Supplemental Figure 1. Dynamic expression of *Necl-1* in the developing spinal cord. Cross sections of spinal cord tissues from various embryonic and postnatal stages were subject to i*n situ* RNA hybridization with the *Necl-1* ribroprobe. *Necl-1* expression was detected in the gray matter neurons at all stages examined.

Supplemental Figure 2. Normal neuronal and glial differentiation in *Necl-1* mutants. Spinal cord sections from P7 wild-type (**A-C**) and *Necl-1* mutant (**D-F**) animals were subject to immunofluorescent staining with anti-NeuN (A, D), anti-CC1 (B, E) and anti-GFAP (C, F).

Supplemental Figure 3. Normal myelination of sciatic nerves in *Necl-1* mutants. Myelination of sciatic nerve tissues from P7, P15 and P60 wild-type (**A-C**) and *Necl-1* mutant (**D-F**) animals were examined under transmission EM. At P60, Remak bundles (represented by asterisks) consisting of clusters of loosely ensheathed small axons were also observed in both the wild-type and mutant animals. **G.** Number of myelinated axons per micrograph (500 μm^2) in the wild-type and mutant tissues at various postnatal stages (n=3). Scale bar, 2 μm. **H.** Western immunoblotting of P7 to P60 sciatic nerves with anti-MBP and anti-β-actin antibodies.

Supplemental Figure 4. Normal expression of *Necl-4* in *Necl-1* mutant spinal cord. Spinal cord tissues from P7, P15 and P60 wild-type (**A-C**) and *Necl-1* mutant (**D-F**) animals were subject to *Necl-4* RNA *in situ* hybridization. *Necl-4* expression was detected in both neurons in the gray matter and oligodendroglial cells in the white matter.