Legends of Supplemental Figures

Figure 1. Expression of cardiac-specific genes in H9C2-MR+ cells

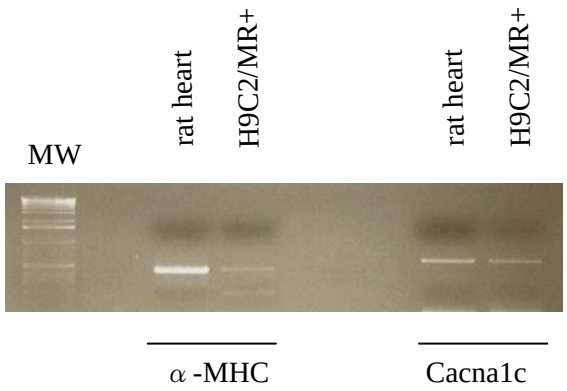
RT-PCR analysis was used to evaluate the expression of the Cacnac1 Ca channel (primers: sense: CCTGAAGCCAAGGGTCGGAT; antisense: GTTGCCAAACAGGCCTCCAG) and the alpha myosin heavy chain (primers: sense: ACAGCTGGGAGAAGGGGGTA; antisense: GTCGTCATTGGCACGGACTG). H9C2-MR+ cells express these two cardiac-specific genes indicating that they display properties of cardiomyocytes.

Figure 2. Expression levels of endogenous and transgenic MR or GR in MRcardio, GRcardio mice and their respective controls.

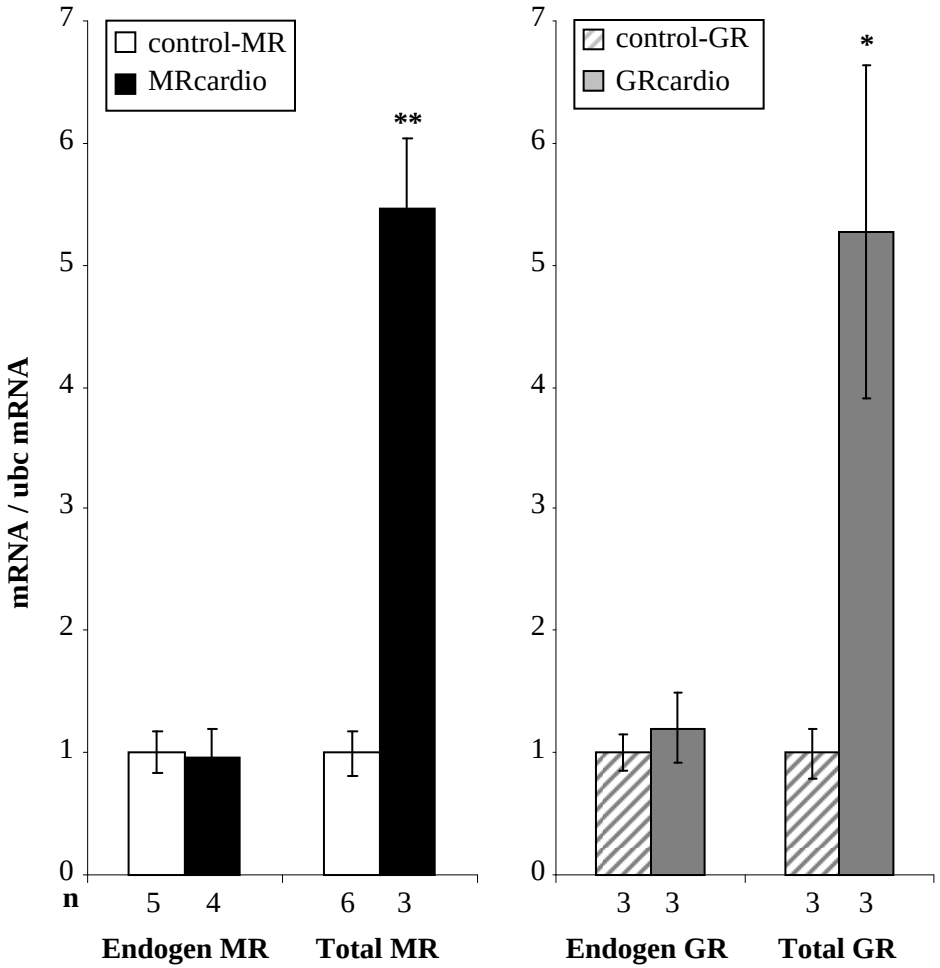
Real-time PCR analysis of cardiac mRNA of MR or GR in control and transgenic mice (ubc was used as reference gene). We used either primers specific for mouse MR (or GR) or primers common to endogenous and transgenic MR (or GR) to evaluate the level of receptor overexpression in MRcardio and GRcardio mice. The mRNA expression of cardiac MR (or GR) in MRcardio (or GRcardio) mice was about 5 fold higher than in their control littermates. Values in control mice were set as 1 for each gene, and fold changes are shown on the figure; data are provided as means ±SEM. n = 3-6 mice per condition. *, $p<0.05$, **, $p<0.01$ transgenic mice compared to their own controls (Mann-Whitney U test).

