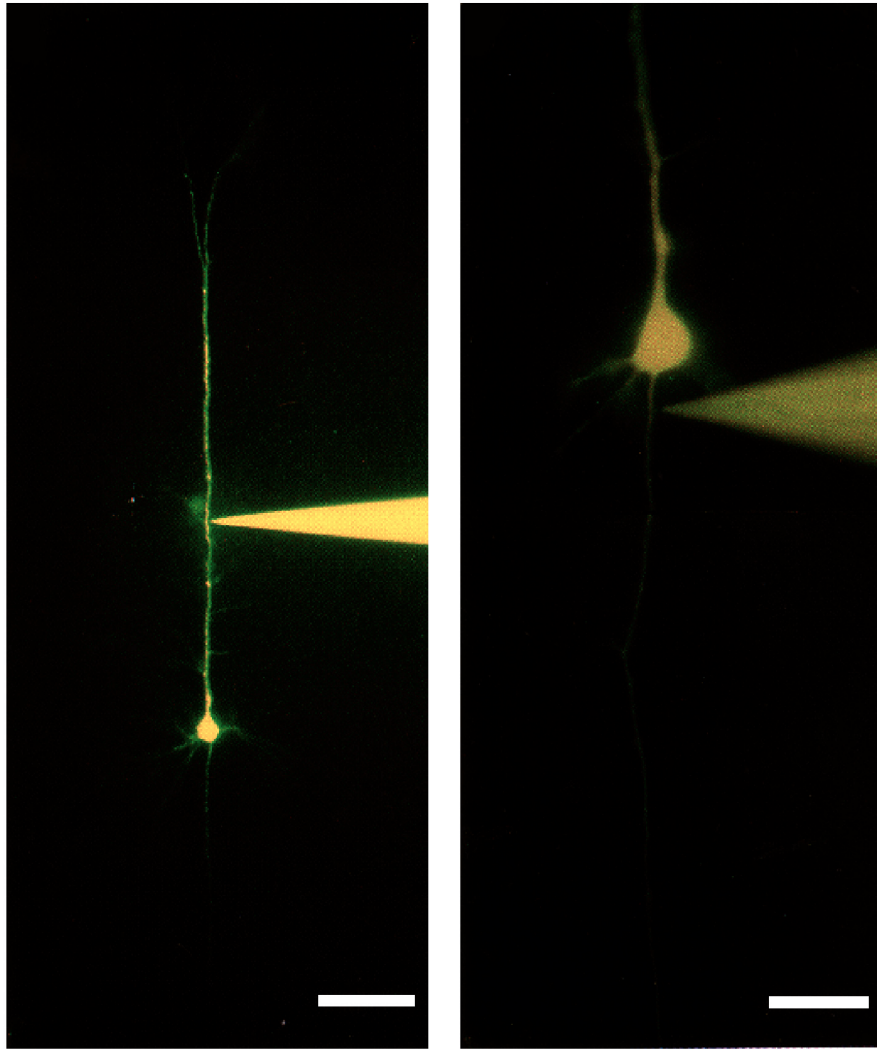


Differences in sensorimotor coding between the soma and apical trunk of layer Vb neurons in mouse vS1 cortex

