Supplementary Table S4. Oligos used in this study. Primers for polyA site cloning

Primer name	Primer sequence
mRpl26-F1	CAGGCTAAAGCTGGACAAGG
mRpl26-R1	CCGTGCACGAGATGTCTCTA
mRpl26-R2	TTTCCAGACCCCAAAGACTG
mCCND1-D-PAS-F	GAAGATCTACCCTTGAGGGCCGCTGTAT
mCCND1-D-PAS-R	CCGCTCGAGAACACCCATTTGCGCCAGAC
mCCND1-P-PAS-F	GCTCTAGAAAGCCCTTCTGGAGTCAAGC
mCCND1-P-PAS-R	CGGGATCCCCTTCTCAAGACTTCCCCTG
mDicer1-D-PAS-F	GCTCTAGATGAGGTGAAGGGAAGAACAT
mDicer1-D-PAS-R	CGGGATCCTAAGGAACCCATCAAGTAAG
mDicer1-P-PAS-F	GCTCTAGATTTAAAGGTGTTGGCCGGAG
mDicer1-P-PAS-R	CGGGATCCAGCAGGACAGGTATAGTGTAAG
mSbno1-D-PAS-F	GAAGATCTTGCTCCCAAGTGTCCAGAAT
mSbno1-D-PAS-R	CCGCTCGAGGAGTTTACTACATGTGCAGA
mSbno1-P-PAS-F	GCTCTAGAGTACAAATGTGAATAGACAC
mSbno1-P-PAS-R	CGGGATCCCCCAGCTCTTTGAGAAGATT
mEtf1-D-PAS-F	GCTCTAGATAAGTTTGGAAATGATGCCA
mEtf1-D-PAS-R	CGGGATCCACATTGCCTTCTGACTTACA
mEtf1-P-PAS-F	GCTCTAGAAAAAGAATCCCAGTTTTTAC
mEtf1-P-PAS-R	CGGGATCCTAGGCTGAGATGACAGGGAG
mAhctf1-D-PAS-F	AGTCTAGAAAATGGATTTGTCAAATG
mAhctf1-D-PAS-R	ATGGATCCACATCTCTGCCC
mAhctf1-P-PAS-F	AGTCTAGAGAGTGCAGTTCTTGTAGTG
mAhctf1-P-PAS-R	ATGGATCCTCTTAACTGTAAAGAAAGG
mNcaph2-D-PAS-F	AGTCTAGAAACTGCCAAGCCTC
mNcaph2-D-PAS-R	ATGGATCCAGGCACTTGTTTtc
mNcaph2-P-PAS-F	AGTCTAGAAGTAGTATATACCTGGAGGTCTT
mNcaph2-P-PAS-R	ATGGATCCTATACCTATTGCCTAGG
mDicer1-P-PAS-F	GCTCTAGAGCACAAGGATGGTTCGGGCT
mDicer1-P-PAS-R	CGGGATCCGGATTAAAGCACTCCTGTGA
mDicer1-D-PAS-F	GCTCTAGAAGTTACCTTTAGCTTTTCCG
mDicer1-D-PAS-R	CGGGATCCAACGAGCTTGTCTACTGAAT

mSbno1-P-PAS-F	GCTCTAGAGCTTGCACAGGTTGCACTAT
mSbno1-P-PAS-R	CGGGATCCGGCTACCTGGAAGGCTAAGG
mSbno1-D-PAS-F	GCTCTAGAAAGTACTCTATGTATTTAGG
mSbno1-D-PAS-R	CGGGATCCACGTCAACCCTTGCCAAGGA

Primers for mouse ESC and Lineage Markers

Gene	**Forward**	**Reverse**
Oct4	CCTCCTCTGAGCCCTGTGC	CTCCTTCTGCAGGGCTTTCAT
Lefty1	TGCCCTTATCGATTCTAGGC	AGCTGCTGCCAGAAGTTCAC
Lefty2	CACAAGTTGGTCCGTTTCG	GGTACCTCGGGGTCACAAT
Eomes	ACCCGACCTTCCCTGCTATG	ACCCGACCTTCCCTGCTATG
Sox17	GGTCTGAAGTGCGGTTGG	TGTCTTCCCTGTCTTGGTTGA
Sox1	GAGGCCAGTCTGGTGTCAG	GTGACATCTGCCCCCATC
Fgf5	GAGACACAGCAAATATTTCCAAAA	GTTTCCAGTGGAGCCCTTC
Brachyury	CTGGGAGCTCAGTTCTTTCGA	GAGGACGTGGCAGCTGAGA
Gata3	TTATCAAGCCCAAGCGAAG	TGGTGGTGGTCTGACAGTTC
Kdr	GCACCACATCCAGTGGTACTGGCAG	CCCTGGAAATCCTCCACGTGTCTC
FoxA1	GAACTCCATCCGCCACTCGCTG	GCGCAAGTAGCAGCCGTTCTCG
Col5a2	GGAGAAGCAGGACCAGAGGGTC	CCAAGAGCAGCAGTAAGATGGCC
Gcm1	TACGGATGAAGGGGAGACCAGCAG	CTTCCCTGACTCGGGATTTCAGC