Figure 3. Real-time PCR analysis of four down-regulated genes: vascular endothelial growth factor (VEGF), pyruvate dehydrogenase (Pdhb), isocitrate dehydrogenase (Idh3b) and myeloid leukemia factor 1 (Mlf1). The genes were identified as down-regulated in the transcriptomic screening of MRcardio mice. Cardiac VEGF, Pdhb and Idh3b appear specifically down-regulated after MR (not GR) overexpression, while Mlf1 was down-regulated in both MRcardio and GRcardio mice. Ubc was used as reference gene. Values in control mice were set as 1 for each gene, and fold changes are shown on the figure; data are provided as means ±SEM. n = 3-6 mice per condition. *, $p<0.05$, **, $p<0.01$ transgenic mice compared to their own controls (Mann-Whitney U test).

SUPPLEMENTAL FIGURE 1



SUPPLEMENTAL FIGURE 2



SUPPLEMENTAL FIGURE 3

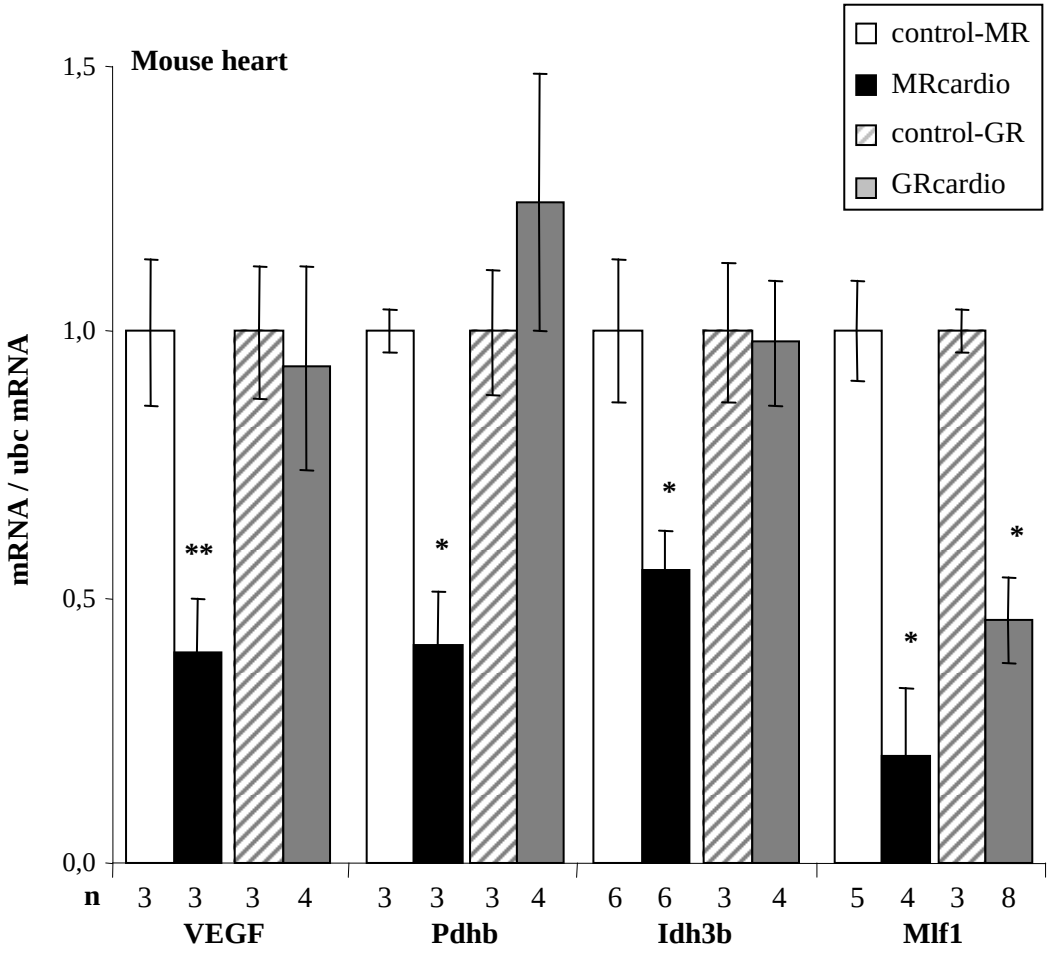


Table 1: primers sequences for real time PCR.

Rattus Norvegicus	**Forward (5'→ 3')**	**Reverse (5'→ 3')**
β-actin	TTCTACAATGAGCTGCGTGTG	CAGGTCCAGACGCAGGAT
SGK1	TGCTCGAAGTACCCTCACCTA	AGGGGTTGGCGTTCATAAGTT
ADAMTS1	CACGGCAGCGGTCTAAAGCAT	GGTGGAGAAGCGGCATTGCAAGT
PAI-1	CGCCTCCTCATCCTGCCTAAGT	CTGTGCCGCTCTCGTTCACCTC
RGS2	GAAGACCCGTTTGAGCTATTTC	TGAATGCAGCAAGCCCATATTT
Fkbp5	TCGACAAAGCCCTGGTGAA	AAAACCATAGCGTGGTCCAA
TNX	CGTGTTCGCCCAGTATGACTT	ATTGAGATTGGCGTAGTGACA
Serpina3	AGACAAGGGGACACAACTGG	TGAGATGCTAAGTGGGGAGAA