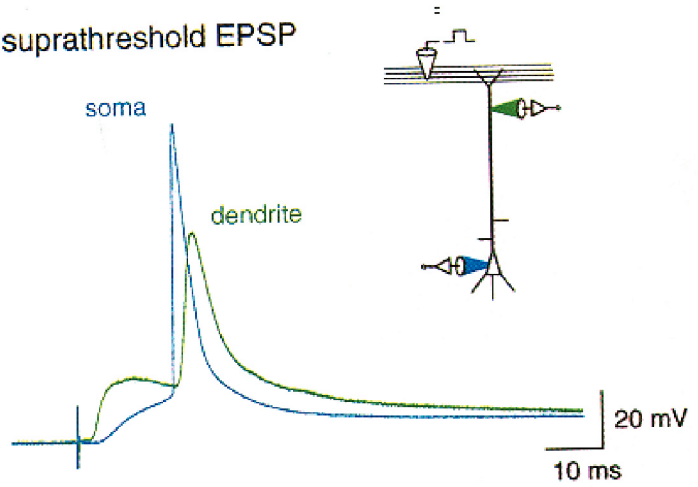


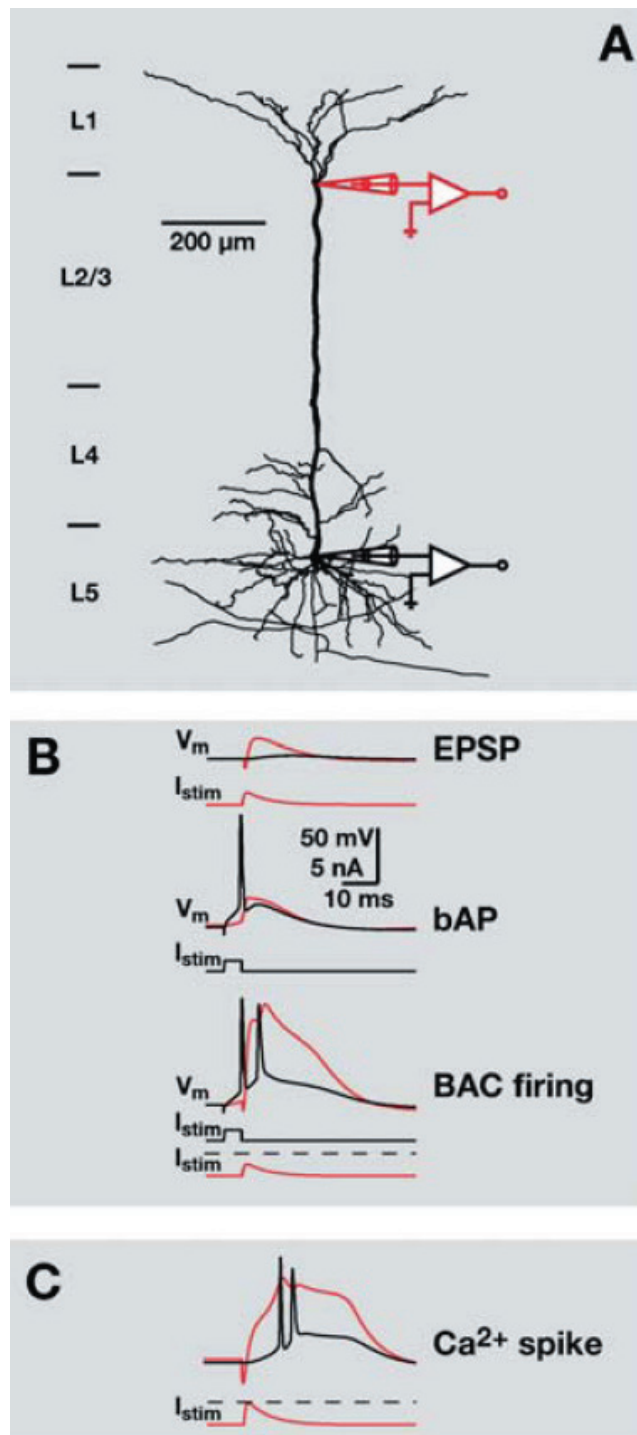


subthreshold EPSP

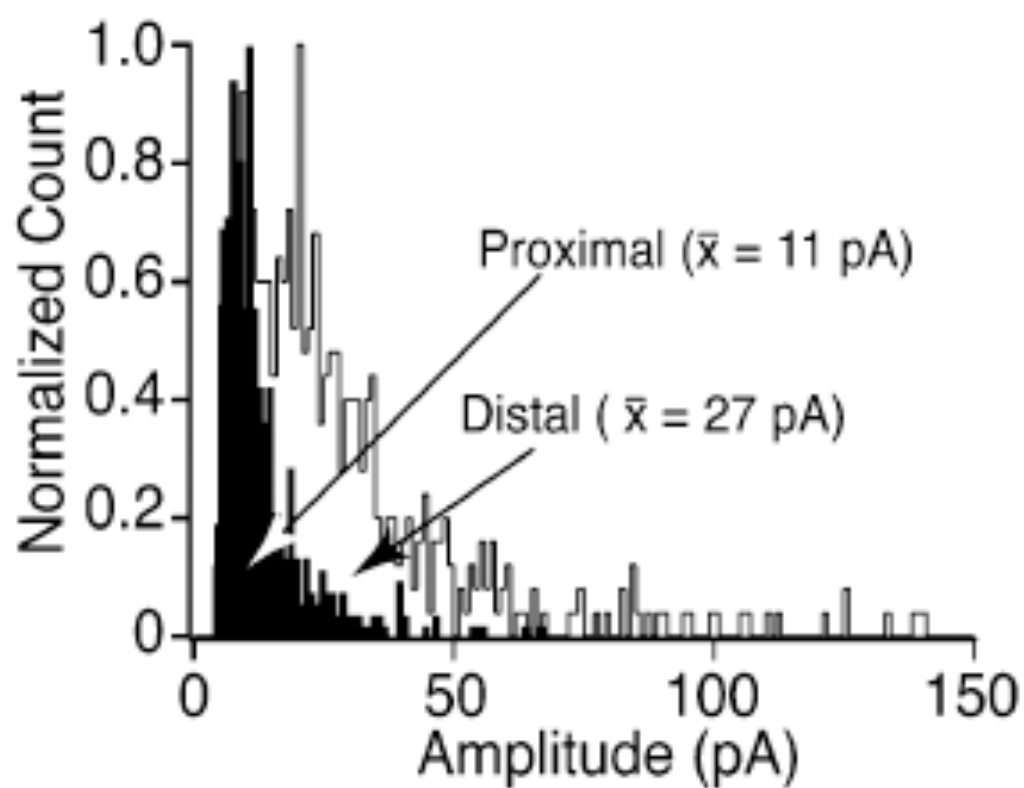
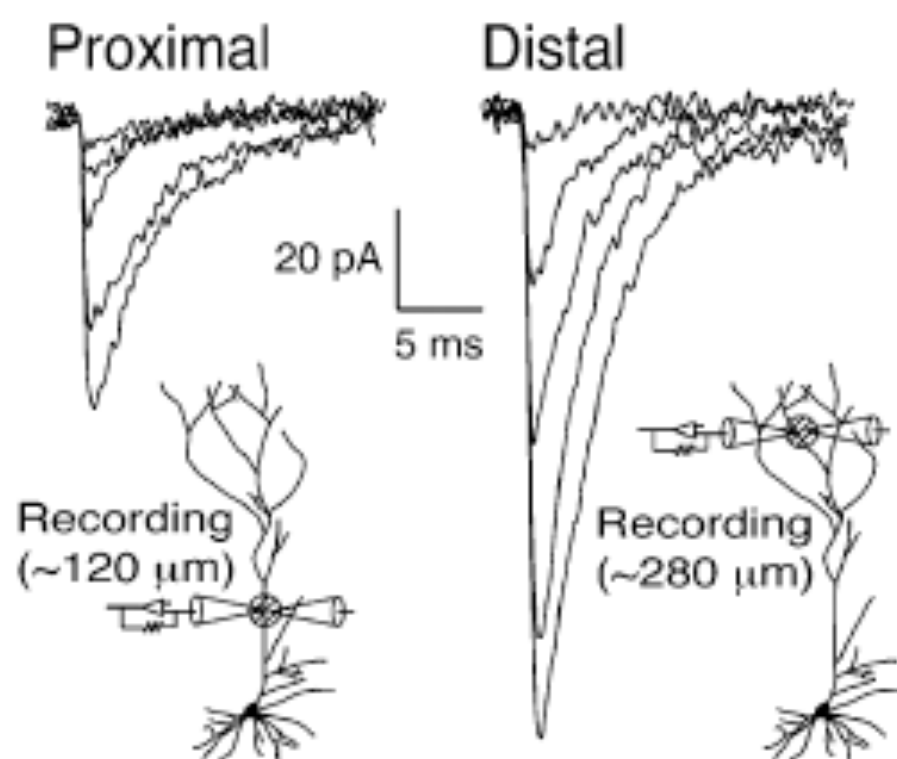