Primers for DRS-Sequencing Validation/ Gene Expression Analysis

	cUTR/Gene Expression	
Gene	**Forward**	**Reverse**
Atp5a1	GGTTATCTTGACAAACTGGAGCCCAG	CCCATCAGACCTGATATTGCCCAAG
Chmp4B	GGAGAAGAGTTCGACGAGGATGAGC	GTCCAACTCCTCTTGTTCAAGTTCCTC
Ahctf1	CTGTGAAGACAAGAGCAAGCA	CCAAGGGAGAAACCAGCTTA
Cdca3	CAGCGCACTCCTATTCAGGT	AGACCGTTCAGCTGTTCTGC
Ncaph2	GGGCGAGTATCTGGAGGAG	CAGTGCTGCCTCAATGAAGT
Mkrn1	GTTTATGGAGACCGCTGCAGATACG	CATTTCAGCAAGTGATCCAACACCAG
Ide	CTTGTCCGAAGCGCCACCCTTG	CAGTGGCAGGCCACGCTTGAA
Sbno1	CCTTGAGGCTGCCTGTGCGC	GGGAACTCCCACAGTAAGGAC

		AAGG
Wdr18	TTCATTGGACCAGACTGTGAA	GCCCATGTCAAACAAGACAG
Bclaf1	CCAAGGAGATGGGATTGTTGAAGATG	GTAAGTGTCAAGTTCTGCTCCCTGTTG
Ncl	CATGGTGAAGCTCGCAAAG	TCACTATCCTCTTCCACCTCCTT
Hypk	CAGCAGAAAGGAGCTTGAGGGAACA	CAGTCAGTCAGTCAGTCCAGAATGTCTAAA
6720456B07Rik	GTGGAGGCAGTCCTGGCTGAGAC	GGGAAGCATGAGAGCTACTGATACC
Ino80e	CCAGAGTAGCCACCCAGTGCC	GTCAGTGGCCGAAGCATGGC
Nfyb	TCTGTTTGCCATGTCCACTC	GAGACTGCTCCCCCGATAC
2410015M20Rik	GGAGTACCTCAAGGAACACAGCAAG	CCACTGGGATGTCTCTGCCATC
Rcc2	GTCTCGGGAACCAGACAGAT	TAAACCAGGCACCTTCAACC
Rbx1	GGCGGCGGCGATGGATGTGG	CAGAGGGCCACTGCATTCCAC
Etf1	GGATTTGGTGGAATTGGAGGTATCTTG	CGGTTGCCGGACCCATGTCG

	eUTR	
Gene	**Forward**	**Reverse**
Atp5a1	GGCTCAGGTGTGTACCAGGATTTG	GCCTAGGCTAGCCATTGCTGAGGTC
Chmp4B	CACTGAGTTGCTGGGCTGCG	GTCAGCTGCAGGGCTACATTTCC
Ahctf1	TCCTCTTTTCCGACATCTGC	ACTGGTAACTGCCACAGAACC
Cdca3	CAACTCTGGTACTTGGACATCG	TCAGAAGTGGCAGGAGAGAGAT
Ncaph2	AGTTTCACCTCCTGAGATCCTG	AGGCAGCTAGATAACCTGCTTG
Mkrn1	GCGTGGCGCGGGCACTGGTC	AGGTGAGGGTAGAGGAACAGGCC
Ide	CCCAGTGCTAGAAACGCAGACTG	CAACAGAATCTGATGAGCGAGAGC
Sbno1	GGCAGAGACTTGATGGAGCGC	GCATCCACTGGGCAAAATGTGC
Wdr18	GAGACCATCTGCCTGTACTTCC	CTCAGGAGACTGGGGACTTAGA
Bclaf1	GGTCTTAGATACCAGCTACCTACGAGAG	GCTACAGGATAACCTTCCTCTACATGA
Ncl	GTGGGGAACAGCTTCATCAT	CAATGGGGTACCATTCCTTG
Hypk	CTTCAGTTTCATCTCAGATCAAATGC	GGTACTTCTTTATACTGATTGTTCACAC
6720456B07Rik	GGCTGGAGAGGGTCTCCTTGTTG	GACAGGAACACTGACTGGAGAGCC
Ino80e	CACTGGCAGGAGACTCCCACGTG	CTTCTTGTGAGGGACTGTGGAGAGC
Nfyb	TGTGCATTTTCTACAGAAAGGTT	TGGCTATTTGGAGATTAAATAG

	ATTA	CATC
2410015M20Rik	GATGTAGAGCCTTTGCTTTATGGGC	GCTCCAAACATTACATCTGGAACATAG
Rcc2	CACGGGAAGCTCTAGGACAG	TAAACCAGGCACCTTCAACC
Rbx1	GTGGAGAGTGATCTGAGAAGGAGCCAG	CAGGTTCCTCGTGACCTTGTGAAGATG
Etf1	GTCAGACTGAGTGCCAACACACTGG	AACGCTAATGGCACAGAGGGCTC