Troponin T3	GAAAAAGGCTCTGTCCTCCA	CAGAGTTCCTTGGCCTTGTC
Fibronectin1	TTATGACGACGGGAAGACCTA	CGTTCTCTGATGGTATCTCTGTGT
Collagen1a	GGGCAAGACAGTCATCGAAT	GGTGGAGGGAGTTTACACGA
Mus musculus	**Forward (5'→ 3')**	**Reverse (5'→ 3')**
ubc	AGCCCAGTGTTACCACCAAG	ACCCAAGAACAAGCACAAGG
S GK1	GCATGCAAACACGCTGAAGTT	ACGGACCCAGGTTGATTTGTT
ADAMTS1	AGTGGTGTGTCAGTGGCAAG	TTCTTTGGGACTGGGTTGTC

PAI-1	AGCCAACCACAGCTGAGCG	GGGCTGAAGACATCTGCATCC
RGS2	GAAGACCCGTTTGAGCTATTTC	TGAATGCAGCAAGCCCATATTT
Fkbp5	TCGACAAAGCCCTGGTGAA	AAAACCATAGCGTGGTCCAA
TNX	GTTCTCTGCGGCTAAACTGG	GATGCTGTCTGCCTTGTGTG
Serpina3	CATCCCTGTGGGAAGTCAGT	CTTTTGGGTGGAGGCAGATA
Troponin T3	GAAAAAGGCTCTGTCCTCCA	CAGAGTTCCTTGGCCTTGTC
Fibronectin1	CCGGTGGCTGTCAGTCAGA	CCGTTCCCACTGCTGATTTATC
Collagen1a	GGGCAAGACAGTCATCGAAT	GGTGGAGGGAGTTTACACGA
MRendogen	TCACATTTTTAACATGTGACGGC	GCTTTTCATCCAGAGGAACG
Total MR	GGCTACCACAGTCTCCCTGA	ACGTTGACAATCTCCATGTAG
GRendogen	TGCAGGAGTCTCACAAGACA	CATGTTGAGCGTGGTCATAA
Total GR	TGGGACTGTATATGGGAGAG	GGTTTGCAATGCTTTCTTCC
VEGF	AACGATGAAGCCCTGGAGTGCG	ACCGGGATTTCTTGCGCTTTCGT
Pdhb	TCGAAGCCATAGAAGCCAGT	AGGCATAGGGACATCAGCAC
Idh3b	TGGAACATGAGAGCGCCAAGGG	TGGACGGCTGTGACCTTGCT
Mlf1	AACCACCAAAGGTGTTCCAG	GCCACTCATCATCAAAAGCA

Table 2: List of cardiac genes that differ between mice overexpressing the glucocorticoid receptor (GRcardio) and their control littermates.