suprathreshold EPSP

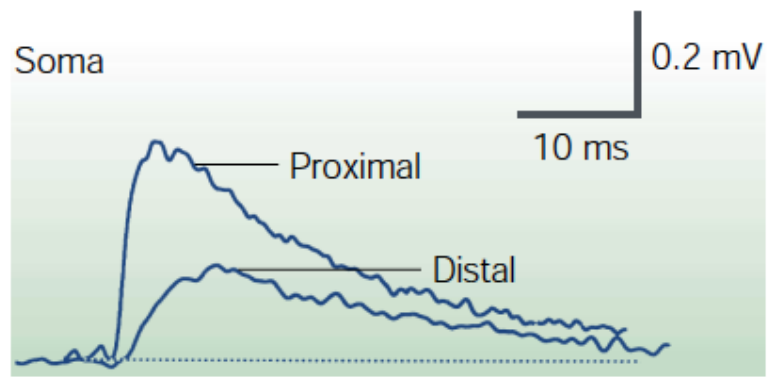
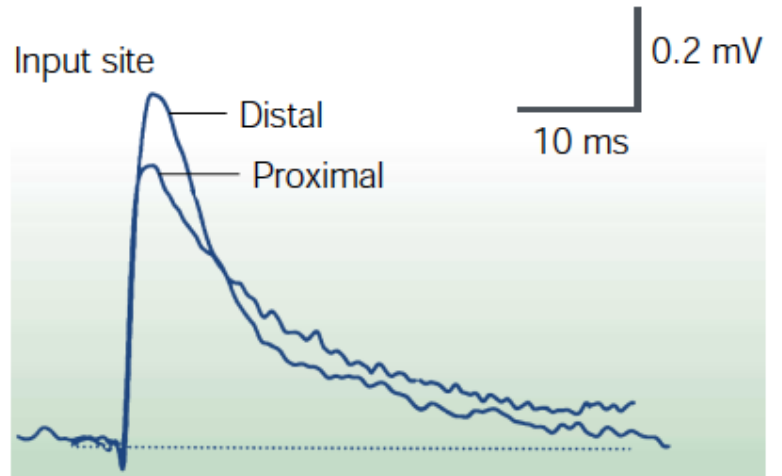
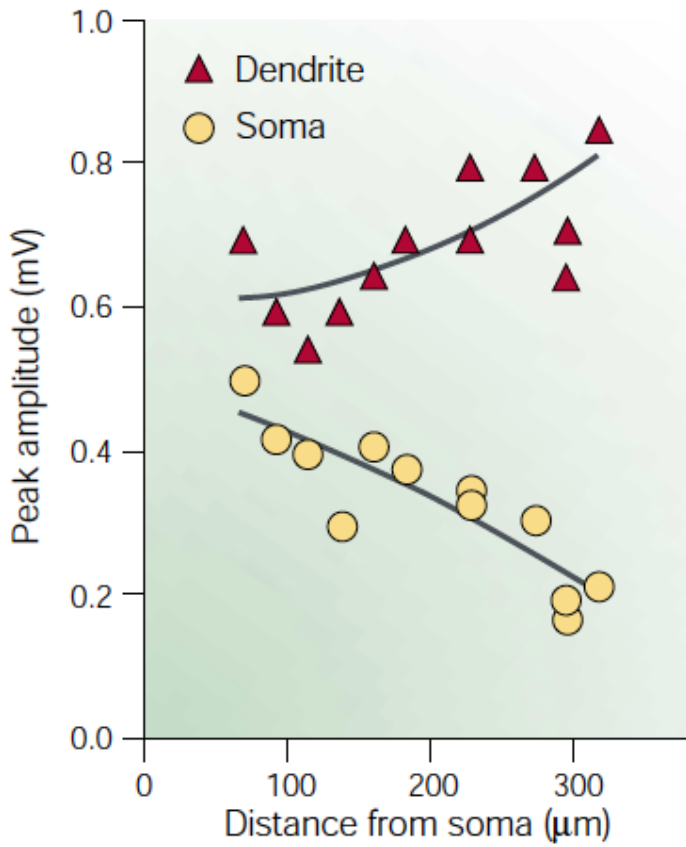




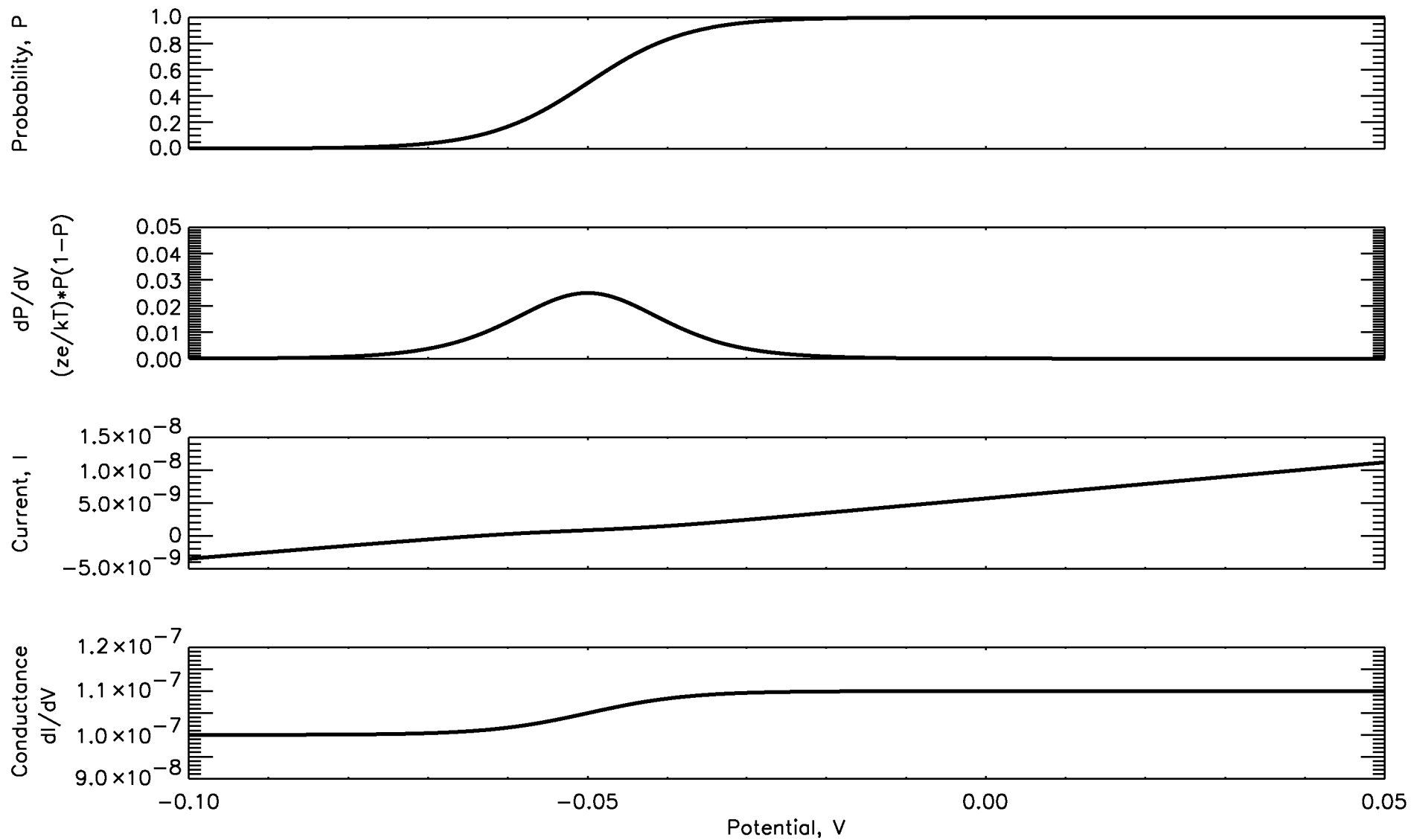
Coincidence detection across dendritic compartments. (A) Reconstruction of a layer 5 pyramidal neuron; the locations of recording pipettes (soma, black; dendrite, red) are depicted schematically. (B) Distal current injection of 1.1 nA in the shape of an EPSP (I_{stim} , red) evoked only weak somatic (black) depolarization (upper panel). Threshold current injection (5 ms) into the soma (black) produced an AP that propagated back into the apical dendritic arbor (backpropagating action potential, bAP, red trace, middle panel). Combination of somatic and dendritic current injection generates several somatic APs and a dendritic Ca^{2+} spike (backpropagating action potential-activated Ca^{2+} spike firing, BAC firing; lower panel). The dashed line indicates the current threshold for a dendritic Ca^{2+} spike alone. (C) A dendritic Ca^{2+} spike was evoked by 2 nA current injection into the apical dendrite alone. Thus, the bAP reduced the threshold for dendritic Ca^{2+} spike by 0.9 nA.