Primers for 3'UTR cloning

Gene	Primer	Sequence
Ahctf1	Forward	ATCGACTAGTATTTTTAGCCCAAGATTTTAACACGCACC
	Reverse-cUTR	GAACACGCGTACTTTACAGTAGTTTATTTAACCTCCCAATGATAA
	Reverse-eUTR	GAACACGCGTCTTGTCAGTTTTTTTTATTGTGCTACTTGTACCA
Ccnd1	Forward	atcgACTAGTGGGCCACCGGGCAGGCGGG
	Reverse-cUTR	gtagACGCGT AACCAACAAAGAGAACAAAACTTCCTCTTCTGG
	Reverse-eUTR	gtagACGCGTCCTGGACCATGCTGGTCACATGT
Dicer1	Forward	atcgACTAGTAGCTTCCGGACTCACAGGCGG
	Reverse-cUTR	gtagACGCGTACACATATTACATGTTTTATTCTGTTATCTATCTC
	Reverse-eUTR	gtagACGCGGAACAGACAATAACTTTATTGACTACAATTATT
Etf1	Forward	atcgACTAGTGTAGTCGACATGGGTCCGGCAAC
	Reverse-cUTR	gtagACGCGCAATATTTCACATATATTTCTTCTTGTGC
	Reverse-eUTR	gtagACGCGCTTAAATATGGTTTAATACTCTTCTCCATTTCTGTAC
Ino80e	Forward	atcgACTAGTAGTGTTGGGGCAGCCCTGACCCC
	Reverse-cUTR	GAACACGCGTGAAAGAGCCAACTCTTTAATACAGAGCC
	Reverse-eUTR	GAACACGCGTAAAGAAGAAGACACTAAATCCGGAATTTAATGAGGT
Ncaph2	Forward	atcgACTAGTGTGGACAGCACTGAGGCAGGG
	Reverse-cUTR	GAACACGCGTAACACTTTATTAGGCTAGGCCAGCC
	Reverse-eUTR	GAACACGCGTCCTATAAAGAACAATTTATTGTAAATAGACACATG
Ncl	Forward	atcgACTAGTTTCCTTCCATCCCATTCTTTCCCTCTTC
	Reverse-cUTR	GAACACGCGTCATCCTTGATAGATCACTGAAAAATTC

	Reverse-eUTR	GAACACGCGTAACAGAGTTTAGGATCTTTACTGTC
Nfyb	Forward	atcgACTAGTTCGGAAGGACGGACGGAACC
	Reverse-cUTR	gtagACGCGTATGAACTCTACCCTTATATTTTATTAAAGGGTAAAC
	Reverse-eUTR	gtagACGCGTTTACGATGTACACAAGATTCAATGAAGGGC
Rcc2	Forward	atcgACTAGTGCAGGCCGGCCCTCCCCTCG
	Reverse-cUTR	gtagACGCGTATCTCGTAGAAAGGCAGGCTGGC
	Reverse-eUTR	gtagACGCGTCGCAGAGTAAACAATGACGCCG
Wdr18	Forward	atcgACTAGTGACGTGCTGGGCCACTGCCAC
	Reverse-cUTR	gtagACGCGTAGAATTGTCCATCCTTTAGTCCATCC
	Reverse-eUTR	gtagACGCGTACTTTGAGCTGGTTTTTAATGAGATGGC

siRNAs

siRNA name	**Gene Name**	**Company**	**Catalog No./sequence**
Control	FF luciferase	Dharmacon/ThermoSci	sequence: CGTACGCGGAATACTTCGA
Fip1-2	Fip1L1	Dharmacon/ThermoSci	D-063984-02
Fip1-3	Fip1L1	Dharmacon/ThermoSci	D-063984-03
Ncaph2-2	Ncaph2	Invitrogen	MSS225245
Ncaph2-3	Ncaph2	Invitrogen	MSS284938
Ncl-1	Ncl	Invitrogen	MSS206961
Ncl-2	Ncl	Invitrogen	MSS275939
Rcc2-1	Rcc2	Qiagen	SI00823039
Rcc2-2	Rcc2	Qiagen	SI00823046
Ahctf1-2	Ahctf1	Qiagen	SI01307138
Ahctf1-4	Ahctf1	Qiagen	SI01307152
Rbx1-2	Rbx1	Dharmacon/ThermoSci	D-041892-02
Rbx1-4	Rbx1	Dharmacon/ThermoSci	D-041892-03
Wwp2-1	Wwp2	Ambion	AM16708
Wwp2-4	Wwp2	Qiagen	SI02743797
Etf1 (1-4)	Etf1	Qiagen	SI00996359 SI00996366 SI00996373

			SI00996380
CPSF30 (1-4)	CPSF4	Qiagen	SI00958671 SI00958678 SI00958685 SI00958692
CFIm25 (1-4)	Nudt21	Qiagen	SI00958720 SI04414732 SI04414739 SI04414746