

Stathmin-2 loss leads to neurofilament-dependent axonal collapse driving motor and sensory denervation

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Supplementary Table 1. Mouse genotyping primers

Genotyping Stmn2-KO allele

Primer	5' label	SEQUENCE 5' → 3'	3' label	PRIMER TYPE
48340		CTC TCA GCC TCC AGG TTT CT		Common
48341		GAG GAA AGG GTG CAT TTG G		Wild type Reverse
48342	FAM	TGG ATT GTG TCG TGG AAG TGT A	Quencher-1	WT Probe
48343		TGC TCT TTA CTG GGC TTT CC		Mutant Reverse
48344	HEX	CCT CAG TGG TGG AGG GC	Quencher-2	MUT Probe

Genotyping BAC Tg-STMN2

Primer	5' LABEL	SEQUENCE 5' → 3'	3' label	PRIMER TYPE
31704		AGT GGC CTC TTC CAG AAA TG		Internal Positive Control Forward
31705		TGC GAC TGT GTC TGA TTT CC		Internal Positive Control Reverse
52211		CGT GTA CTG ATG CAG GTC TGG		Transgene Forward
52212		CTG AAG CTC CAG AAA TTG AGA		Transgene Reverse

Genotyping Sarm1 KO allele

Primer	5' label	SEQUENCE 5' → 3'	3' label	PRIMER TYPE
22162		TGT GGT TTC CAA ATG TGT CAG		Mutant Reverse
49955		GAA ATG CAT GGA GGG GTT G		Common
49956		CCA CCA AAC GTG TCC AAT C		Wild type Reverse

Supplementary Table 2. qPCR Probes

qPCR probes	Sequence 5' - 3'
Mouse STMN2 Fw	TGTCACTGATCTGCTCCTGC
Mouse STMN2 Rev	TGGGAGATGGTGGCTTCAAG
Mouse TDP43 Exon1 Fw	GCCTAGCGGAGATTTAAGCA
Mouse TDP43 Exon 2 Rev	CATGCCCCTGGAAACTGGG
Mouse TDP43 Exon 2 Rev	CGACAACCACTACCTGAGCC
Clover fluorescent protein (AAV) Fw	CGACAACCACTACCTGAGCC
Clover fluorescent protein (AAV) Rev	GACCATGTGATCGCGCTTCT
Mouse GAPDH Fw	GGCAAATTCAACGGCACAGT
Mouse GAPDH Rev	GGGTCTCGCTCCTGGAAGAT
Mouse Nrnx1 Fw	GTGTCCCAGTGACGATGAGG
Mouse Nrnx1 Rev Mouse Agbl1 Fw	CACCTACTCTGGTGGGGTTG TGCTGAACGCGGATGTTCTG
Mouse Agbl1 Rev	CAGTGAAGTTCTGTTCTGCGT
Mouse SARM1 Fw NM_172795	CTCTGCAGCCAGAGAAATGCT
Mouse SARM1 Rev NM_172795	GACCCTGAGTTCCTCCGGTA
Mouse STMN1 Fw NM_019641	CGCTTGCGAGAGAAGGACAA
Mouse STMN1 Rev NM_019641	CGGGACAACCTTAGTCAGCCT
Mouse STMN3 Fw NM_009133	GAGGAGCGGAGGAAGACTCA
Mouse STMN3 Rev NM_009133	CGCCAGGCGGCTAAAGTTAT
Mouse STMN4 Fw NM_019675	GACGGCGAGACCCATCATTA
Mouse STMN4 Rev NM_019675	TTTCTCCGCGAGGTGTTTCA

Supplementary Table 3. Antibodies

Primary Antibodies					
Name	Cat #	Company	Host	Dilution	Application
NeuN	ABN78	Millipore-Sigma	rabbit	1:1000	IHC
CHAT (Choline acetyltransferase)	AB144P	Millipore-Sigma	goat	1:100	IHC
GFAP–Cy3 conjugated (clone G-A-5)	C9205	Millipore-Sigma	mouse	1:1000	IHC
Iba1 (clone NCNP24)	019-19,741	Wako	rabbit	1:1000	IHC
α -BTX (α -bungarotoxin, Alexa Fluor 555 conjugated)	B35451	Invitrogen	-----	1:500	IHC
Synaptophysin	NBP2-25170	Novus Biologicals	chicken	1:500	IHC
Neurofilament-H	AB5539	Millipore-Sigma	chicken	1:500	IHC
Calcitonin gene related peptide (CGRP)	Ab36001	Abcam	goat	1:1000	IHC
Lectin IB4 conjugated to Alexa- Fluor 647 (anti-IB4 Alexa Fluor 647)	I32450	Molecular Probes	-----	1:2000	IHC
Human/Mouse Stathmin-2/STMN2 Clone #684433	MAB6930	R&D	mouse	1:200	IHC (antigen retrieval)
Anti-phosphorylated KSP sites in Neurofilament-H and M (SMI-31)	50-102-9514	Biolegend	mouse	1:1000	WB
Neurofilament-H Clone RT-97	NBP2-29435	Novus Biologicals	mouse	1:500	WB
NF-M, Clone NN18	N5264	Sigma	mouse	1:1000	WB
NF-L, Clone NR4	N5139	Sigma	mouse	1:1000	WB
Mouse Tubulin β 3, Clone TUJ1;	801202	Biolegend	mouse	1:4000	WB
Rabbit Tubulin β 3 Clone TUJ1;	845502	Biolegend	rabbit	1:4000	WB
Stathmin-2	10586-1-AP	Proteintech	rabbit	1:1000	WB
Stathmin-2	NBP1-49461	Novus Biologicals	rabbit	1:1000	WB
GAPDH Clone 6C5	ab8245	Abcam	mouse	1:5000	WB
GAPDH Clone 14C10	2118	Cell Signaling	rabbit	1:5000	WB

Secondary Antibodies					
Name	Cat #	Company	Host	Dilution	Application
Cy3 AffiniPure Donkey anti-Guinea Pig IgG [H1L]	706-165-148	Jackson ImmunoResearch	Donkey	1:500	IHC
Alexa 488 Donkey anti-Goat IgG [H1L]	A-11,055	Invitrogen	Donkey	1:500	IHC
Alexa 549 Donkey anti-Rabbit IgG [H1L]	A-21,207	Invitrogen	Donkey	1:500	IHC
Alexa Fluor 488-conjugated Donkey Anti-Rabbit IgG	711-545-152	Jackson ImmunoResearch Laboratories	Donkey	1:500	IHC
Alexa Fluor 488-conjugated Donkey Anti-Mouse IgG	715-545-151	Jackson ImmunoResearch	Donkey	1:500	IHC
Alexa Fluor 647-conjugated Donkey Anti-Rabbit IgG	711-605-152	Jackson ImmunoResearch	Donkey	1:500	IHC
Alexa Fluor 647-conjugated Donkey Anti-Mouse IgG	715-605-151	Jackson ImmunoResearch	Donkey	1:500	IHC
Anti-Mouse IgG, HRP-Linked Whole Ab	84-848	Prometheus	Sheep	1:5000-1:15000	WB
Donkey Anti-Rabbit IgG, HRP-Linked Whole Ab	84-854	Prometheus	Donkey	1:5000-1:15000	WB

Supplementary Table 4. FISH probes

FISH probes			
Name	Cat #	Company	Assay
RNAscope® Probe- Mm-Stmn2-C2	498391-C2	ACD Biotech	RNAscope Multiplex Fluorescent Assay