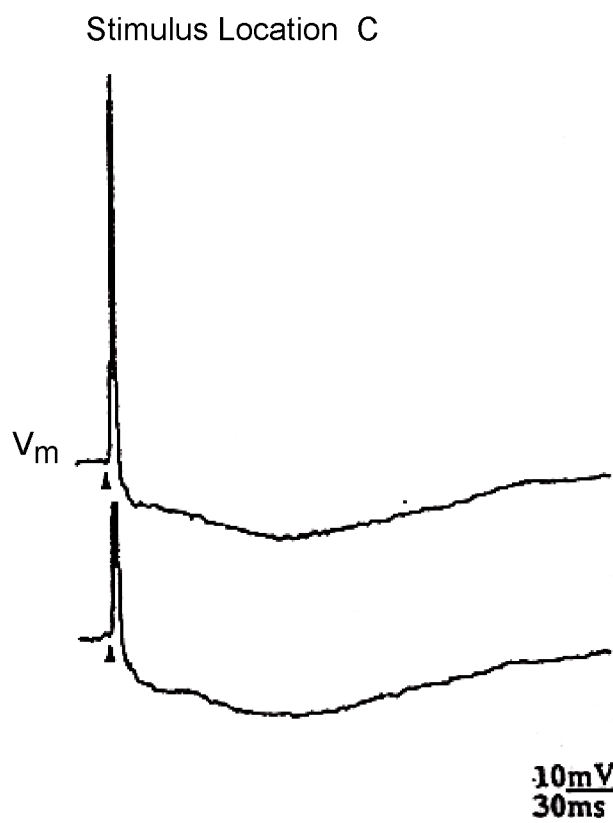
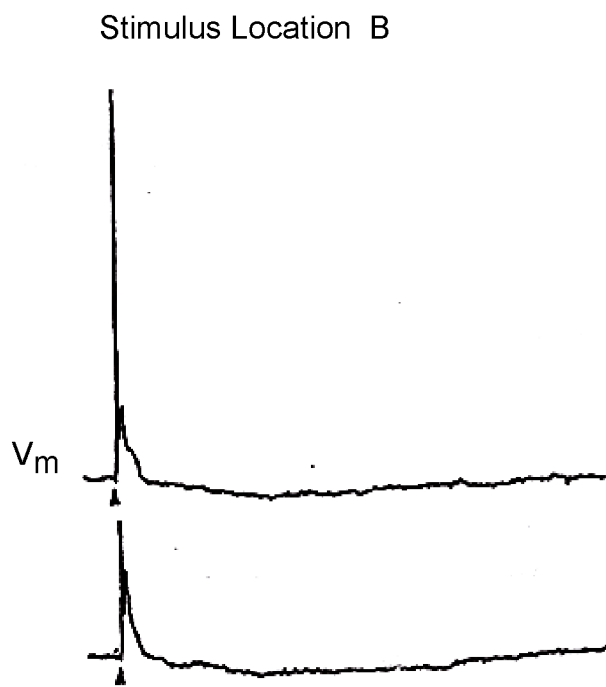
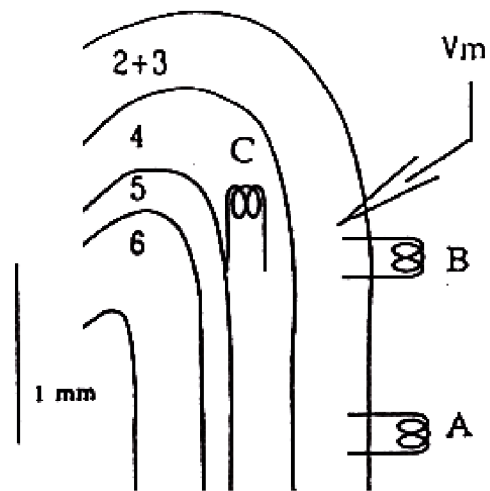
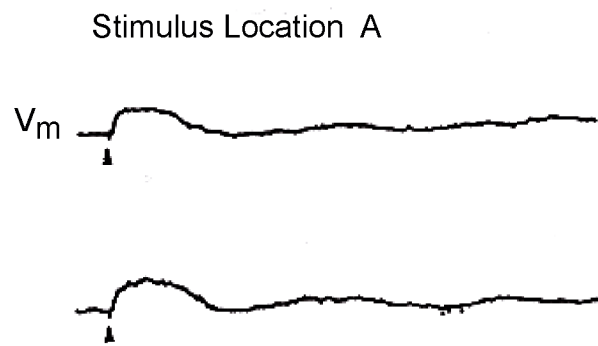


