## **Description of Additional Supplementary Files**

**Supplementary Video 1:** Human oligodendrocyte myelination of mouse axons. A z-stack showing Human GFP+ (green) oligodendrocytes generating MBP (red) 10 weeks after transplantation into Shi/Shi:Rag2-/- mice. Hoechst (blue). Corresponding still shown in Supplementary Figure 1 E.

**Supplementary Data 1:** Copy Number Variation The tab "all CNVs" contains the location, size and copy number value of all the CNVs detected with the SNP array in the NRP1+/+ and NRP1-/- cells. In green are highlighted the CNVs that are identical between the two samples. The second tab contains the CNVs found in the NRP1-/- cells but absent in the NRP1+/+

**Supplementary Data 2:** CAS9 off-target predicted sequences