Supplemental Table legends

Supplemental Table SI - Genes differentially expressed between Hnrnpab$^{+/+}$ and Hnrnpab$^{-/-}$ INCs. RNA from three independent isolates of Hnrnpab$^{+/+}$ and Hnrnpab$^{-/-}$ INCs were sent to the New York Genome Center for sequencing. The genes whose changes were consistent between two independent differential gene analyses of this data are indicated by gene name. The DESeq2 entries for the differential expression of these genes is listed here. Genes analyzed further in Tables SII and SIII are indicated in green and yellow, respectively.

Supplemental Table SII - Cell motility genes from Table SI were selected for RT-QPCR screening and are indicated by gene name. We quantified mRNA levels of the indicated genes using RT-QPCR in Hnrnpab$^{+/+}$ and Hnrnpab$^{-/-}$ INCs. The results are expressed as the $\log_2$ of the fold change relative to the mRNA expression Hnrnpab$^{+/+}$ INCs. The data represents several independent experiments, with each experiment representing a measurement in duplicate. The number of experiments is the same for each gene between Hnrnpab$^{+/+}$ and Hnrnpab$^{-/-}$ and are as follows: Eps8 n=12; Eps8l2 n=4; Rnd1 n=4; Unc5b n=3; Parvb n=2; Sema7a n=2; Sema3a n=2; Tns1 n=3. Consistency with the RNA-seq analysis and whether or not the change was corrected by the restoration of Hnrnpab WT is indicated.

Supplemental Table SIII - Transcription factor genes from Table SI were selected for RT-QPCR screening and are indicated by gene name. We quantified mRNA levels of the indicated genes using RT-QPCR in Hnrnpab$^{+/+}$ and Hnrnpab$^{-/-}$ INCs. The results are expressed as the $\log_2$ of the fold change relative to the mRNA expression Hnrnpab$^{+/+}$ INCs. The number of experiments is the same for each gene between Hnrnpab$^{+/+}$ and Hnrnpab$^{-/-}$ and are as follows:

En1 n=4; Zic1 n=3; Eomes n=2; Irx1 n=1; Irx2 n=1’ Zfp52 n=1; Foxf2 n=1;Six2 n=1. Consistency with the RNA-seq analysis and whether or not the change was corrected by the restoration of Hnrnpab WT is indicated.

Supplemental Table SIV Primers used for RT-QPCR. All primers were first verified by RT-PCR to look for the presence of a single band. Melting curves were generated for all primer sets to confirm a single amplicon.

Supplemental Table SV Probes used for Intron FISH are listed 5’ to 3’.

Cell Motility Gene	Log2(fold change) DESeq2	Log2(fold change) RT-QPCR	Detectable by RT-QPCR in both Hnrnpab$^{+/+}$ and Hnrnpab$^{-/-}$ INCs?	RT-QPCR >2-fold changed?	RNAseq and RT-QPCR in agreement?	Rescued in WT-MG?
Eps8	**-1.5087743**	**-5.7590**	**Yes**	**Yes**	**Yes**	**Yes**
Rnd1	-0.889	-2.00125	Yes	Yes	Yes	No
Tns1	1.06808	2.0667	Yes	Yes	Yes	No
Unbc5b	-1.1055941	-0.65	Yes	No	N/A	N/A
Sema3a	-1.8828949	0.905	Yes	No	N/A	N/A
Sema7a	-1.5180376	0.36	Yes	No	N/A	N/A
Parvb	-1.1039353	0.0225	Yes	No	N/A	N/A
Eps8l2	-2.0419489	-2.35	No	N/A	N/A	N/A

Supplemental Table S2.

Transcription Factor	Log_2(fold change) DESeq2	Log_2(fold change) RT-QPCR	RNAseq and RT-QPCR in agreement?	Rescued in WT-MG?
En1	-2.635	-3.801	Yes	No
Zic1	-2.430	-2.600	Yes	No
Zfp52	-0.894	1.455	No	N/A
Six2	-1.612	0.930	No	N/A
Irx1	2.405	-0.310	No	N/A
Irx2	2.944	-4.230	No	N/A
Eomes	-2.052	0.025	No	N/A
Foxf2	-1.754	0.520	No	N/A

Supplemental Table 3.