Symbol	Accession Number	Full Name	Fold
Up-regulated genes			
RTN4	NM_007008	reticulon 4	1.57
Gpx1	NM_008160	glutathione peroxidase 1	1.54
FST	M19481	follistatin	1.52
Hcfc1r1	NM_181821	host cell factor C1 regulator 1 (XPO1-dependent)	1.51
Sepr	NM_013759	selenoprotein R	1.48
Hspb7	NM_013868	heat shock protein family, member 7 (cardiovascular)	1.45
SNX26	AC002398	sorting nexin 26	1.45
CLIC5	NM_016929	chloride intracellular channel 5	1.44
Ndel1	NM_023668	nuclear distribution gene E-like homolog 1 (A. nidulans)	1.43
Ttid	NM_021484	titin immunoglobulin domain protein (myotilin)	1.42
SLC25A5	AF240003	solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 5	1.41
Enah	AK020248	enabled homolog (Drosophila)	1.39
PABPC1	X78709	poly(A) binding protein, cytoplasmic 1	1.39
PJA1	NM_022368	praja 1	1.39
CRYAB	NM_001885	crystallin, alpha B	1.38
RBM5	AF091263	RNA binding motif protein 5	1.38
RPL14	D87735	ribosomal protein L14	1.38
SERF2	AF320073	gastric cancer-related protein VRG107 mRNA, complete cds.	1.36
HSPB1	NM_001540	heat shock 27kDa protein 1	1.35
PDGFRB	NM_002609	platelet-derived growth factor receptor, beta polypeptide	1.35
FHL1	AF220153	four and a half LIM domains 1 protein isoform C (FHL1) mRNA, complete cds, alternatively spliced.	1.34
PGK1	NM_000291	phosphoglycerate kinase 1	1.34
PPP2CA	NM_002715	protein phosphatase 2 (formerly 2A), catalytic subunit, alpha isoform	1.34
Ddef1	NM_010026	development and differentiation enhancing	1.30
FHL1	NM_001449	four and a half LIM domains 1	1.29

FKSG14	NM_022145	leucine zipper protein FKSG14	1.29
GPR51	AF074483	G protein-coupled receptor 51	1.29
TIMP2	J05593	tissue inhibitor of metalloproteinase 2	1.29
SNRPN	NM_022805	small nuclear ribonucleoprotein polypeptide N	1.28
Csnk2a1	NM_007788	casein kinase II, alpha 1 polypeptide	1.27
SMPD1	M81780	sphingomyelin phosphodiesterase 1, acid lysosomal	1.27
Vcl	NM_009502	vinculin	1.27
	NM_134141	RIKEN cDNA 2810413N20 gene	1.27
EEF1G	NM_001404	eukaryotic translation elongation factor 1 gamma	1.26
KIAA0652	BC006191	KIAA0652 gene product	1.26
Gstm2	NM_008183	glutathione S-transferase, mu 2	1.25
SCNN1G	NM_001039	sodium channel, nonvoltage-gated 1, gamma	1.25
ARHB	NM_004040	ras homolog gene family, member B	1.23
Atox1	NM_009720	ATX1 (antioxidant protein 1) homolog 1 (yeast)	1.23
Defb1	NM_007843	defensin beta 1	1.23
GNAS	NM_000516	GNAS complex locus	1.23
Nmyc1	NM_008709	neuroblastoma myc-related oncogene 1	1.23
RAB7	X89650	RAB7, member RAS oncogene family	1.23
DAG1	U43512	dystroglycan 1 (dystrophin-associated glycoprotein 1)	1.22
Fln29	NM_172275	FLN29 gene product	1.22
GNB1	NM_002074	guanine nucleotide binding protein (G protein), beta polypeptide 1	1.22
Hig1	NM_019814	hypoxia induced gene 1	1.22
SCNN1A	NM_001038	sodium channel, nonvoltage-gated 1 alpha	1.22
V1re11	AY065510	vomeronasal 1 receptor, E11	1.22
Astn2	NM_019514	astrotactin 2	1.21
COL4A5	NM_000495	collagen, type IV, alpha 5 (Alport syndrome)	1.21
FOS	NM_005252	v-fos FBJ murine osteosarcoma viral oncogene homolog	1.21
Gata1	NM_008089	GATA binding protein 1	1.21
MBD1	AF120982	methyl-CpG binding domain protein 1	1.21

