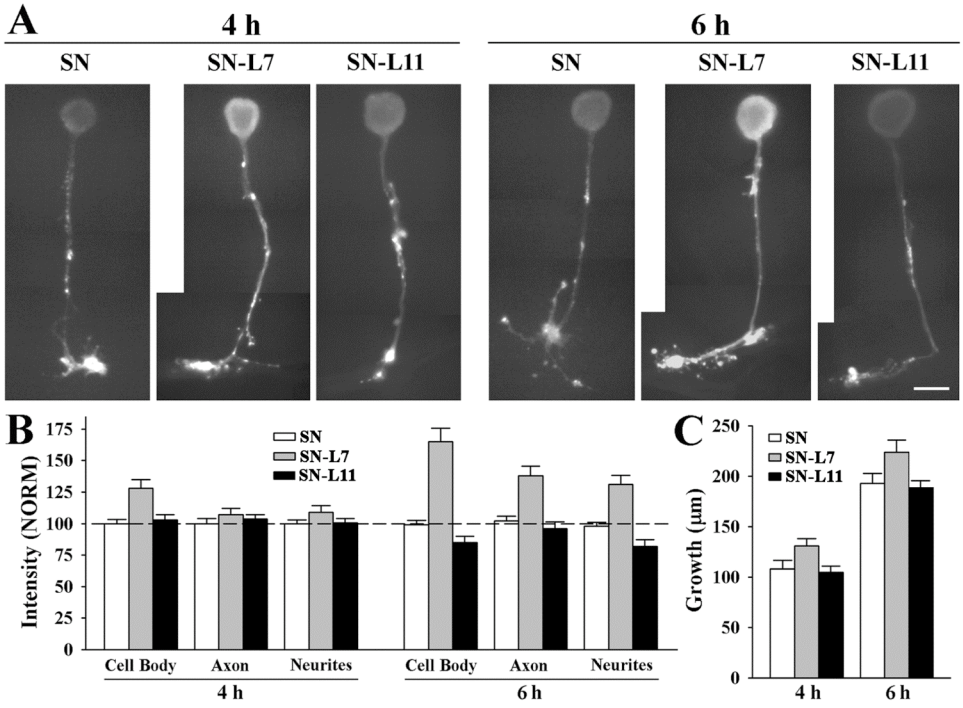
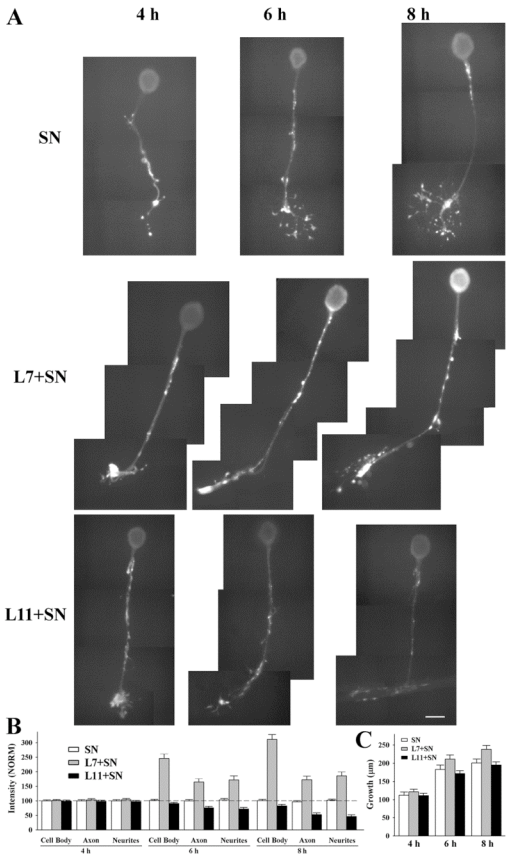
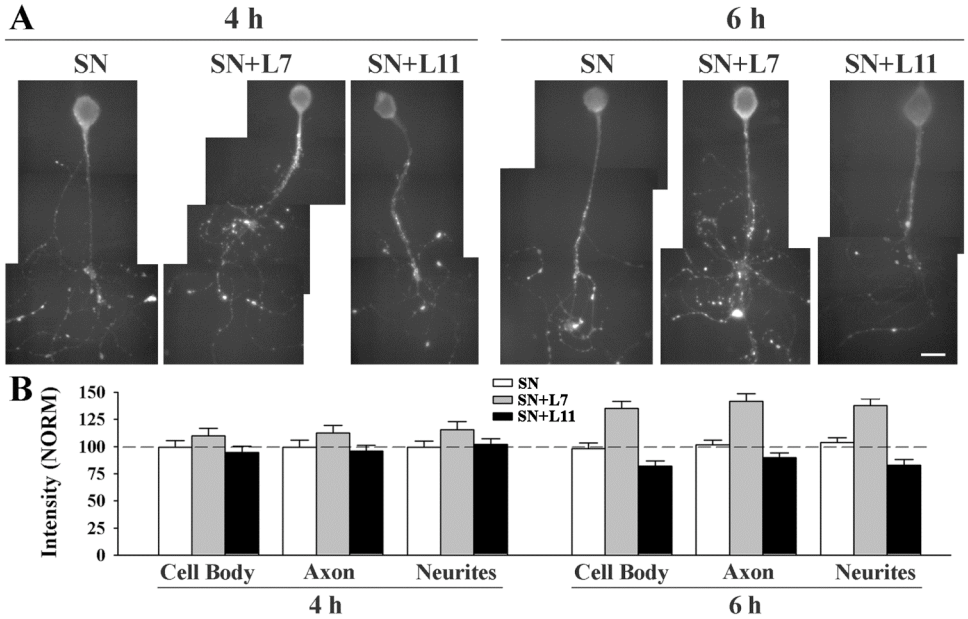


Supplementary Figure 1: Target-dependent differences in sensorin expression and growth emerges at 6 h for SN-L7 and SN-L11 cultures. **A**. Epifluorescent images of sensorin immunostaining in sensory neurons plated alone (SN), contacting L7 (SN-L7) or L11 (SN-L11) at 4 h and 6 h. Sensorin staining throughout the sensory neuron was independent of target at 4 h and began to diverge at 6 h. The bar equals 50 μm. **B**. Sensorin expression in sensory neurons contacting L7 at 6 h, but not at 4 h, was stronger that the staining in sensory neurons plated alone or contacting L11. The height of each bar is the Mean ± SEM staining intensity for sensorin in each compartment at each time point after normalizing to the intensity values in cach compartment (100% ± SEM) for the sensory neuron plated alone at 4 h. ANOVA indicated a significant effect of target interaction for each compartment with time ($df = 10, 122$; $F = 25.818$, $p < 0.001$). Individual comparisons indicated that at 4 h staining intensity in each compartment of the sensory neurons contacting L7 ($n = 13$) or L11 ($n = 13$) was not significantly different from the staining in each compartment of sensory neurons plated alone ($n = 9$). At 6 h staining in all compartments of the sensory neurons contacting L7 ($n = 12$) were significantly higher than the staining in either sensory neurons plated alone ($n = 8$; $p < 0.03$ to $p < 0.01$) or contacting L11 ($n = 12$; $p < 0.01$). At 6 h staining in the distal neurites of sensory neurons contacting L11 was significantly lower ($p < 0.05$) than the staining in distal neurites of sensory neurons plated alone. **C**. Target-dependent differences in sensory neuron growth emerge at 6 h. The height of each bar is the Mean ± SEM in the extent of neuritic growth of sensory neurons in contact with L7 or L11 based on detectable sensorin immunochemistry in the distal neurites of the sensory neurons. ANOVA indicated that target interaction evoked a signifinficant difference in growth ($df = 5, 61$; $F = 80.597$; $p < 0.001$). Individual comparisons indicated that differences in growth were not significant at 4 h, but were significant in sensory neurons contacting L7 compared to sensory neurons plated alone or sensory neurons contacting L11 at 6 h ($p < 0.05$).



