SUPPLEMENTARY FIGURES

Figure S1

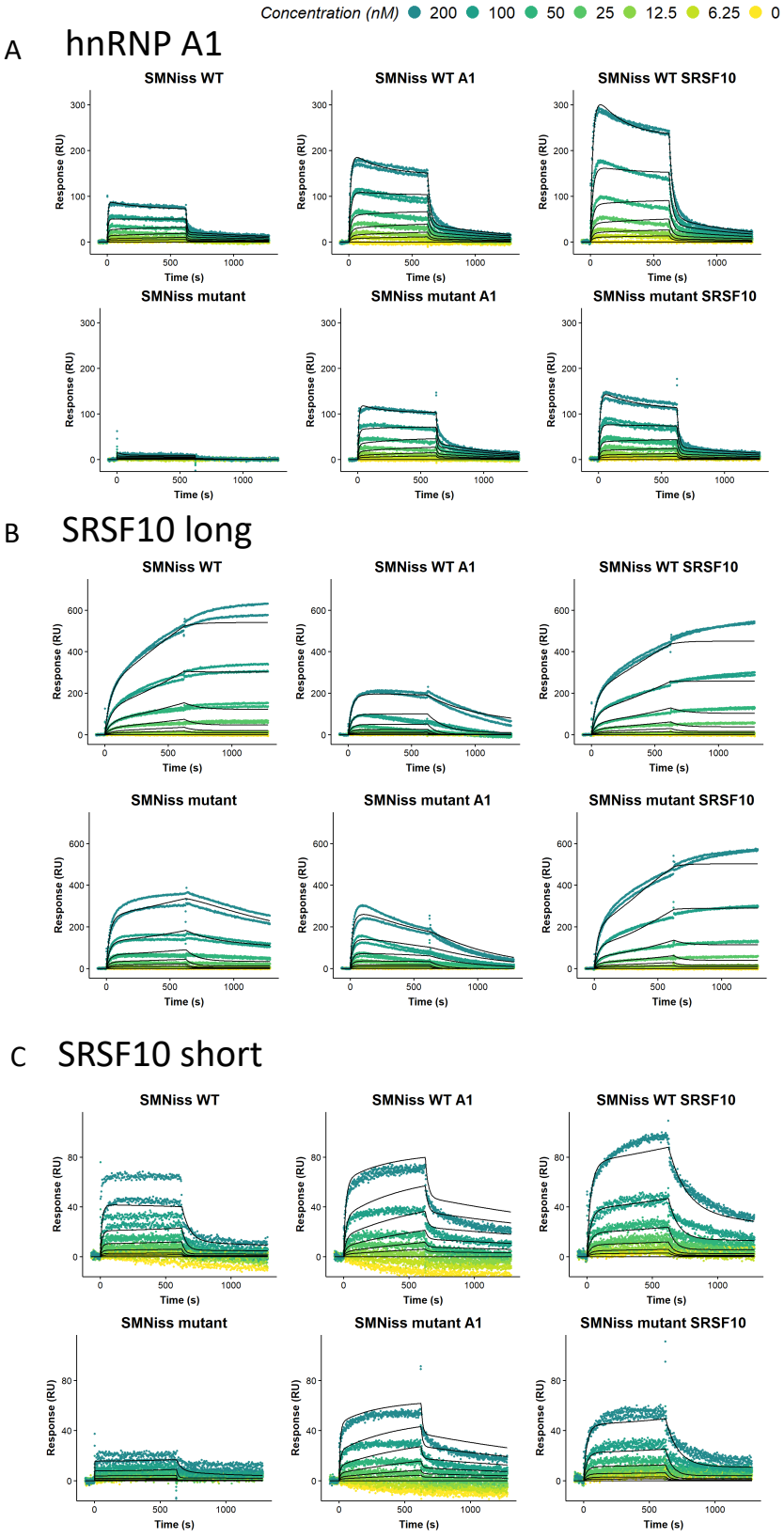
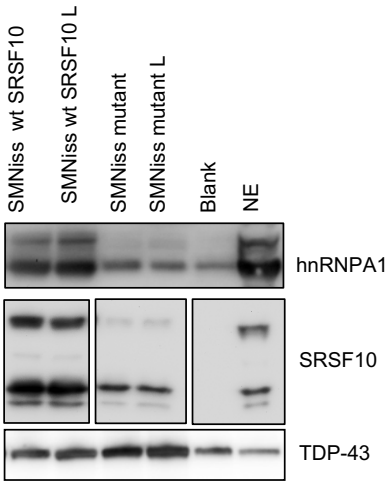

