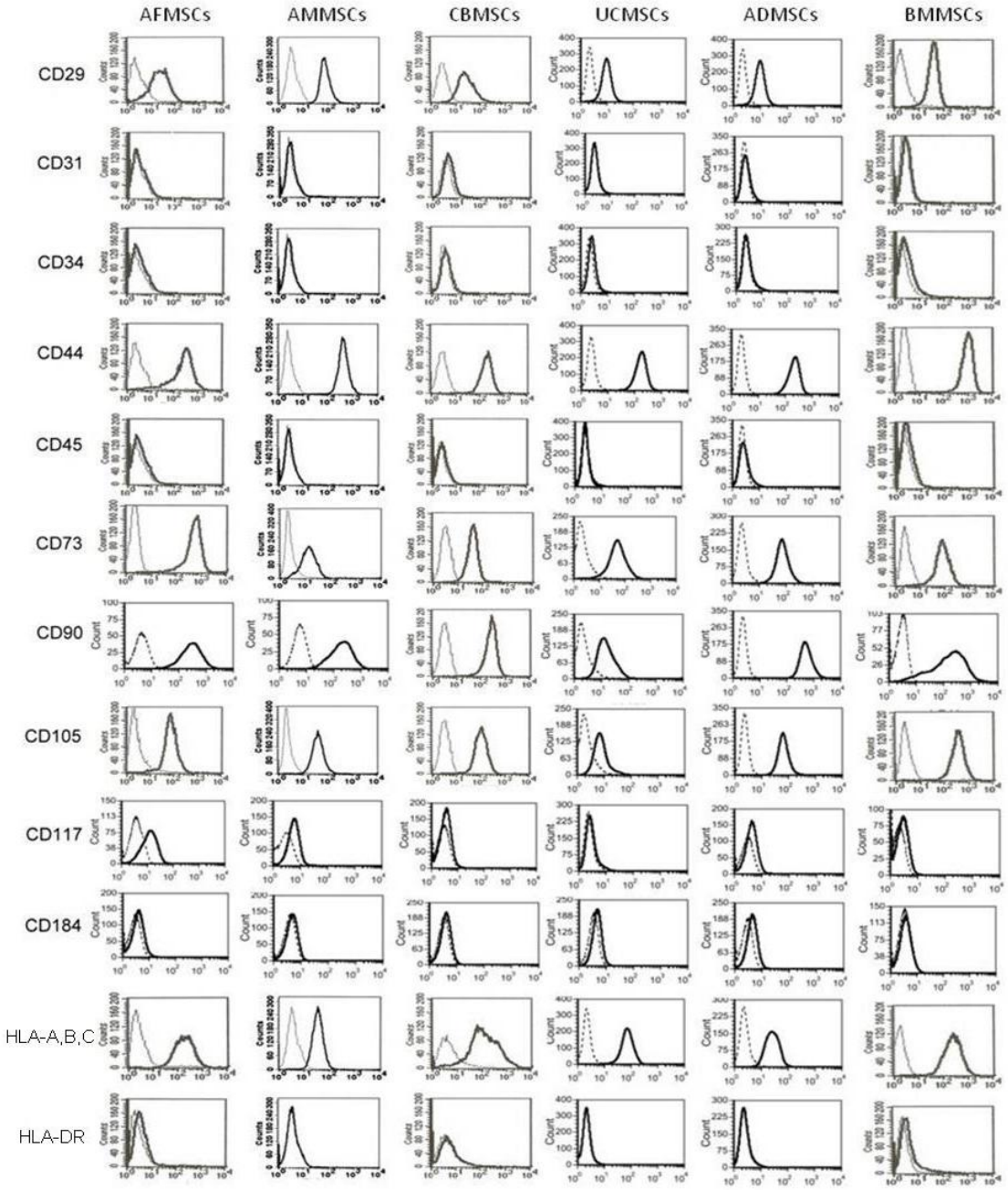
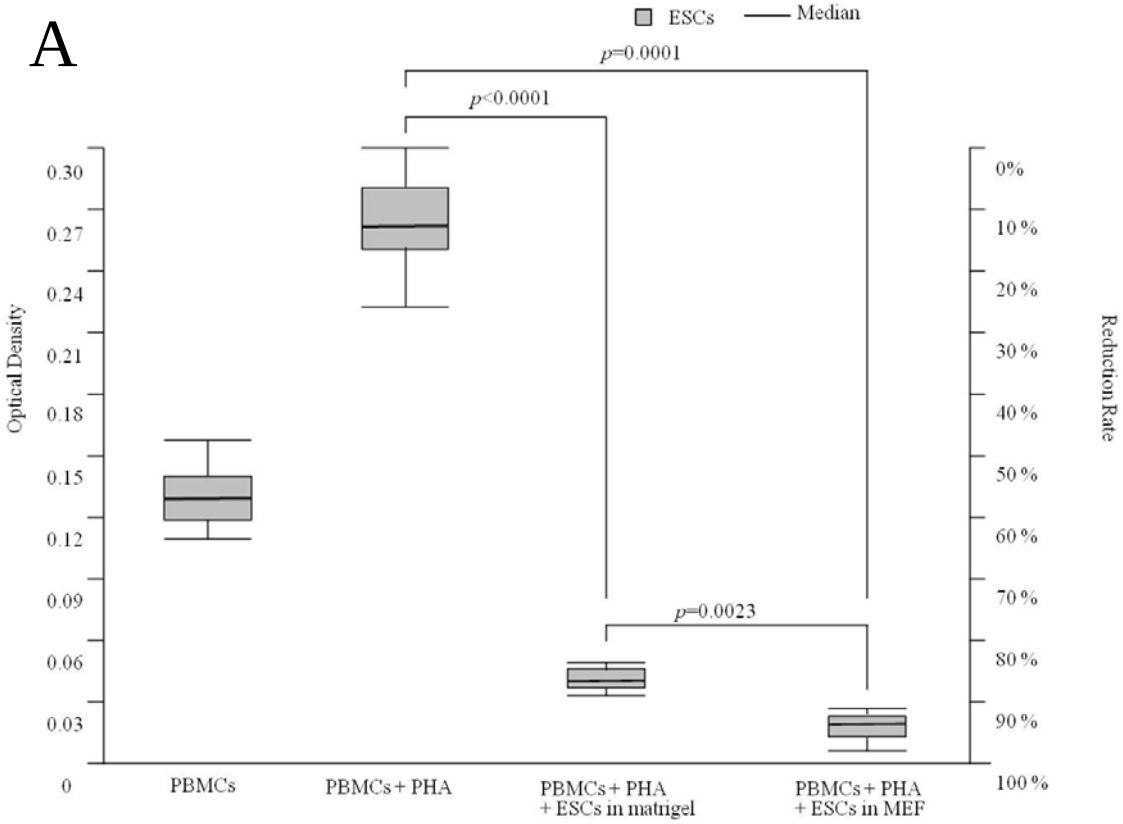
SUPPLEMENTAL DIGITAL CONTENT – TP202670