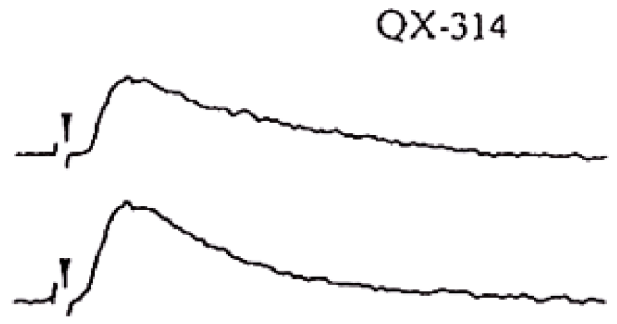
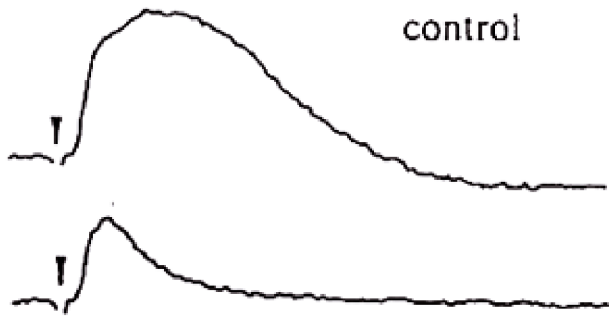
EPSP amplitude



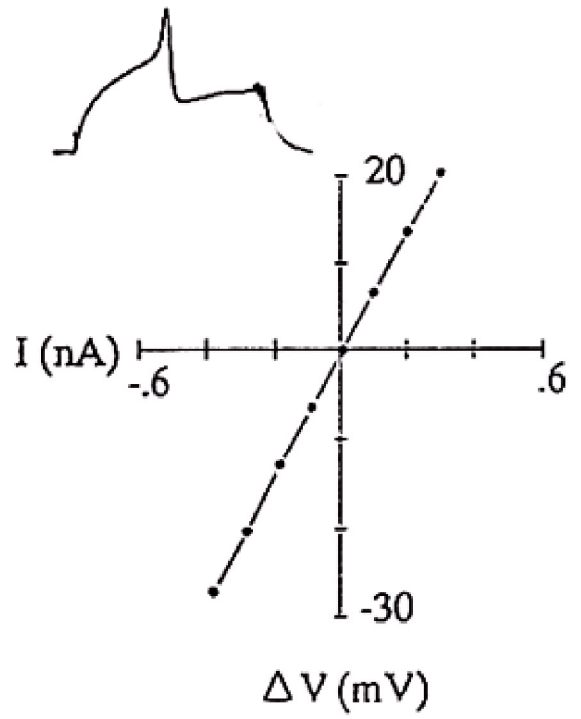
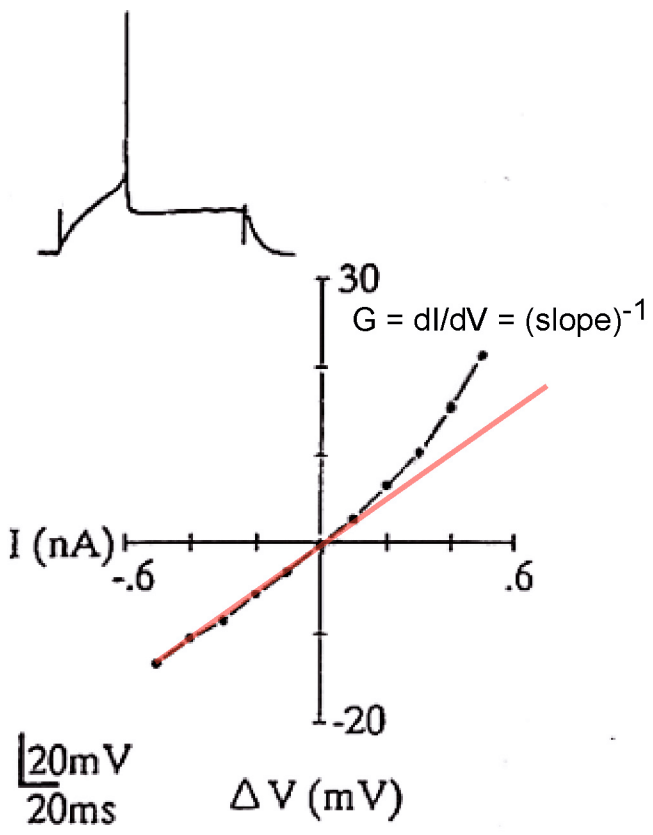
$G_L = 100$ nSiemens $G_{Na-P} = 10$ nSiemens

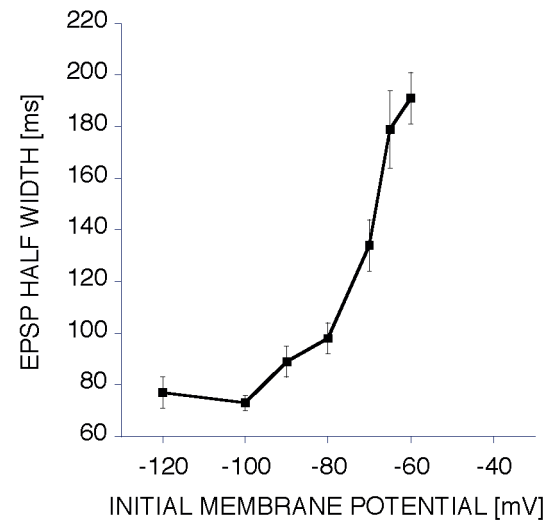
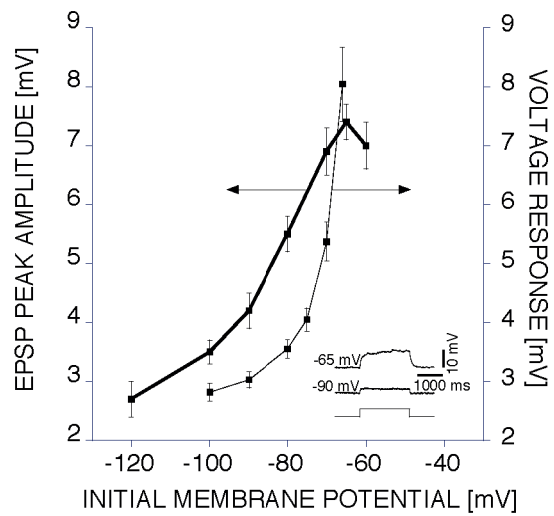
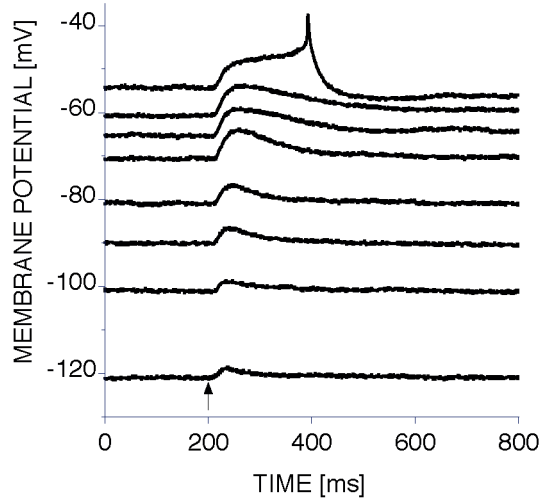