Concentration (nM) 200 100 50 25 12.5 6.25 0
A hnRNP A1
SMNiss WT
SMNiss WT A1
SMNiss WT SRSF10
SMNiss mutant
SMNiss mutant A1
SMNiss mutant SRSF10
B SRSF10 long
SMNiss WT
SMNiss WT A1
SMNiss WT SRSF10
SMNiss mutant
SMNiss mutant A1
SMNiss mutant SRSF10
C SRSF10 short
SMNiss WT
SMNiss WT A1
SMNiss WT SRSF10
SMNiss mutant
SMNiss mutant A1
SMNiss mutant SRSF10
Response (RU)
Time (s)

Figure S1. Surface plasmon resonance imaging (SPRi) of recombinant hnRNP A1 protein and SRSF10 long or short. hnRNP A1, SRSF10 long or SRSF10 was injected in increasing 2-fold concentrations from 6.25 to 200 nM. Measurements were fitted to a bimodal 1:2 binding model to account for the two hnRNP binding sites on the oligonucleotide sequence using ClampXP and ggplot2 for plotting.

Figure S2

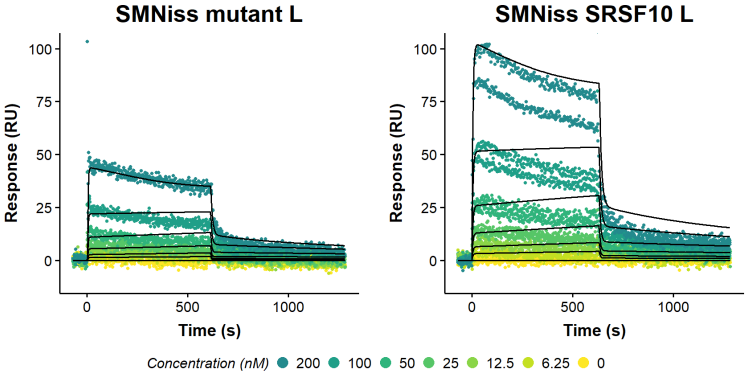
A

```
SMNiss mutant          5´CCCGCAUUAUGAACGUGAAX 3´
SMNiss mutant L        5´CCCGCAUUAUGAACGUGAAUCUUX´3
SMNiss wt SRSF10       5´CCAGCAUUAUGAAAGACAAX´3
SMNiss wt SRSF10 L     5´CCAGCAUUAUGAAAGACAAUCUUX´3
```

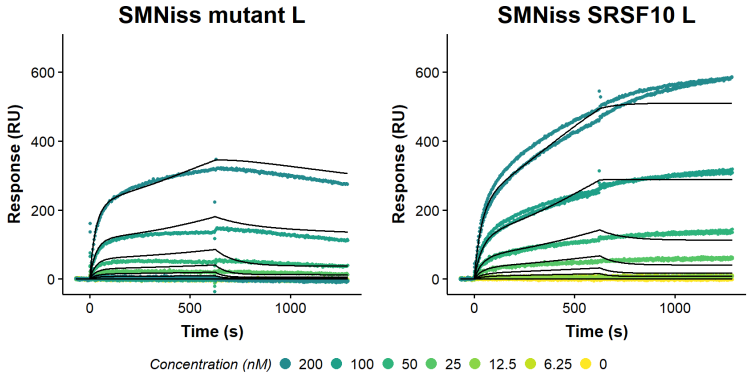


B

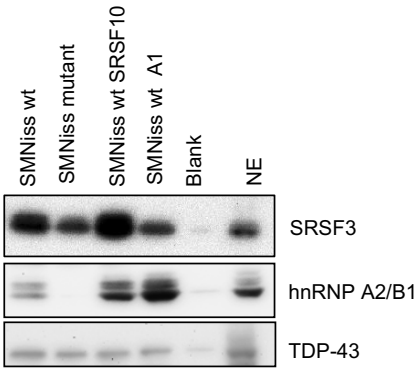
hnRNP A1



SRSF10 long



C



D

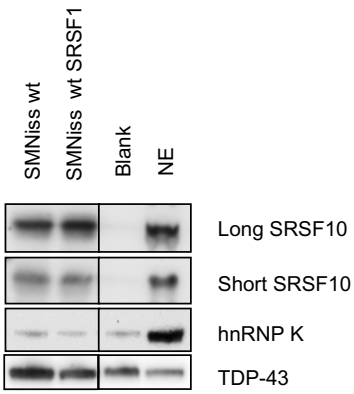


Figure Supp 2. (A) Test of short and long oligonucleotides by western blot with antibodies against hnRNP A1, SRSF10 and TDP-43 as control. The oligonucleotide sequence is displayed. (B) SPRi data of hnRNP A1 and SRSF10 binding to the long oligonucleotides. (C) Validation of iTRAQ by western blot with antibodies against hnRNP A2/B1 and SRSF3 proteins. TDP-43 is included as loading control. The displayed blots are representative result from at least three pull down experiments. (D) Western blot validation of pull down sample against SRSF10 and hnRNP K. TDP-43 is used as a loading control.