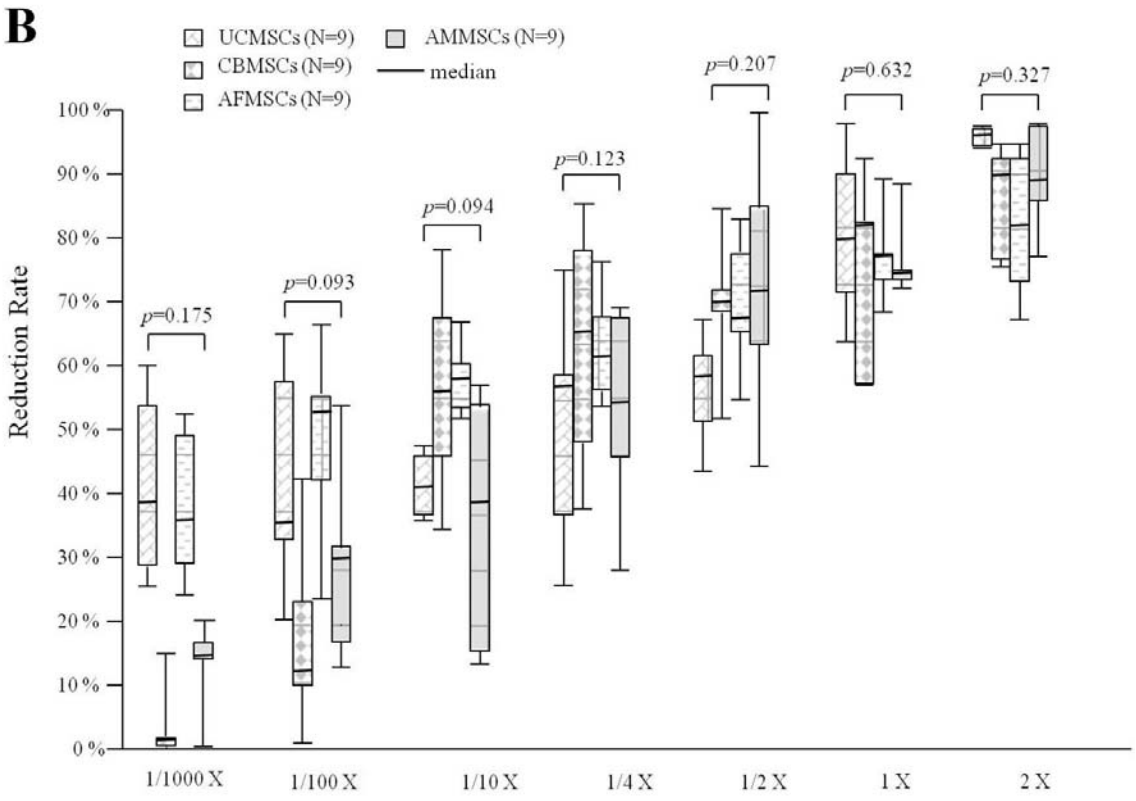
SDC, FIGURE 1. The phenotypic profile of fetal-type MSCs and adult-type MSCs