Table SIV Primers used for RT-QPCR

Name of Gene	Forward Primer	Reverse Primer
Eps8	CAACTCCTAATCACCAAGTAGATA	CTTCGATCGTCGAGTATCTCT
Snrnp70	CCGCGCGATTTGGCAAGA	CTTGTTGGAGGAGGAGCATCT
Actb	AGTGTGACGTTGACATCCGT	TGCTAGGAGCCAGAGCAGTA
Eps8 intron 2	GAGGACAGGCTGGTAGAGAAGAA	TAGCTTCAGTACAATTACTGGGC
Eps8 intron 20/21	GAGCAGCTCCATTCCACAAGT	TCCCTCACAGTAATTTATTTCCTTGTG
Eps8 transcript 1	GCGGATCCTAGGCTGTCTATA	TCTCACGCCTCTGTTCTCAG
Eps8 transcript 5	CGTGCCCAGTCGAGAAG	GTTTAAGATTTGCACATCCCTGT
Eps8l2	GAGAAACAACAAAGTGGGTCA	GGGTTGGGCCCATTACA
Sema3a	GATATCCTGAAAGAATGTGCC	ATGTTGTCCTCAGGATGATG
Sema7a	CAGTCATGCAGAACCCACAGT	CCTGCACAACTGGGCTACT
Unc5B	CTGAATCAGAGAACTCTAAACGAC	CGGTATACGATCACTCCCAC
Parvb	TCCAGCCCACAGAGCAATTA	GACCCTTGCTTCCAAGGAGA
Zic1	CAGTATCCCGCGATTGGTGT	GCGAACTGGGGTTGAGCTT
Tbr2/Eomes	GCGCATGTTTCCTTTCTTGAG	GGTCGGCCAGAACCACTTC
Tns1	GCTGGCTCTTACCATTGCC	GGGTGCAGCAAGATGTCTG
En1	CTAAGGCCCGATTTCGGTTG	GAGTGAACGGGGTCTCTACCT
Zfp52	AACTTACCTATACCGCAGGGC	ATTGTGGTCTGGATCCTTAGGT
Irx1	TCCGGGATCCCCGTATTGA	CTTCTCGCAGATGGGCTCTC
Irx2	CCCCAAGGAACAAAAGCGA	TGTAGACTGATCCCTTCGTCC
Foxf2	GCGAGGATCTCTCAGTCGGA	GCGGAAGGGTGGAAAGAAGAA
Six2	CTACATCGAGGCGGAGAAGC	GTAGGGGTTGTGAGCGTACC

Table SV. Sequences for intron fluorescence *in situ* hybridization

Gene	Probe Number	Probe sequence	Dye
Eps8 intron 2	1	gatcatgaaggtaggagggg	Quasar 570
Eps8 intron 2	2	ccatcaacatcaacacttcc	Quasar 570
Eps8 intron 2	3	gactggcagatgtcacagaa	Quasar 570
Eps8 intron 2	4	ctcctgagcttgtggaaata	Quasar 570
Eps8 intron 2	5	agggcatcctgtagataatc	Quasar 570
Eps8 intron 2	6	ggcagttactaatgaggagc	Quasar 570
Eps8 intron 2	7	aggtaagtggggaaatgtcc	Quasar 570
Eps8 intron 2	8	ttcacaatgttaacccctttg	Quasar 570
Eps8 intron 2	9	tgtgaatttctccatgctga	Quasar 570
Eps8 intron 2	10	acctgacttctttcattctg	Quasar 570
Eps8 intron 2	11	acctataggttgatagttcc	Quasar 570
Eps8 intron 2	12	tgaggcatccagatgaatgg	Quasar 570
Eps8 intron 2	13	aggagcagcaacaggagtaa	Quasar 570
Eps8 intron 2	14	ctaagagagcgaggaagcgt	Quasar 570
Eps8 intron 2	15	ggaatgcaaagcctcaggaa	Quasar 570
Eps8 intron 2	16	agtcacacaacccattagac	Quasar 570
Eps8 intron 2	17	atgacattttgttccagacc	Quasar 570
Eps8 intron 2	18	gctaagagaggaaccaggta	Quasar 570
Eps8 intron 2	19	acagggtcaatgggcaaaga	Quasar 570
Eps8 intron 2	20	aatttagcagatgagccagc	Quasar 570
Eps8 intron 2	21	ttttggggttgacggaacac	Quasar 570
Eps8 intron 2	22	gcaatgtctggaggacttta	Quasar 570
Eps8 intron 2	23	taagctcacaccagaaggtt	Quasar 570
Eps8 intron 2	24	cttacagctatgactgcaca	Quasar 570
Eps8 intron 2	25	ctccacacatctccttaaac	Quasar 570
Eps8 intron 2	26	ttggagcaaacccacttgaa	Quasar 570
Eps8 intron 2	27	cctacagtactaacaggtct	Quasar 570
Eps8 intron 2	28	ctcatttctctgaagaggca	Quasar 570
Eps8 intron 2	29	cccaacatgatccacaaaca	Quasar 570
Eps8 intron 2	30	tcaagctgtgtacctcatag	Quasar 570
Eps8 intron 2	31	gaactcgcgagctaagcaag	Quasar 570
Eps8 intron 2	32	gcagtgaagttttatctggc	Quasar 570
Eps8 intron 2	33	ccagccttttacagattta	Quasar 570
Eps8 intron 2	34	gcagtatgtcctatttactc	Quasar 570
Eps8 intron 2	35	gaatccacttcatgtcttca	Quasar 570
Eps8 intron 2	36	aatcatattcccagcttagg	Quasar 570
Eps8 intron 2	37	ttacaatcagacgggtgctg	Quasar 570
Eps8 intron 2	38	tgaactcttccgagacggaa	Quasar 570