Figure S3

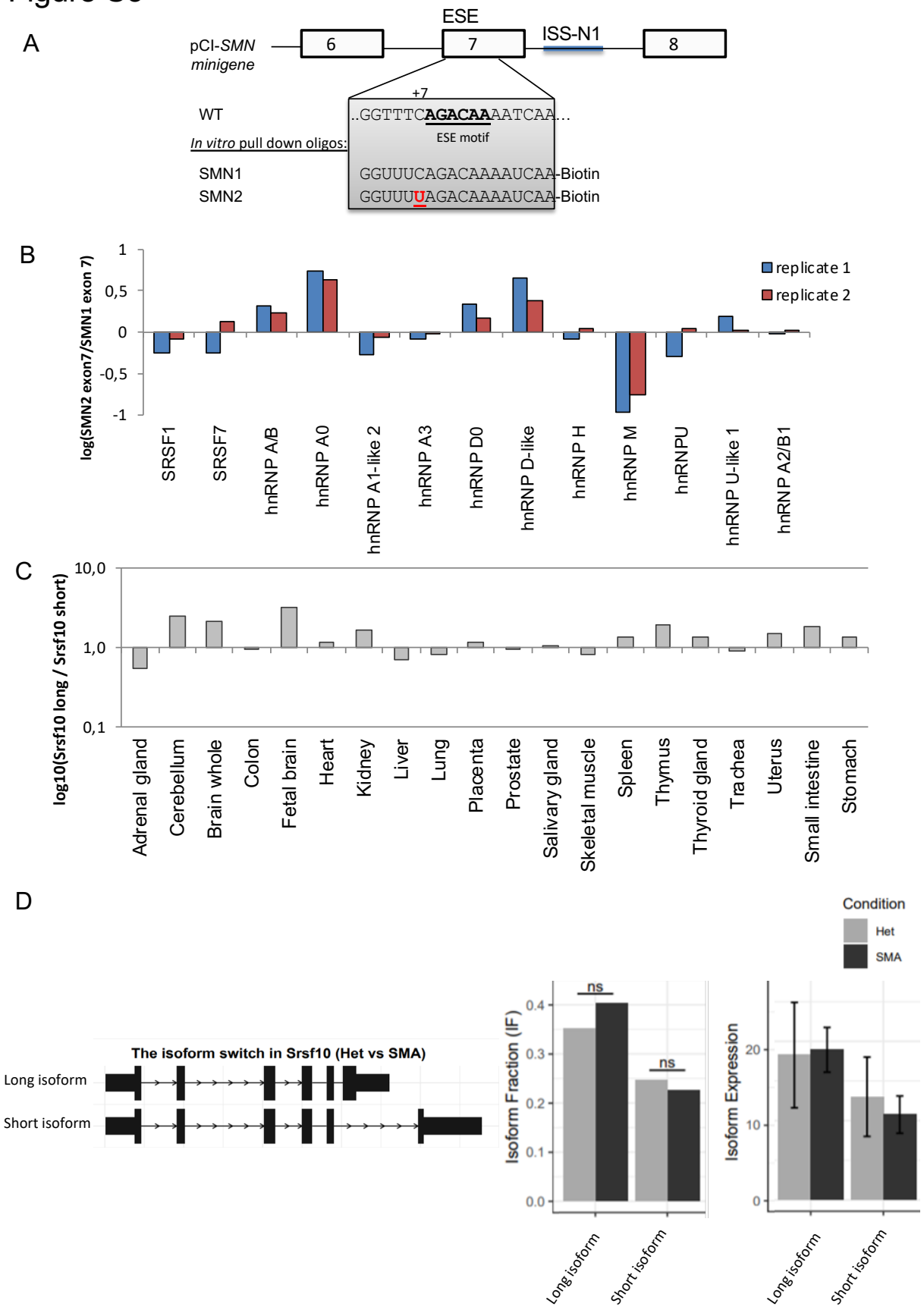

A
ESE
pCI-SMN minigene
6
7
ISS-N1
8
+7
WT
..GGTTTCAGACAAAATCAA...
ESE motif
In vitro pull down oligos:
SMN1
GGUUUCAGACAAAAUCAA-Biotin
SMN2
GGUUUUAGACAAAAUCAA-Biotin
B
log(SMN2 exon7/SMN1 exon 7)
1
0,5
0
-0,5
-1
replicate 1
replicate 2
SRSF1
SRSF7
hnRNP A/B
hnRNP A0
hnRNP A1-like 2
hnRNP A3
hnRNP D0
hnRNP D-like
hnRNP H
hnRNP M
hnRNPU
hnRNP U-like 1
hnRNP A2/B1
C
log10(Srsf10 long / Srsf10 short)
10,0
1,0
0,1
Adrenal gland
Cerebellum
Brain whole
Colon
Fetal brain
Heart
Kidney
Liver
Lung
Placenta
Prostate
Salivary gland
Skeletal muscle
Spleen
Thymus
Thyroid gland
Trachea
Uterus
Small intestine
Stomach
D
Condition
Het
SMA
The isoform switch in Srsf10 (Het vs SMA)
Long isoform
Short isoform
Isoform Fraction (IF)
0.4
0.3
0.2
0.1
0.0
ns
ns
Long isoform
Short isoform
Isoform Expression
20
10
0
Long isoform
Short isoform

Figure Supp 3. (A) Schematic overview of the RNA oligonucleotides used for RNA affinity assay and iTRAQ of the exon 7 region. For the investigation of the exon 7 ESE region two RNA oligonucleotides