

RT-qPCR primer sequences:		
Gene name	Forward (F) or Reverse (R)	Sequence (5' to 3')
<i>ACTB</i>	F	GATTCCTATGTGGGCGACGA
	R	AGGTCTCAAACATGATCTGGGT
<i>B2M</i>	F	TGCCGTGTGAACCATGTG
	R	ACCTCCATGATGCTGCTTACA
<i>NES</i>	F	CTGGAGCAGGAGAAACAGGG
	R	GAGGGAAGTCTTGGAGCCAC
<i>SOX2</i>	F	AACGGCAGCTACAGCATGAT
	R	GACTTGACCACCGAACCCAT
<i>PDGFRA</i>	F	GACGGTCTTGAAGTGAGCA
	R	TAAAGCCCTGTCTGCTGTCG
<i>CSPG4</i>	F	GGGCCGTTCTCTATAGCCAC
	R	GACACCATCACCAGGTAGCC
<i>OLIG2</i>	F	AGTGGCTTCAAGTCATCCTCG
	R	TGTTGATCTTGAGACGCAGCT
<i>DLL3</i>	F	TAGCGCTCATTTTCCTCCCC
	R	TGGATCTGCAGCTCGAAGAC
<i>PTPRZ1</i>	F	GCAGTTGGATGGAGAGGACC
	R	TCGACAATCAGTTGGTCGCT
<i>CSPG5</i>	F	GAGCTTCTAGTGCCCACTGG
	R	CATCCCCTTGTGCCAGATGT
<i>NOTCH1</i>	F	CAGATCCTGATCCGGAACCG
	R	CCAGAAACAGGGGTGTCTCC
<i>NCAN</i>	F	GTGTCACTGCCTTCCTACCC
	R	TGCAATGATGGCTGAGCTGA
<i>MOG</i>	F	AGGGAAAGGTGACTCTCAGGA
	R	GGAAGATGAGGCCAACAGTGA
<i>ERBB3</i>	F	TGAATGGCCTGAGTGTGACC
	R	ATCGTAGACCTGGGTCCCTC
<i>EBP</i>	F	TACTGGCTGGCCTCTTCTCT
	R	CCCAGGATGTATCGGCTGTC
<i>Actb</i>	F	GGTGGGAATGGGTCAGAAGG
	R	GTACATGGCTGGGGTGTTGA
<i>B2m</i>	F	TTTCAGTGGCTGCTACTCGG
	R	TGTTCGGCTTCCCATTCTCC

<i>Ebp</i>	F	ATCGAGGGCTGGTTCTCTCT
	R	GCCCATAGACACCACAAGCT

<b>shRNA sequences:</b>		
Name	Clone ID	Sequence (5' to 3')
<i>EBP</i> #1 (human)	TRCN0000049393	CCGG-GCACCTAAGACTGGACAACCTT-CTCGAG-AAGTTGTCCAGTCTTAGGTGC-TTTTTG
<i>EBP</i> #2 (human)	TRCN0000049394	CCGG-CTCCGCTTCATTCTACAGCTT-CTCGAG-AAGCTGTAGAATGAAGCGGAG-TTTTTG
<i>Ebp</i> #1 (mouse)	TRCN0000111870	CCGG-CCAGAAGACTCAAATCTTCTT-CTCGAG-AAGAAGATTTGAGTCTTCTGG-TTTTTG
<i>Ebp</i> #2 (mouse)	TRCN0000111872	CCGG-CCAAGGGAGATAGCCGATATA-CTCGAG-TATATCGGCTATCTCCCTTGG-TTTTTG
Non-targeting control	SHC002	CCGG-CAACAAGATGAAGAGCACCAA-CTCGAG-TTGGTGCTTTCATCTTGTTG-TTTTTG