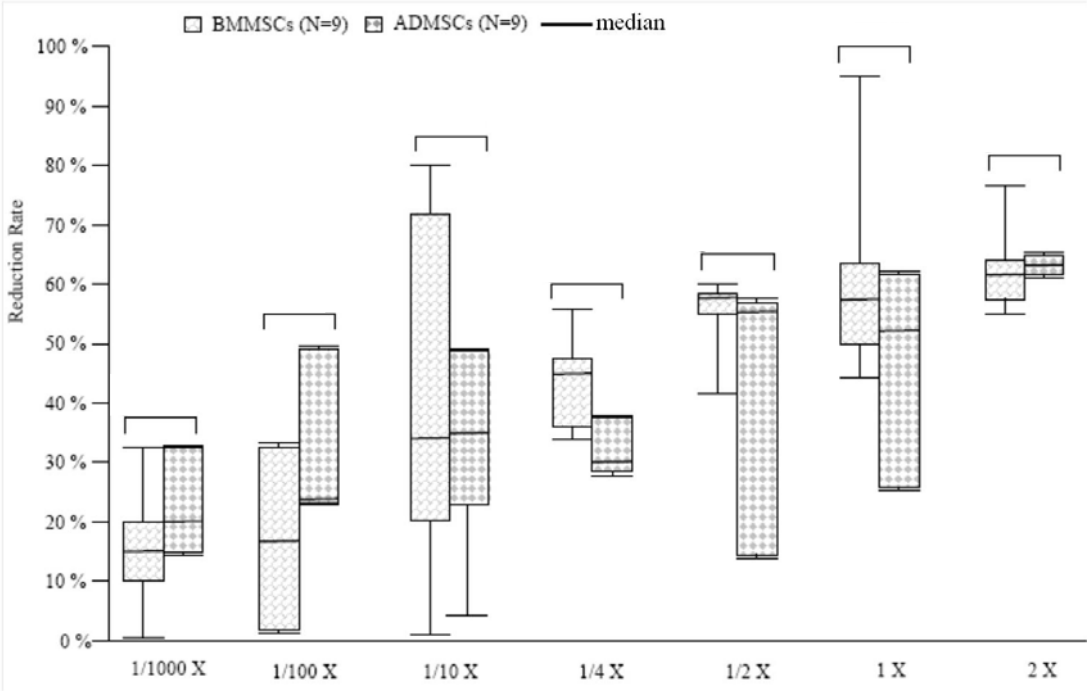
SDC, FIGURE 2. Suppressive effects on PBMCs of ESCs, fetal-type MSCs, and adult-type MSCs. (A) ESCs, whether previously cultured under feeder cell-free conditions (on Matrigel-coated plates) or with feeder cells, exhibited significant suppressive effects on PBMC proliferation. The ESCs previously cultured with feeder cells were observed to have significantly greater suppressive effects than those previously cultured under feeder cell-free conditions. ***$p<0.001$. (B) All 4 kinds of fetal-type MSCs were found to inhibit the proliferation of PBMCs in a dose-dependent manner. No significant differences were observed in the suppressive effects on PBMCs among the 4 kinds of fetal-type MSCs at varied dosages. (C) ADMSCs and BMMSCs both inhibited PBMC proliferation in a dose-dependent manner. There were no significant differences for inhibition of PBMC proliferation between ADMSCs and BMMSCs at varied dosages.



