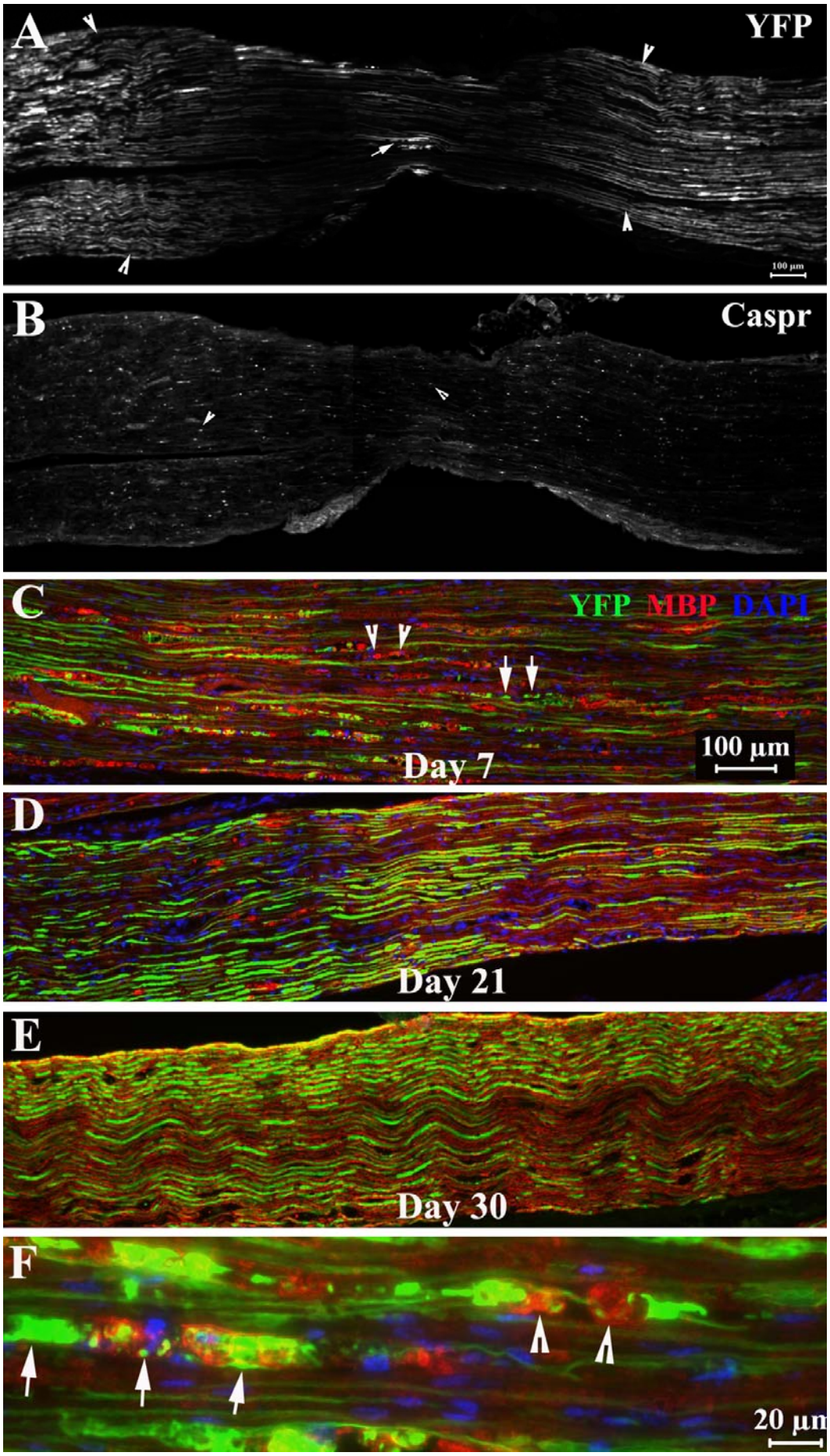
SUPPLEMENTARY TABLE 1: Induction time of CB was not different between nerves with low CMAP amplitude and with high CMAP amplitude.

Genotype	CMAP (mV)	Induction Time (minutes)	P value
Pmp22+/+	<3.64 (n=17)	59.1±14.0	
	>3.64 (n=18)	67.2±26.3	0.26
Pmp22+/-	<2.0 (n=16)	35.9±13.0	
	>2.0 (n=16)	32.0±8.3	0.31 .

SUPPLEMENTARY FIGURE 1: A. Sciatic nerve from a *pmp22*+/+/*Yfp* mouse was compressed, sectioned into 10μm thickness, and stained with an antibody against Caspr. The compressed nerve was imaged under the 10x lens. A montage was created from two adjacent nerve segments, which showed a decrease of YFP intensity in the middle with a length of about 1.5mm (between arrowheads). This is the nerve segment that was under compression. The change of YFP intensity permits the localization of the compressed region with great precision. Arrow points to an area within this compressed region spared from the compression force. B. To avoid obscuring the signals of Caspr by YFP, Caspr staining is shown separately. Caspr localization and expression (arrowheads) were unchanged in the compressed nerve (Scale in B is the same as that in A). Figure C-E were taken from *pmp22*+/- nerves. C. Compressed sciatic nerves were harvested at different time points of post-compression (day 0, 5, 7, 14, 21, and 30). At day 7, signs of axonal degeneration were seen in a small portion of nerve fibers, such as fragmented myelin (arrowheads in 1C and **1F with a high magnification**) and axons (arrows in 2C **and 1F**). These changes were rarely detectable at day 21 (1D). Notice that there was a partial recovery of 'waves' of nerve fibers. These waves completely recovered by day 30 (1E).

SUPPLEMENTARY FIGURE 2: A. A teased myelinated nerve fiber from a *Pmp22+/-/Yfp* mouse sciatic nerve was stained with an antibody against the paranodal marker, Caspr. A large tomaculae (revealed by phase-contrast imaging) was found in the left paranode and extended into juxtaparanode and internode. An axon in the tomaculae appeared flattened (between arrowheads). Notice that the node on axon appeared slightly displaced from the nodal site into the internode of myelin (arrows in A). This phenomenon has been infrequently observed by us in large teased myelinated nerve fibers with a short duration of fixation (<30 minutes), in wild-type and mutant mice. We believe that this has been due to slight axonal movement within the myelin sheath during teasing procedures, as has been reported (Hess A and Young JZ, 1952). NB: this was a non-compressed nerve fiber that had nothing to do with the 'nodal invagination' that has been described in compressed nerve fibers (Ochoa et al., 1972). B. Axonal constrictions (between arrowheads) were observed in three myelinated nerve fibers. A small segment of convoluted axonal membrane was observed in one of the myelinated nerve fiber (arrow in B). C1-6. Montage images from the same field in the above figure are displayed. Each tomographic section was 1μm step up in sequence. The convoluted axonal membrane was not seen in C1 (attention to the boxed area), but gradually appeared in the subsequent images, suggesting this convoluted membrane was extending above the main portion of the axon.

Supplementary Figure 1



Supplementary Figure 2