Supplementary Figure 2: Target-dependent differences in sensorin expression and sensory neuron axon growth emerge at 6 – 8 h in L7 + SN and L11 + SN cultures. **A**. Epifluorescent images of sensorin immunostaining in sensory neurons plated alone (SN) contacting L7 (L7 + SN) or L11 (L11 + SN) at 4 h, 6 h, and 8 h after plating each sensory neuron. Sensorin staining in all compartments of the sensory neuron was comparable at 4 h. Differences in some compartments began to emerge at 6 h with the remaining compartments showing differences at 8 h. The bar equals 50 µm. **B**. Sensorin expression in sensory neurons contacting L7 at 6 h and 8 h, but not at 4 h, was stronger than the staining in sensory neurons contacting L11. The height of each bar is the Mean ± SEM staining intensity for sensorin in each compartment at each time point after normalizing to the intensity values in each compartment (100% ± SEM) of the sensory neurons plated alone at 4 h. ANOVA indicated a significant difference in staining with target over time ($df = 16, 182$; $F = 64.570$; $p < 0.001$). Individual comparisons indicated no significant difference in staining intensity for each compartment at 4 h. Starting at 6 h, staining in sensory neurons contacting L7 ($n = 13$) wa s significantly higher than staining in sensory neurons plated alone ($n = 8$) or contacting L11 ($n = 12$) in the cell body ($p < 0.01$), in the axon ($p < 0.01$) and in the distal neurites ($p < 0.03$ to $p < 0.01$). At 8 h staining in axons and neurites of sensory neurons plated with L11 were significantly lower than staining in those compartment of sensory neurons plated alone ($p < 0.05$). **C**. Target-dependent differences in sensory neuron growth emerge at 8 h. The height of each bar is the Mean ± SEM in the extent of neuritic growth of sensory neurons based on detectable sensorin immunochemistry in the distal neurites of the sensory neurons. ANOVA indicated that target interaction evoked a significant difference in growth ($df = 8, 91$; $F = 78.905$; $p < 0.001$). Individual comparisons indicated that differences in growth by sensory neurons were not significant at 4 h and 6 h but were significant at 8 h ($p < 0.05$).



Supplementary Figure 3: Target-dependent differences in sensorin expression emerge at 6 h in SN + L7 and SN + L11 cultures. **A**. Epifluorescent images of sensorin immunostaining in sensory neurons plated alone (SN) contacting L7 (SN + L7) or L11 (SN + L11) at 4 h and 6 h after plating the target neurons. Sensorin staining in the sensory neuron in each culture was relatively high at 4 h, since the sensory neurons were plated more than a day earlier. Differences in staining are apparent at 6 h. The bar equals 50 µm. **B**. Sensorin expression in sensory neurons contacting L7 (n = 12) at 6 h was greater than sensorin expression in sensory neurons plated alone (n = 8) or contacting L11 (n = 12). The height of each bar is the Mean + SEM staining intensity for sensorin in each compartment at each time point after normalizing to the intensity values in each compartment (100% + SEM) for the sensory neurons plated alone at 4 h (n = 8; n = 12 for each of the co-cultures). ANOVA indicated a significant difference of target over time. ($df = 10, 118$; $F = 3.782$, $p < 0.03$). Individual comparisons indicated no significant differences in staining at 4 h, but significantly strong staining at 6 h in the sensory neurons contacting L7 compared to sensory neurons plated alone or contacting L11 in the cell body ($p < 0.04$ or $p < 0.01$), axon ($p < 0.03$ or $p < 0.01$) and distal neurites ($p < 0.04$ or $p < 0.01$). Sensorin staining in the distal neurites of sensory neurons contacting L11 was significantly lower ($p < 0.05$) than the staining in distal neurites of sensory neurons plated alone.