SUPPLEMENTAL DIGITAL CONTENT – TP202670



C


BMMSCs (N=9)
ADMSCs (N=9)
median
Reduction Rate
100 %
90 %
80 %
70 %
60 %
50 %
40 %
30 %
20 %
10 %
0 %
1/1000 X
1/100 X
1/10 X
1/4 X
1/2 X
1 X
2 X

SUPPLEMENTAL DIGITAL CONTENT – TP202670

SDC, TABLE 1. Of 31,099 microarray genes analyzed, (A) 260 up-regulation genes (>three-fold change) and (B) 699 down-regulation genes (>three-fold change) were found among ESCs, fetal-type MSCs and adult-type MSCs.

SDC, TABLE 1 (A) 260 up-regulation genes (>three-fold)

F11R	RAB11FIP1	KHDRBS3	truncated at 128	CD84	GUCA1A	GNA14	KLF5
CD24	GPR37	DCX	characters>	ABHD9	SPINT1	DHCR24	SLC25A13
CD24	DPPA4	TFAP2C	HDAC9	DLK1	KCNH1	IDO1	ZNF232
CDH1	GPC4	GATA3	NPPB	D4S234E	TNNT1	CCR9	CXCL14
AXL	ZNF33B	GPC4	CCND2	---	SLC29A1	RASL11B	SEPHS1
CD24	RABL5	GYG2	GARNL4	TIMP4	MREG	ACTC1	ARID3A
GATM	POU5F1 ///	CD24	FABP4	VASH2	GART	RARRES2	KIAA1598
UCP2	POU5F1P1 ///	FZD5	IMPA2	PDPN	PLSI	ASNS	CA11
CADM1	POU5F1P3 ///	SERPINB9	SALL2	PCDH8	NBLA00301	APOE	SLC5A6
DBR1	POU5F1P4	TOX3	GLDC	MYCL1	GCNT2	SLC16A1	IPW
TPD52	TAF1	PROZ	GATM	CUGBP2	SERPINB4	RAD51	AP1G2
PBXIP1	CXCL5	SCG3	HHIPL2	PIPOX	GPRC5B	CORO2A	CDC6
TPD52	MMP23A ///	TOX3	CNTNAP2	MAP7	CTSL2	ORC1L	NES
L1CAM	MMP23B	UPP1	NEBL	PDK3	ARID3B	FGFR2	PDLIM1
TUBB2B	SFN	POU5F1P3	OLFM1	KRT7	SLC2A3	MRS2	EGLN3
NMT1	FGF13	PKNOX1	---	HIC2	TMEM97	DCLK1	DTNA
CD24	SPG20	LCK	CRMP1	UTF1	SEMA4D	FKBP1B	RAMP2
TAC1	CYP26A1	OCLN	SFN	KCTD14	VSNL1	CDC6	MAP7
EDNRB	LEFTY1	EDNRB	ETV4	STX3	PTPRZ1	CLDN10	RFWD3
TDGF1 ///	EPCAM	---	---	MRS2	CDT1	PFAS	SLC39A8
TDGF3	SCNN1A	IL21R	HIC2	C1orf106	TOX3	SEPHS1	TMEFF1
ANXA3	SNX10	CD24	SOX3	STX3	GABRG2	F11R	SNCA
DSG2	ADD2	HAND2	PCYT1B	AP1M2	CALB1	DCHS1	SLC9A3R1
GUCA1A	GATA3	QPRT	NELL2	ICA1	NSUN6	RABGAP1L	CHRNB3
GPRC5C	VSNL1	PCDHA1 ///	TMEM97	PLAC8	PAIP2B	MYCN	CAPN6
ARNTL	FAM65B	PCDHA10 ///	CXADR	TBC1D30	40792	LECT1	EXPH5
RAB11B	SLC6A15	PCDHA11 ///	CKB	KIF5C	GABRB3	E2F5	BCKDHB
CGB /// CGB5 ///	CRABP1	PCDHA12 ///	RBM35A	MAP3K9	FAM149A	NTS	POLD1
CGB7 /// CGB8	NEFL	PCDHA13 ///	RBM47	LOC100134089	SLC16A1	PHC1 /// PHC1B	WWOX
NLGN4X	LHX1	PCDHA2 ///	ZNF589	/// PPP2R3B	LITAF	TM7SF2	
PDPN	CALB1	PCDHA3 ///	KRT8	GYG2	PTBP2	MBD2	
SCYL3	LITD1	PCDHA4 ///	CYCS ///	DLGAP1	ZNF3	PPP2R1B	
CUGBP2	FOXO1	PCDHA5 ///	CYCSP52	CD55	AASS	GNAS	
TPD52	SPON1	PCDHA6 ///	---	OGFRL1	CLDN7	DIAPH2	
DNMT3B	RAB38	PCDHA7 ///	DPYSL4	LATS1	CDH3	SH3GL2	
TBC1D22A	GPR143	PCD...<Preview	CXCR7	NFATC3	KLF5	CNTNAP2	