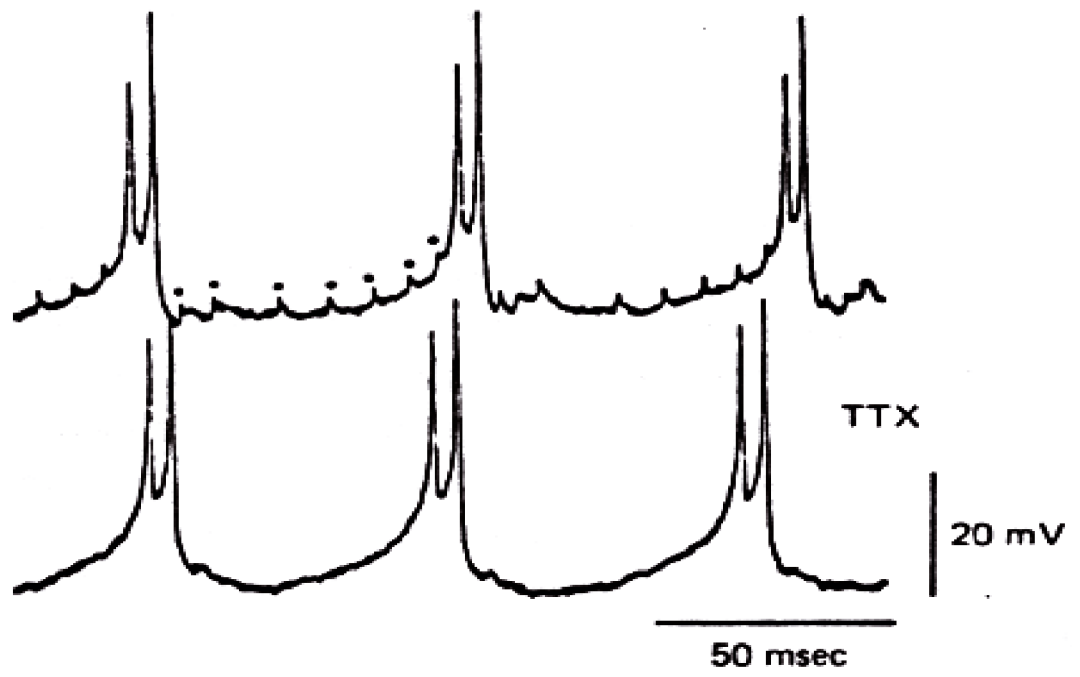
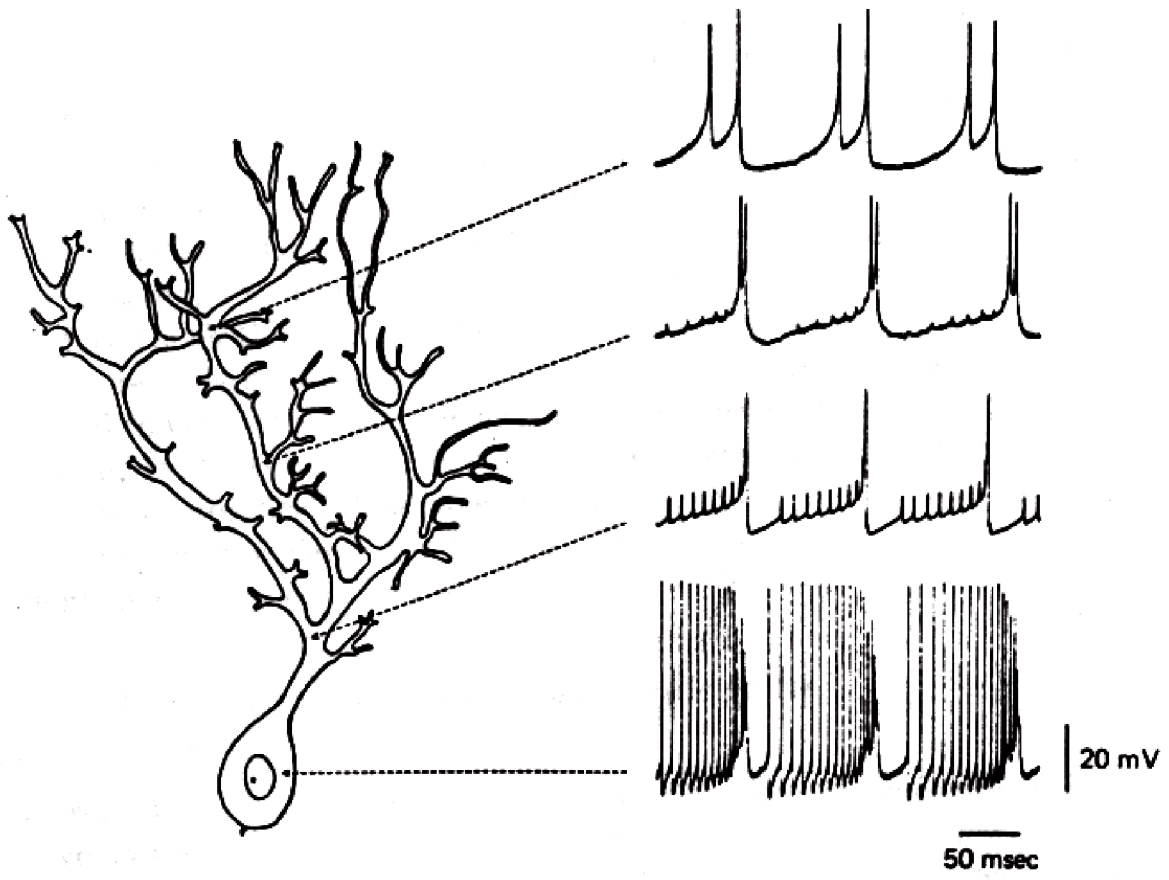