are made to match either *SMN1* or *SMN2* wt or mutant. Protein eluates from pulldowns were labeled for iTRAQ and MS/MS identification. (B) Graphical representation of proteins identified in both replicates. The Y-axe is the ratio between the *SMN1* region and the *SMN2* region. (C) QPCR analysis with SRSF10 long and short specific primers using RNA from 20 different human tissues. (D) SRSF10 isoform expression analysis from RNA seq data on SMA mice Spinal cord, post-natal-day 5 and heterozygote control mice.

Figure S4

SMN2+100G AUGUUAGAAAGUUGAAAGGUUAA-Bio

SMN1+100A AUGUUAAAAAGUUGAAAGGUUAA-Bio

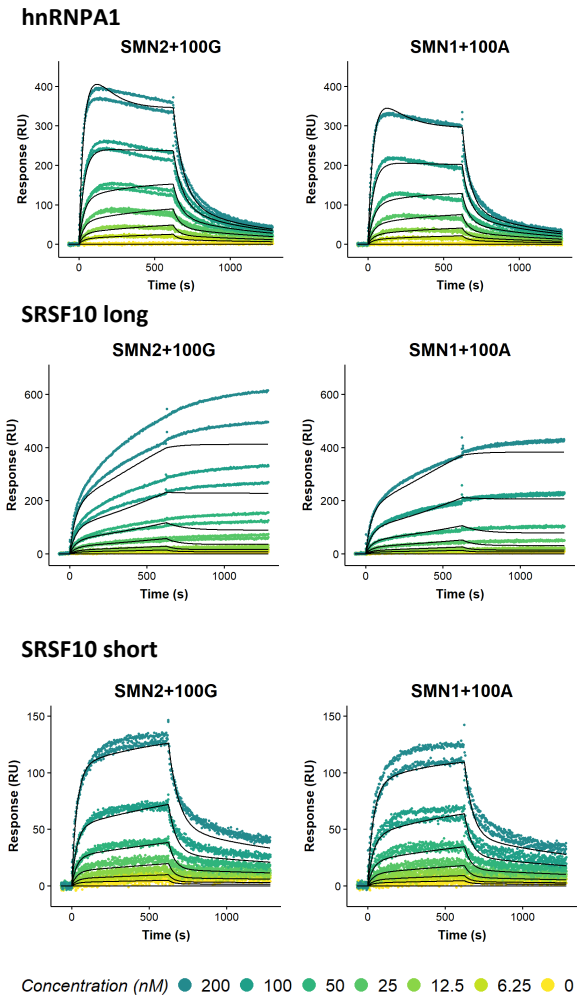


Figure S4. Surface plasmon resonance imaging (SPRi) of recombinant hnRNP A1 protein and SRSF10 long or short to the +100 ISS of SMN2 or SMN1. HnRNP A1, SRSF10 long or SRSF10 was injected in increasing 2-fold concentrations from 6.25 to 200 nM. Measurements were fitted to a bimodal 1:2 binding model to account for the two hnRNP binding sites on the oligonucleotide sequence using ClampXP and ggplot2 for plotting.