PFKFB3	NM_004566	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3	1.21
TENC1	AB028998	tensin like C1 domain-containing phosphatase	1.21
UBA52	NM_003333	ubiquitin A-52 residue ribosomal protein fusion product 1	1.21
Gpx3	AK002219	glutathione peroxidase 3	1.21
RPL15	XM_041875	ribosomal protein L15	1.20
	NM_029841	RIKEN cDNA 2510039O18 gene	1.20
Ywhaz	NM_011740	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide	1.19
FDFT1	NM_004462	farnesyl-diphosphate farnesyltransferase 1	1.18
SH3BGR	AJ239082	SH3 domain binding glutamic acid-rich protein	1.18
CCR4	AB023888	chemokine (C-C motif) receptor 4	1.17
EDAR	NM_022336	ectodysplasin 1, anhidrotic receptor	1.17
DSP	NM_004415	desmoplakin (DPI, DPII)	1.16
LAMR1	BC008867	laminin receptor 1 (ribosomal protein SA, 67kDa)	1.16
Miz1	NM_008602	Msx-interacting-zinc finger	1.16
MYOD1	NM_002478	myogenic factor 3	1.16
Down-regulated genes			
	AK016947	RIKEN cDNA 4933427E11 gene	0.51
Fhl2	NM_010212	four and a half LIM domains 2	0.53
Spp1	NM_009263	secreted phosphoprotein 1	0.54
Nnp1	NM_010925	novel nuclear protein 1	0.58
	AK018837	RIKEN cDNA 1700016D08 gene	0.59
Hint	AK002965	histidine triad nucleotide binding protein	0.60
Mlf1	NM_010801	myeloid leukemia factor 1	0.62
	AK013431	RIKEN cDNA 6720475J19 gene	0.65
	BC019948	Mus musculus cDNA clone MGC:28155 IMAGE:3983946, complete cds	0.65
FLJ10948	AK001810	hypothetical protein FLJ10948	0.66
Lef1	NM_010703	lymphoid enhancer binding factor 1	0.66
Ivns1abp	NM_054102	influenza virus NS1A binding protein	0.68
VAV3	NM_006113	vav 3 oncogene	0.68

SPOCK	NM_004598	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)	0.69
TNNI2	NM_003282	troponin I, skeletal, fast	0.69
Hirip5	NM_020045	histone cell cycle regulation defective interacting protein 5	0.70
	AK015221	RIKEN cDNA 4930428F12 gene	0.70
ARL6IP4	NM_018694	ADP-ribosylation-like factor 6 interacting protein 4	0.71
PDE3B	NM_000922	phosphodiesterase 3B, cGMP-inhibited	0.71
SERPINB6	NM_004568	serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 6	0.71
P4HB	J02783	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypeptide	0.72
KIAA0174	D79996	KIAA0174 gene product	0.73
TXNIP	S73591	thioredoxin interacting protein	0.73
	AY057808	Mus musculus chromosome 5, clone RP24-72E12, complete sequence	0.73
Fkbp4	NM_010219	FK506 binding protein 4	0.73
BRAP	NM_006768	BRCA1 associated protein	0.74
CDK5RAP2	NM_018249	CDK5 regulatory subunit associated protein 2	0.74
Ptma	NM_008972	prothymosin alpha	0.74
DKC1	NM_001363	dyskeratosis congenita 1, dyskerin	0.75
Gda	NM_010266	guanine deaminase	0.76
HNRPA1	NM_002136	heterogeneous nuclear ribonucleoprotein A1	0.76
Ccng2	NM_007635	cyclin G2	0.77
Jam2	NM_023844	junction adhesion molecule 2	0.77
NAP1	NM_016481	Nef associated protein 1	0.77
Prkci	NM_008857	protein kinase C, iota	0.77
SETDB1	NM_012432	SET domain, bifurcated 1	0.77
Tnip1	NM_021327	TNFAIP3 interacting protein 1	0.77
UBE4B	NM_006048	ubiquitination factor E4B (UFD2 homolog, yeast)	0.77
Tuba4	NM_009447	tubulin, alpha 4	0.77
CALM2	BC008437	calmodulin 2 (phosphorylase kinase, delta)	0.78
FLJ10276	NM_018045	hypothetical protein FLJ10276	0.78
FLJ13154	NM_024598	hypothetical protein FLJ13154	0.78