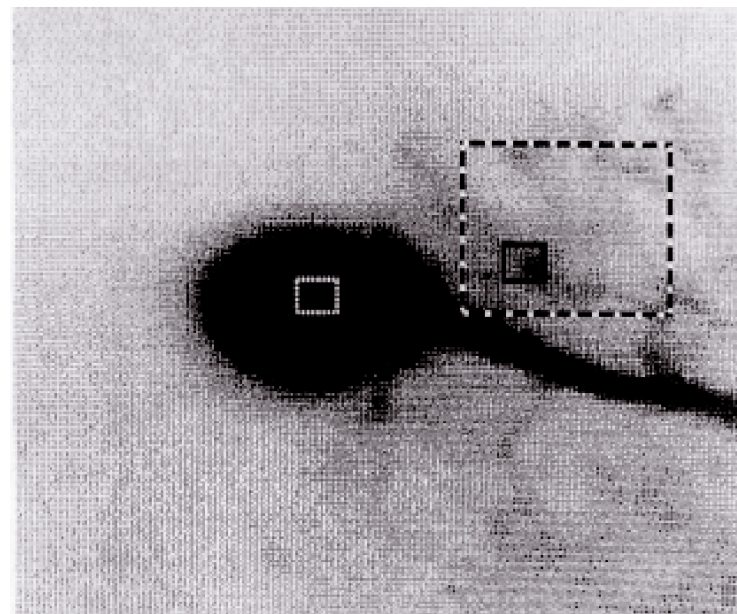
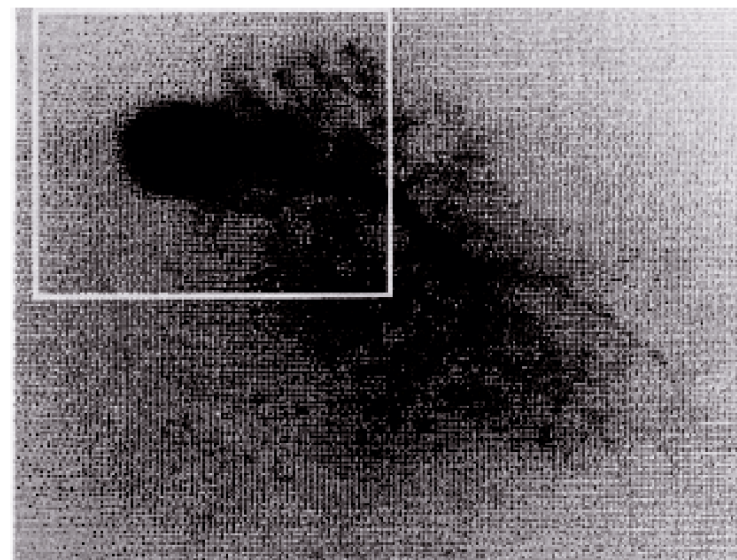
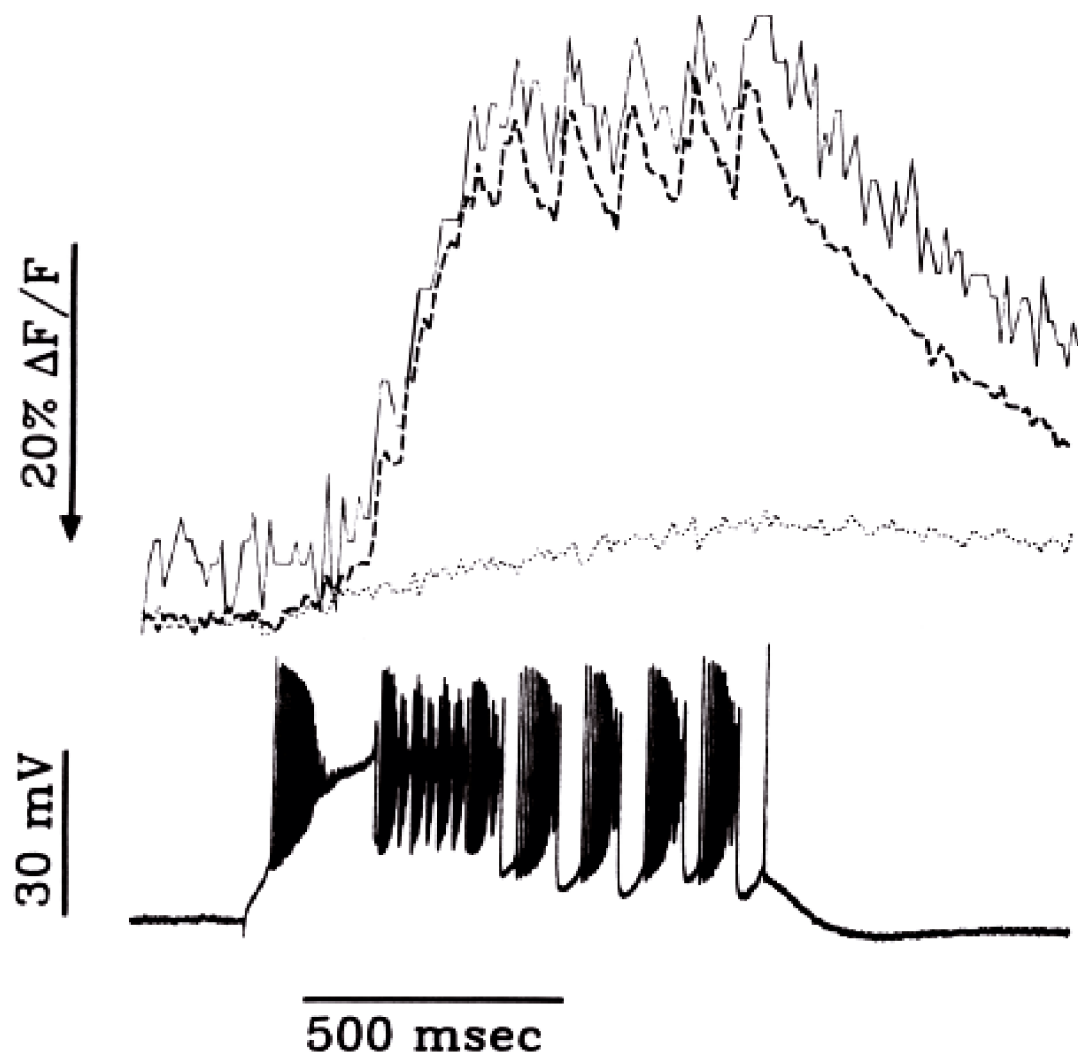