<b>sgRNA sequences:</b>		
Name	Forward (F) or Reverse (R)	Sequence (5' to 3')
sg- <i>HRH1</i> -exon2-F1	F	CACCGTACATCGTCAGCCTCTCGG
sg- <i>HRH1</i> -exon2-R1	R	AAACCCGAGAGGCTGACGATGTAC
sg- <i>HRH1</i> -exon2-F2	F	CACCGCAGACCTCGGTGCGCCGAG
sg- <i>HRH1</i> -exon2-R2	R	AAACCTCGGCGCACCGAGGTCTGC
sg- <i>CHRM3</i> -exon5-F1	F	CACCGGGTCATCGGTGGTACCGTC
sg- <i>CHRM3</i> -exon5-R1	R	AAACGACGGTACCACCGATGACCC
sg- <i>CHRM3</i> -exon5-F2	F	CACCGAAATGAGTGACGGTTCCCG
sg- <i>CHRM3</i> -exon5-R2	R	AAACCGGGAACCGTCACTCATTTTC
sgRNA-control-F	F	CACCGTAGGCGCGCCGCTCTCTAC
sgRNA-control-R	R	AAACGTAGAGAGCGGCGCGCCTAC

<b>PCR primer sequences:</b>		
Name	Forward (F) or Reverse (R)	Sequence (5' to 3')
PCR- <i>HRH1</i> -F1	F	GGTCACAGTAGGGCTCAACC
PCR- <i>HRH1</i> -R1	R	CACCACCAGCATCTTTTGGC
PCR-M13F- <i>CHRM3</i> -F1	F	TGTA AACGACGGCCAGTCCCCCAGACTATGTCA GAGAG

PCR-M13F- <i>CHRM3</i> -R1	R	CAGGAAACAGCTATGACCCTAAGGCCCATCGATT CATGA
pLentiCRISPR-R1	N/A	CCCGTTGCGAAAAAGAACGT

<b>EBP mutagenesis primer sequences:</b>		
EBP mutation	Forward (F) or Reverse (R)	Sequence (5' to 3')
E80K	F	CATTCACCTGGTGATCAAGGGCTGGTTCGTTCT
	R	AGAACGAACCAGCCCTTGATCACCAGGTGAATG
R147H	F	GCCAGCATCCCCTCCACTTCATTCTACAGCT
	R	AGCTGTAGAATGAAGTGGAGGGGATGCTGGC
W196S	F	GTCTTCATGAATGCCCTGTCGCTGGTGCTG
	R	CAGCACCAGCGACAGGGCATTTCATGAAGAC

<b>Plasmids:</b>			
Name	Provider	Cat. Number	
pcDNA3.1 V5-His A	GenScript	N/A	
pcDNA3.1 <sup>+</sup> C-(K)-DYK-hEBP	GenScript	OHu18817	
pcDNA3.1 <sup>+</sup> C-(K)-DYK-hEBP-E80K	This lab	N/A	
pcDNA3.1 <sup>+</sup> C-(K)-DYK-hEBP-R147H	This lab	N/A	
pcDNA3.1 <sup>+</sup> C-(K)-DYK-hEBP-W196S	This lab	N/A	
EGFP-hGal3	Addgene	73080	
PM-GFP	Addgene	21213	
LentiCRISPRv2E	Addgene	78852	

<b>Chemical compounds:</b>		
Name	Vendor	Cat. Number
Clemastine (fumarate)	Cayman	14637
Lathosterol	Cayman	9003102
Cholesterol-water soluble	Sigma-Aldrich	C4951
Tamoxifen	Sigma-Aldrich	T5648
Puromycin dihydrochloride	Sigma-Aldrich	P8833
Dimethyl sulfoxide	Sigma-Aldrich	D2650-100ML
Ascorbic acid	Lonza	CC-4398
Geneticin (G418 Sulfate)	ThermoFisher	10131035
CW3388	Sigma-Aldrich	SML2602
Polybrene	Sigma-Aldrich	TR-1003