FLJ22060	NM_024612	hypothetical protein FLJ22060	0.78
PPM1B	NM_002706	protein phosphatase 1B, magnesium-dependent, beta isoform	0.78
Slc1a5	NM_009201	solute carrier family 1 (neutral amino acid transporter), member 5	0.78
Stk2	NM_009289	serine/threonine kinase 2	0.78
TEBP	NM_006601	unactive progesterone receptor, 23 kD	0.78
B4GALT7	NM_007255	xylosylprotein beta1,4-galactosyltransferase, polypeptide 7	0.79
SCN8A	NM_014191	sodium channel, voltage gated, type VIII, alpha polypeptide	0.79
SEMA3C	NM_006379	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3C	0.79
Bad	NM_007522	Bcl-associated death promoter	0.80
C14ORF133	NM_022067	chromosome 14 open reading frame 133	0.80
CLK3	AF033565	CDC-like kinase 3	0.80
Expi	NM_007969	extracellular proteinase inhibitor	0.80
HNRPDL	XM_053038	heterogeneous nuclear ribonucleoprotein D-like	0.80
SLC6A7	NM_014228	solute carrier family 6 (neurotransmitter transporter, L-proline), member 7	0.80
U2AF65	NM_007279	U2 small nuclear ribonucleoprotein auxiliary factor (65kD)	0.80
Aasdhppt	AK018191	aminoadipate-semialdehyde dehydrogenase-phosphopantetheinyl transferase	0.81
Dazap2	NM_011873	DAZ associated protein 2	0.81
FLJ22471	NM_025140	limkain beta 2	0.81
GCN5L1	NM_001487	GCN5 general control of amino-acid synthesis 5-like 1 (yeast)	0.81
Hand1	NM_008213	heart and neural crest derivatives expressed transcript 1	0.81
RNF34	NM_025126	ring finger protein 34	0.81
RYR3	NM_001036	ryanodine receptor 3	0.81
C6ORF9	NM_022107	chromosome 6 open reading frame 9	0.82
CGI-110	NM_016047	CGI-110 protein	0.82
PTTG1IP	NM_004339	pituitary tumor-transforming 1 interacting protein	0.82
CRLF1	NM_004750	cytokine receptor-like factor 1	0.84
Ethe1	NM_023154	ethylmalonic encephalopathy 1	0.84
OSBPL2	AF392447	oxysterol binding protein-like 2	0.84
Timm22	NM_019818	translocase of inner mitochondrial membrane 22 homolog (yeast)	0.85

	BC019736	expressed sequence AI790298	0.85
G6PD	L44140	glucose-6-phosphate dehydrogenase	0.86

Table 3: Common genes identified by microarrays in the heart of mice overexpressing the mineralocorticoid receptor (MRcardio) or the glucocorticoid receptor (GRcardio).

Symbol	Accession Number	Full Name	Fold MR	Fold GR
Up-regulated genes				
Gpx1	NM_008160	glutathione peroxidase 1	1.42	1.54
Gpx3	AK002219	glutathione peroxidase 3	2.03	1.21
Sepr	NM_013759	selenoprotein R	2.77	1.48
Down-regulated genes				
Tuba4	NM_009447	tubulin, alpha 4	0.68	0.77
Mlf1	NM_010801	myeloid leukemia factor 1	0.41	0.62
SEMA3C	NM_006379	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3C	0.55	0.79
Fkbp4	NM_010219	FK506 binding protein 4	0.57	0.73