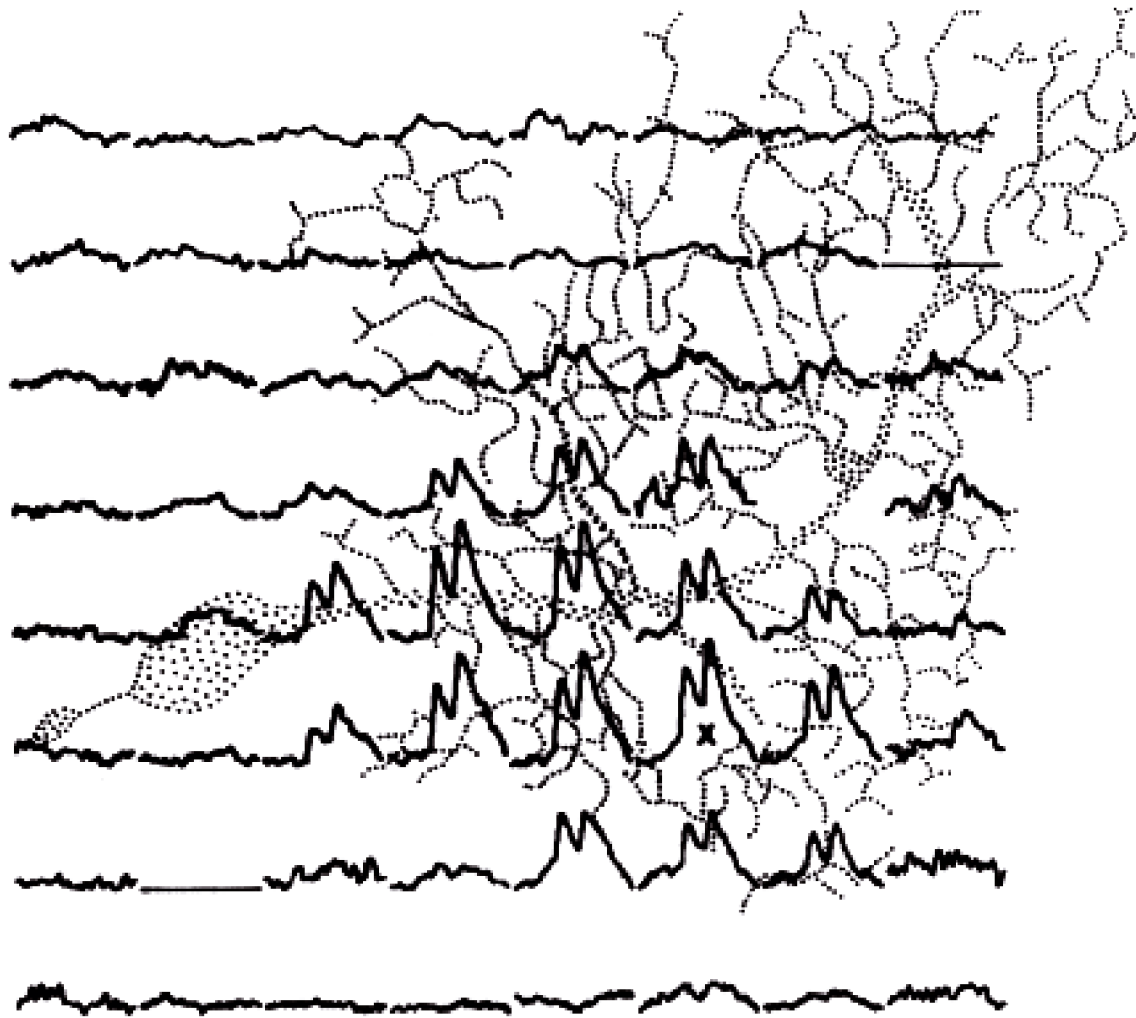
5 mV
20 ms



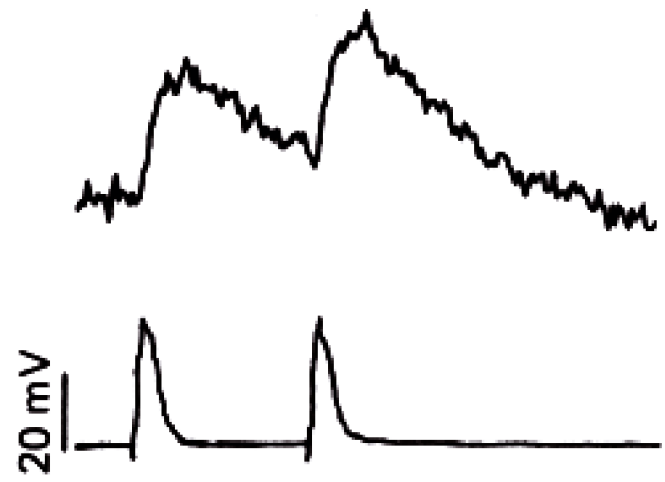
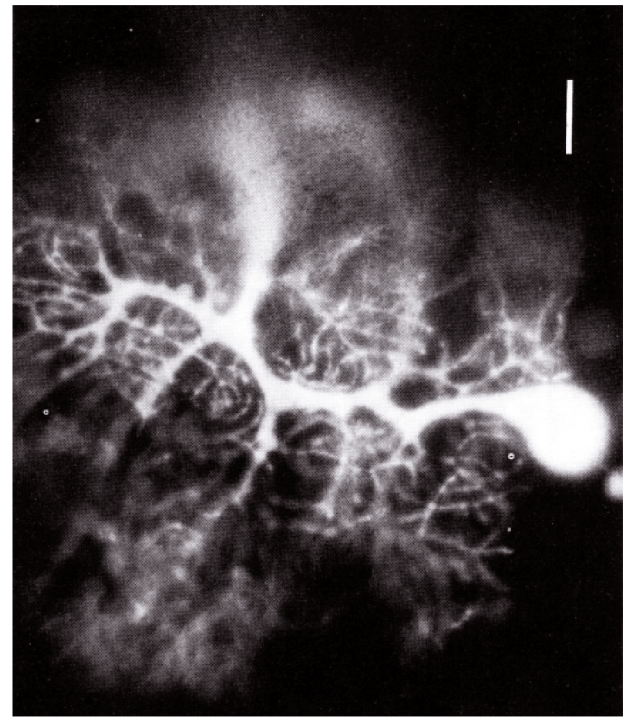








250 ms
31 μm



20 mV

50 ms