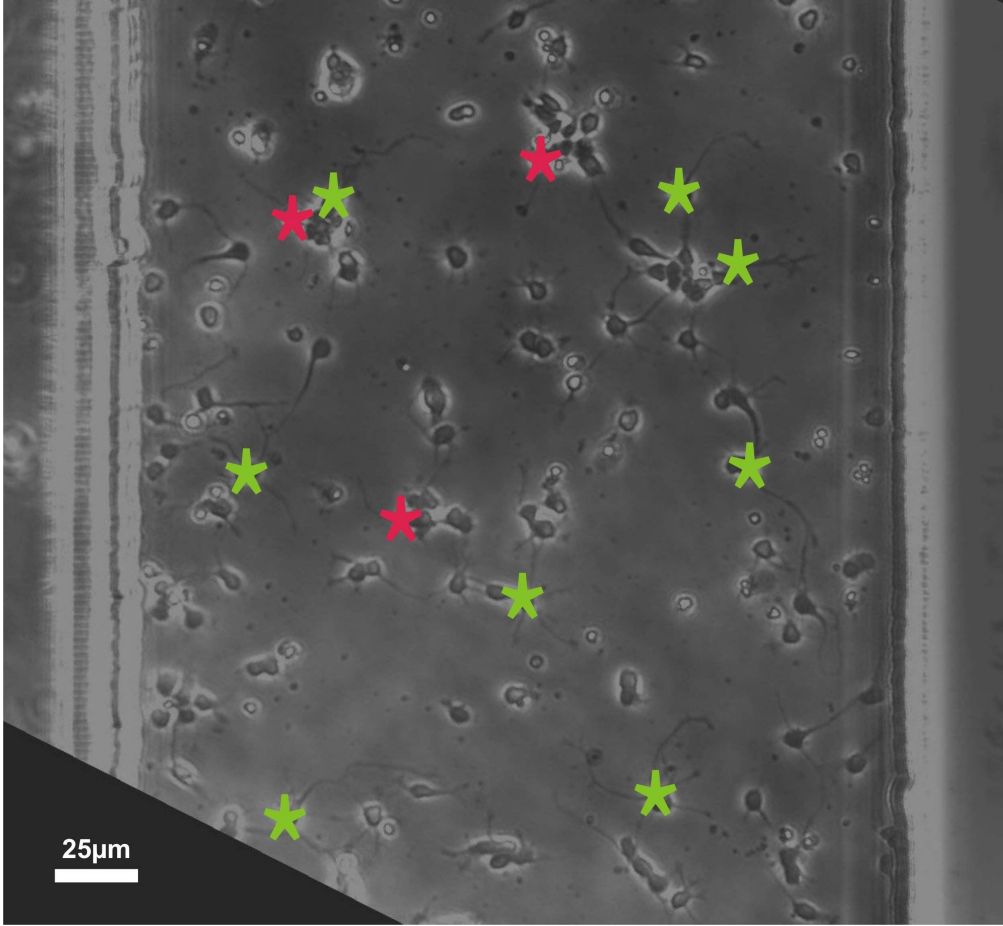
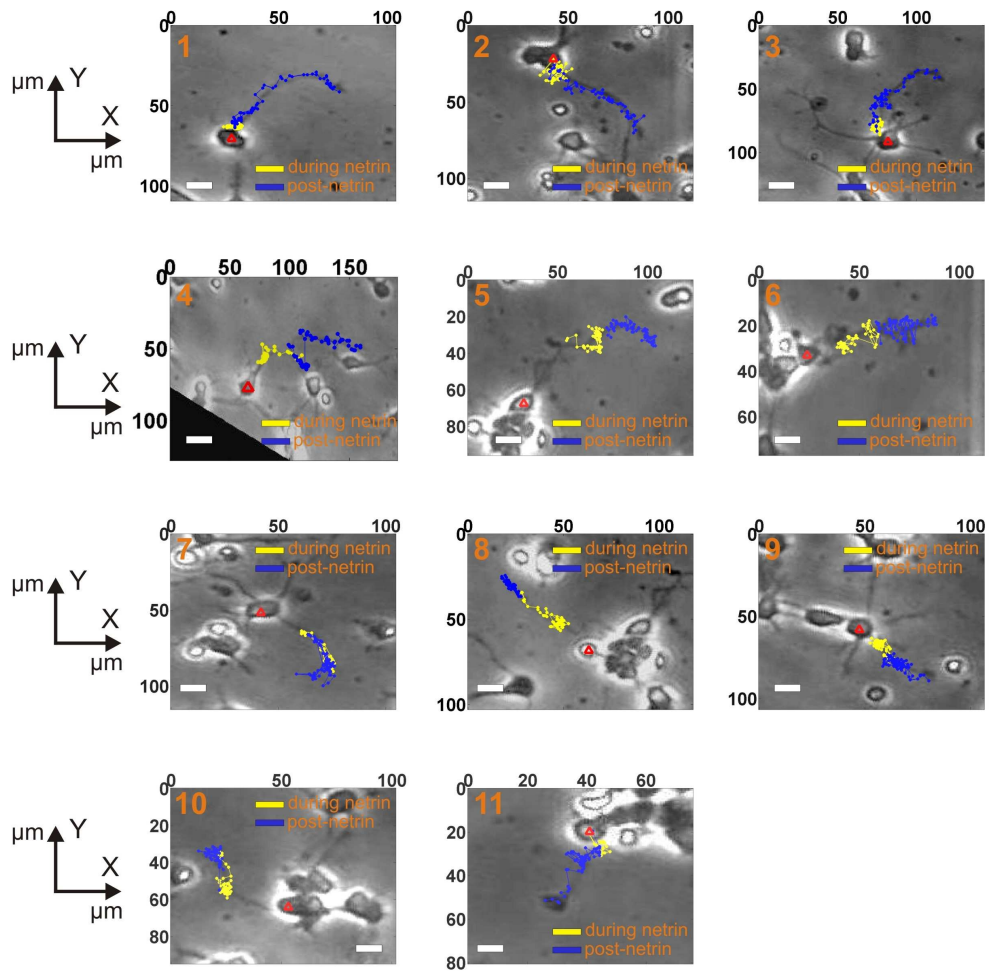


**Fig. S1:** Distribution of the netrin responsive neurons in the chamber (Green stars represent neurons that had axons growing towards the gradient; red stars represent neurons that had axons growing away from the gradient). Scale Bar = 25  $\mu\text{m}$ .



**Fig S2:** Tracking the axon tips of the netrin-responsive neurons. The red triangle denotes the position of the cell body and the yellow line traces the axon tip during the application of the netrin gradient, whereas the blue line traces the axon tip after the gradient was withdrawn.

Scale bar = 20  $\mu\text{m}$ .



**Fig S3:** Instantaneous axon growth speeds of the netrin-responsive neurons. The average speeds during the application of the netrin gradient and after the removal of netrin, for each individual neuron, are plotted as a "pink" line.

