Figure S1. Expression of *Advillin* mRNA in other regions of nervous system. Coronal sections of P0 neonatal mice were hybridized with *Advillin* mRNA probe. *Advillin* is detected in all craniofacial sensory ganglia, including facial (VII, ***C***), vestibulocochlear (VIII, ***A, B***), glossopharyngeal (IX, ***D***) and vagus (X, ***D***) ganglia. *Advillin* expression is also found in proprioceptive neurons in Me5 mesencephalic trigeminal nucleus (***F***) and Mo5 motoneurons (***E***). Scale bars, 100 μm.

Figure S2. *Advillin* is not expressed in sympathetic ganglia. *Advillin* mRNA was not detected by *in situ* hybridization in the sympathetic ganglia (***A***). Supporting this, hPLAP activity was not detected in the sympathetic ganglia in Avil-hPLAP mice (***B***). The same section was stained with anti-PGP9.5 antibody as a control (***C***). Note that strong PLAP staining of the nerve bundles mask the fluorescence of anti-PGP9.5. Scale bars, 100 μm.

Figure S3. All sensory nerve endings are labeled by hPLAP activity in Avil-hPLAP mice. The adjacent sections of developing mystacial pads (***A, B***) and forelimb (***C, D***) at E12.5 were stained for hPLAP activity (***A, C***) or with anti-PGP9.5 antibody to detect all axons (***B, D***). Both stainings showed similar patterns, suggesting almost all axons that have projected to the peripheral targets are labeled by hPLAP even in the earliest stages. Scale bar, 100 μm.

Figure S4. Peripheral sensory axons after the electrocauterizion in the Avil-hPLAP heterozygous and homozygous mice. The sections of mystacial pads of heterozygous (***A, B***) and homozygous (***C, D***) mice were stained by AP-activity. Arrows and open arrows indicate cauterized and adjacent control whiskers, respectively. Peripheral axons were retracted and could not be observed after whisker cauterization. Scale bar, 100 μm.