TASIN-1	Cayman	21155
Cetirizine	Cayman	19686
Fexofenadine	Cayman	18191
D-luciferin, sodium salt	Goldbio	LUCNA-1
2-Mercaptoethanol	Sigma-Aldrich	M7522-100ML
Tween 20	BIO-RAD	1706531
Methanol	VWR	BDH1135-4LP
Ethanol absolute	VWR	89125-172
Isoflurane	Patterson	07-893-8441
DAPI	MilliporeSigma	D9542-10MG
Fluphenazine (hydrochloride)	Cayman	23555
Perphenazine	Cayman	20735
Trifluoperazine (hydrochloride)	Cayman	15068
Raloxifene (hydrochloride)	Cayman	10011620
Benzotropine (mesylate)	Cayman	16214
Saponin	MilliporeSigma	84510-100G

<b>Reagents and kits:</b>		
Name	Vendor	Cat. Number
Human PDGF-AA	Shenandoah	100-16
Human PDGF-BB	Shenandoah	100-18
Laminin	MilliporeSigma	L2020
Triton X-100 solution	Fluka	93443
Formalin 10%, neutral buffered	VWR	89370-094
Pierce™ 16% Formaldehyde (w/v), Methanol-free	ThermoFisher	28908
Ponceau S solution	Sigma-Aldrich	P7170
Nitrocellulose Membrane, 0.45um; Roll 30 cm x 3.5 m	Bio-Rad	1620115

Trans-Blot Turbo RTA Mini 0.2 µm Nitrocellulose Transfer Kit	Bio-Rad	1704270
NuPAGE 4-12% Bis-Tris Protein Gels, 1.0mm, 12 well	ThermoFisher	NP0322BOX
NuPAGE 4-12% Bis-Tris Protein Gels, 1.0mm, 10 well	ThermoFisher	NP0321BOX
NuPAGE 4-12% Bis-Tris Protein Gels, 1.5mm, 15 well	ThermoFisher	NP0336BOX
NuPAGE 4-12% Bis-Tris Protein Gels, 1.5mm, 10 well	ThermoFisher	NP0335BOX
Mini Gel Tank	ThermoFisher	A25977
RNA to cDNA EcoDry™ Premix (Double Primed)	Takara (Clontech)	639548
KAPA SYBR FAST qPCR Master Mix (2X)	Roche	KK4602
SuperSignal™ West Pico PLUS Chemiluminescent Substrate	ThermoFisher	34580
Pierce™ BCA Protein Assay Kit	ThermoFisher	23225
Accutase solution	MilliporeSigma	A6964-500ML
Corning 96-well Clear Flat Bottom Polystyrene TC-treated Microplate	Corning	3595
Quick-RNA miniprep kit	Genesee	11-328 (Zymo R1055)
UltraPure DNase/RNase-Free Distilled Water	ThermoFisher	10977015
Dulbecco's Phosphate Buffered Saline	MilliporeSigma	D8537-500ML
PBS, pH 7.4	ThermoFisher	10010023
DPBS, no calcium, no magnesium	ThermoFisher	14190144
4X Laemmli Sample Buffer	BIO-RAD	1610747
Trypan Blue Solution (0.4%)	Sigma-Aldrich	T8154
Opti-MEM™ I Reduced Serum Medium	ThermoFisher	31985070
McCoy's 5A (Modified) Medium	ThermoFisher	16600082
Trypsin (2.5%), no phenol red	ThermoFisher	15090046
Lipofectamine 3000 Transfection Reagent	ThermoFisher	L3000008
Bovine Serum Albumin	Sigma-Aldrich	A9647-100G
Restore Western Blot Stripping Buffer	ThermoFisher	21059
NuPAGE MOPS SDS Running Buffer (20X)	ThermoFisher	NP0001