Eps8 intron 2	39	cagtttatagtaccaccaca	Quasar 570
Eps8 intron 2	40	tctcactctgtccttctaaa	Quasar 570
Eps8 intron 2	41	ttgctggacactaatttcca	Quasar 570
Eps8 intron 2	42	acactcctctatcatttctg	Quasar 570
Eps8 intron 2	43	ggttgtgtgcacataggaag	Quasar 570
Eps8 intron 2	44	ttgagagaggctttgctaga	Quasar 570
Eps8 intron 2	45	tctgctgcagaagtgatgta	Quasar 570
Eps8 intron 2	46	acgacaactcacactgggag	Quasar 570
Eps8 intron 2	47	tgctgagtgacacactgatc	Quasar 570
Eps8 intron 2	48	tggtgtacggaaagagggtt	Quasar 570
Actb introns 1-2	1	aggtactagccacgagagag	Quasar 670
Actb introns 1-2	2	ttctgagtgatcctcaggac	Quasar 670
Actb introns 1-2	3	aaagttggctgtgccagtgt	Quasar 670
Actb introns 1-2	4	aaagagtctacacgctaggc	Quasar 670
Actb introns 1-2	5	aatacggcttttaacacccg	Quasar 670
Actb introns 1-2	6	ctgtgtactctcaagatgga	Quasar 670
Actb introns 1-2	7	gtgatcgtagcgtctggttc	Quasar 670
Actb introns 1-2	8	ttggacaaagacccagaggc	Quasar 670
Actb introns 1-2	9	caagccgaataggcaaaccg	Quasar 670
Actb introns 1-2	10	cgatgcccagtgatagagag	Quasar 670
Actb introns 1-2	11	aatacgcacgcgcagctaac	Quasar 670
Actb introns 1-2	12	agcaggaagcgcaaacaagg	Quasar 670
Actb introns 1-2	13	ggccgcattattaccataaa	Quasar 670
Actb introns 1-2	14	caagctcaggggacaaagga	Quasar 670
Actb introns 1-2	15	aagaaggctatagtcacctc	Quasar 670
Actb introns 1-2	16	cttgccactcccaaagtaac	Quasar 670
Actb introns 1-2	17	gcatcgatccccaagaaaac	Quasar 670
Actb introns 1-2	18	gaagggaacagccttcttag	Quasar 670
Actb introns 1-2	19	caaagagaagggttacccgg	Quasar 670
Actb introns 1-2	20	atgggagaacggcagaagaa	Quasar 670
Actb introns 1-2	21	tcagctcatagaagggagtc	Quasar 670
Actb introns 1-2	22	actgcaaagatccaagggag	Quasar 670
Actb introns 1-2	23	cctcgtctgggaaagagcag	Quasar 670
Actb introns 1-2	24	aaacacctagtcagaaaggc	Quasar 670
Actb introns 1-2	25	taaacccacagcactgtagg	Quasar 670
Actb introns 1-2	26	cacacgagccattgttagta	Quasar 670
Actb introns 1-2	27	cttatcaccagcctcattag	Quasar 670
Actb introns 1-2	28	ctcaatacacactccaaggc	Quasar 670
Actb introns 1-2	29	acttagacctactgtgcatc	Quasar 670
Actb introns 1-2	30	taagttcagtgtgctgggag	Quasar 670
Actb introns 1-2	31	gcaaggagtgcaagaacaca	Quasar 670

Actb introns 1-2	32	ctgtatggatagatctgaga	Quasar 670
Actb introns 1-2	33	aagaaacactcagggcaggt	Quasar 670
Actb introns 1-2	34	gttgtcaagttcagaaagcc	Quasar 670