Nusinersen ameliorates motor function and prevents motoneuron Cajal body disassembly and abnormal poly(A) RNA distribution in a SMA mouse model.

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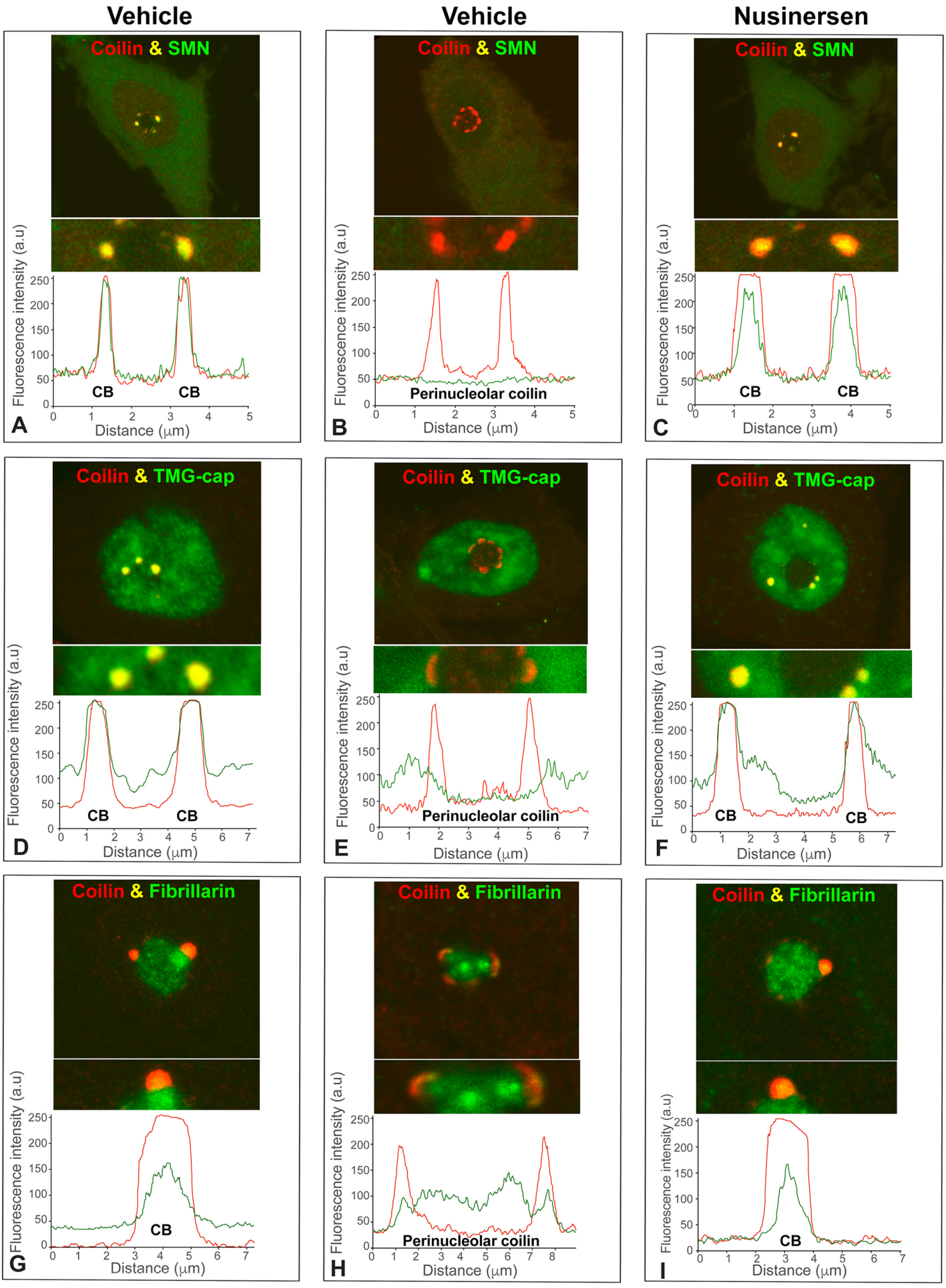
Supplemental Information

Supplementary Video S1.

See attached file Video S1.mp4

Supplementary Video S1. By P12, important variations were noted among the 3 experimental groups (WT, SMNΔ7 and nusinersen-treated SMNΔ7 mice). The attached video illustrates 3 comparable mice at P12 (each of one representing the 50th percentile of its group). It can be noted that SMNΔ7 mice were significantly smaller in size than nusinersen-treated SMNΔ7 mice, which have almost the same size as WT mice. Regarding motor performance, important differences were also noted. Whereas SMNΔ7 mice exhibited a very severe amyotrophy that conditioned the inability to move, mice treated with nusinersen had moderate hindlimb muscle atrophy and preserved their ambulation capacity. Within this group, moderate hindlimb paresis was also noticeable in comparison with the WT group.



Supplementary Figure S2. Linear profiles of the fluorescence signal intensities of coilin and SMN (A-C), coilin and TMG-cap (D-F), and coilin and fibrillarin (G-I) in WT, SMNΔ7 and nusinersen-treated SMNΔ7 αMNs. Note the colocalization of coilin with SMN, TMG-cap and fibrillarin in canonical CBs from WT and nusinersen-treated SMNΔ7 αMNs, as well as the absence of both SMN and TMG-cap in perinucleolar caps of SMNΔ7 αMNs.