

Supplementary Table 1. Reagents used in this study.

KEY REAGENTS			
	REAGENT	SOURCE	IDENTIFIER
Antibodies (western blot)	Mouse monoclonal anti- α -Tubulin	Sigma-Aldrich	#CP06
	Rabbit polyclonal anti-LaminB1	Abcam	#ab16048
	Rabbit monoclonal anti-HIF-1 alpha	Abcam	#ab179483
	Rabbit monoclonal anti-Erk1/2	Cell Signaling	#4695
	Rabbit monoclonal anti-p-Erk1/2 (Thr202/Tyr204)	Cell Signaling	#4370
	Rabbit polyclonal anti-p-JNK (Thr183/Tyr185)	Cell Signaling	#9251
	Rabbit polyclonal anti I κ B α	Cell Signaling	#9242
	Mouse monoclonal anti-STAT3	Cell Signaling	#9139
	Rabbit polyclonal anti-p-STAT3 (Tyr705)	Cell Signaling	#9131
	Rabbit polyclonal anti-CD44 (C-term)	Abcam	#ab157107
	Rabbit polyclonal anti-CD44	Proteintech	#15675-1-AP
	Mouse monoclonal anti-GFP (CoraLite® Plus 488-conjugated)	Proteintech	#CL488-66002
Antibodies (flow cytometry)	Anti-CD44-PE	Biolegend	#103008
	Anti-CD44-APC	Biolegend	#103012
	Anti-P-RelA-PE	BD Phosflow	#558423
	Anti-P-cJun-AF647	Biolegend	#605555
	Anti-P-cFos-AF647	Biolegend	#631257
	Anti-CD34-PE	Invitrogen	#CD34-581-04
	Anti-CD34-eFluor450	Invitrogen	#48-0349-42
	Anti-CD45-APC	BD Pharmingen	#555485
	Anti-CD45-Pacific Orange	Invitrogen	#MHCD4530
Cell lines	K562	ATCC	#CCL-243
	LAMA-84	DMSZ	#ACC168
	HS-5	ATCC	#CRL-11882
	HS-27A	ATCC	#CRL-2946
Cell culture	IMDM	Biowest	#L0191
	RPMI	Biowest	#L0490
	Opti-MEM Reduced Serum Medium	Gibco	#11058021
	StemPro™-34 SFM (1X)	Gibco	#10639011
	IMDM no phenol red	Gibco	#21056023
	Penicillin-streptomycin solution (100X)	VWR	#392-0406
	L-glutamine 100X, 200 mM	Biowest	#X0550
	Fetal Bovine Serum (FBS), heat inactivated	Gibco	#10500064
	Trypsin	Biowest	#L0932
	Recombinant Human GM-CSF	Gibco	#300-03
	Recombinant Human SCF	Gibco	#300-07
	Recombinant Human Flt3-Ligand	Gibco	#300-19
	Recombinant Human IL-3	Gibco	#200-03
	Recombinant Human IL-6	Gibco	#200-06
Recombinant Human TPO	Gibco	#300-18	

Dyes and probes	DiD Vybrant™ DiD Cell-Labeling Solution	Invitrogen	#V22887		
	CMFDA Green	MedChemExpress	#HY126561		
	Cell Proliferation Dye eFluor™ 450	Invitrogen	#65-0842-90		
	eBioscience Fixable Viability Dye eFluor 455UV	Invitrogen	#65-0868-14		
	LIVE/DEAD Fixable Near-IR Dead Cell Stain Kit, for 633 or 635 nm excitation	Invitrogen	#L34976		
	7-AAD	BD Pharmingen	#559925		
	FITC Annexin V	BD Pharmingen	#556419		
	PE Annexin V	BD Pharmingen	#556421		
	Annexin V Binding Buffer 10X	BD Pharmingen	#556454		
	Propidium iodide (PI)	Sigma-Aldrich	#P4170		
	Wheat Germ Agglutinin (WGA) AF488	Invitrogen	#W11261		
Wheat Germ Agglutinin (WGA) AF647	Invitrogen	#W32466			
Other reagents	Corning® Matrigel® Basement Membrane Matrix	Corning	#356234		
	MethoCult™ H4434 Classic	Stemcell Technologies	#04434		
	MethoCult™ H4230	Stemcell Technologies	#04230		
	Corning® Fluoroblok™ Inserts with 8 µm pore size	Corning	#351152		
	ThinCert Tissue Culture Inserts with 1 µm pore size	Greiner Bio-One	#665610		
	EasySep™ Human CD34 Positive Selection Kit II	Stemcell Technologies	#17856		
	Lab-Tek Chambered Coverglass	Thermo Scientific	#155411PK		
	Collagen I, rat tail	Gibco	#A1048301		
	Coomassie Brilliant Blue R-250	Sigma-Aldrich	#1125530025		
	Paraformaldehyde 16%	Thermo Scientific	#043368.9M		
	Triton X-100	Sigma	#10789704001		
shRNAs					
Target	Clone	TRC number	Source	Target region	Identifier
Non-targeting	-	-	Sigma-Aldrich	-	#SHC202V
CD44	1	TRCN0000057567		CDS	#SHCLNV
	2	TRCN0000289308		CDS	
	3	TRCN0000289233		CDS	
	4	TRCN0000296191		CDS	
	5	TRCN0000308110		3'UTR	
Quantitative real-time PCR primer sequences					
Target	Forward primer		Reverse primer		
CD44S	5'TCGACTGTTGACTGCAATGC		5'AAGGTGGAGCAAACACAACC		
β-actin	5'GTGAAGGTGACAGCAGTCGGTT		5'GAAGTGGGGTGGCTTTTAGGAT		
18S rRNA	5'GCGCGCTAGAGGTGAAATTC		5'TTGGCAAATGCTTTCGCTC		
MMP2	5'TGGCAAGTACGGCTTCTGTC		5'TTCTTGTCGCGGTCGTAGTC		
MMP3	5'CAGTTTGCTCAGCCTATCCA		5'TCACATCTTTTCGAGGTCGT		
MMP9	5'GGGACGCAGACATCGTCATC		5'TCGTCATCGTCGAAATGGGC		
SERPINE1	5'ACCGCAACGTGGTTTTCTCA		5'TTGAATCCCATAGCTGCTTGAAT		
ITGB2	5'TTCGGGTCCTTCGTGGACA		5'ACTGGTTGGAGTTGTTGGTCA		