NuPAGE Antioxidant	ThermoFisher	NP0005
Corning 1L 10X Tris Buffered Saline	Corning	46-012-CM
10x Tris Buffered Saline (TBS)	BIO-RAD	1706435
ProLong Gold Antifade Mountant	ThermoFisher	P36934
SlowFade Diamond Antifade Mountant	ThermoFisher	S36972
FxCycle™ PI/RNase Staining Solution	ThermoFisher	F10797
S.O.C. Medium	ThermoFisher	15544034
TempPlate full-skirted 96-well PCR plate	USA Scientific	1402-9800
Precision Plus Protein Dual Color Standards	BIO-RAD	1610374
50x TAE (Tris/Acetic Acid/EDTA) Buffer, 1 L	BIO-RAD	1610743
Non-fat dry milk	Genesee	20-241
Goat serum	MilliporeSigma	G9023-10ML
QuikChange Lightning Multi Site-Directed Mutagenesis Kit	Agilent	210519
ZymoPURE Plasmid Miniprep Kit	Genesee	11-553
Neon Transfection System 10 µL Kit	ThermoFisher	MPK1025

<b>Equipment:</b>		
Name	Vendor	Cat. Number
Bioruptor Standard	Diagenode	UCD-200
CFX96 Real-Time PCR Detection System	BIO-RAD	N/A
Nunc Lab-Tek II Chamber Slide System - 2-well Chamber Slide w/ removable wells	ThermoFisher	154461
PowerPac Basic Power Supply	BIO-RAD	1645050
Trans-Blot Turbo Transfer System	BIO-RAD	1704150
ChemiDoc MP System	BIO-RAD	1708280

<b>Antibody:</b>					
Name	Vendor	Cat. Number	RRID	Dilution for blotting	Dilution for IF
Nestin	MilliporeSigma	ABD69	AB_2744681		<b>1:500</b>
SOX2	Cell Signaling	3579S	AB_2195767	<b>1:1000</b>	<b>1:400</b>
PDGF receptor $\alpha$	Cell Signaling	3174S	AB_2162345	<b>1:1000</b>	
PDGF receptor $\alpha$	Cell Signaling	5241S	AB_10692773		<b>1:400</b>

CSPG4	Cell Signaling	43916S	N/A		<b>1:200</b>
OLIG2	Novus	NBP1-28667	AB_1914109	<b>1:3000</b>	<b>1:1000</b>
Galactocerebroside	MilliporeSigma	MAB342	AB_94857		<b>1:200</b>
EBP	Santa Cruz	sc-374267	AB_11012162	<b>1:500</b>	
$\alpha$ -tubulin	Cell Signaling	3873S	AB_1904178	<b>1:1000</b>	
Anti-rabbit IgG, HRP-linked Antibody	Cell Signaling	7074S	AB_2099233	<b>1:1000</b>	
Anti-mouse IgG, HRP-linked Antibody	Cell Signaling	7076S	AB_330924	<b>1:1000</b>	
Goat anti-Rabbit IgG (H+L) - Alexa Fluor 594	ThermoFisher	A-11037	AB_2534095		<b>1:500</b>
Goat anti-Rabbit IgG (H+L) - Alexa Fluor 647	ThermoFisher	A-21245	AB_2535813		<b>1:500</b>
Goat anti-Rabbit IgG (H+L) - Alexa Fluor Plus 488	ThermoFisher	A32731	AB_2633280		<b>1:500</b>
Goat anti-Mouse IgG (H+L) - Alexa Fluor 488	ThermoFisher	A-11029	AB_2534088		<b>1:500</b>
Goat anti-Mouse IgG (H+L) - Alexa Fluor Plus 488	ThermoFisher	A32723	AB_2633275		<b>1:500</b>
Goat anti-Mouse IgG (H+L) - Alexa Fluor Plus 647	ThermoFisher	A32728	AB_2633277		<b>1:500</b>
Normal Rabbit IgG	MilliporeSigma	12-370	AB_145841		<b>1:800-1:1000</b>
Normal Mouse IgG	MilliporeSigma	12-371	AB_145840		<b>1:200-1:1000</b>
Rabbit IgG Isotype Control	ThermoFisher	31235	AB_243593		<b>1:1200-1:20000</b>
Mouse IgG Isotype Control	ThermoFisher	31903	AB_10959891		<b>1:2500</b>