SDC, TABLE 1(B) 699 down-regulation genes (>three-fold)

—	—	PCDHGA3 ///	SYNC	OR1EL	—	LRRC14	CRHR1	NID2	IL6ST	RHAG	CACNG5	CCDC68	TM4SF1	///
CRHR2	NR3F2	PCDHGA4 ///	MT4	CABP2	CDH11	ENG	PDC	TIGD1L	—	ADAM22	PPP1R3A	—	CDY1	LOC100127855
—	CSN3	PCDHGA5 ///	NCR1	TK2	DNAJB4	TREML1	KCNV2	FAM43B	PTPN12	LOC100133866	PLA2G4A	IFNA10	IHH	3 ///
CPH	RPL35A	PCDHGA6 ///	AHI1	CYP26A1	—	CPB2	IRGC	TGFBR2	STEAP4	2 /// RPS4Y1	ACVR1B	BGN	ASCL2	LOC100128985
TTC3	DPYD	PCDHGA7 ///	NTRK2	ADAMDEC1	NRN1	GABRA6	CD4	SSX1	SLC35A4	—	EDA	AGBL3	MBTD1	2 ///
EPS8	ITFG2	PCDHG...	ANGPTL	CEACAM7	—	ARL14	SERPIND1	KIAA1245 ///	—	ABI2	COL5A1	GBP1	FN1	LOC100131084
GPR17	ACR ///	<Preview	UMD1	CTBS	CYP1B1	SERPINB2	SYCP1	NBPF1 ///	ESR3	THBS2	LOC100127891	ADAM17	—	5 ///
DSC1	LOC645529	truncated at	COL14 ///	IFNA8	SOCS5	INHBA	—	NBPF10 ///	CASP4	PLAGL1	8 /// SNTG1	—	PHF2	LOC388401
C9orf61	C10orf81	128	COL15	—	—	IL1RN	PLSCR4	NBPF11 ///	ENG	LOC390012	SLC4A4	IL8	PTP5D	///
—	MS4A6A	<characters>	ORAI2	CALML4	SCARA3	TTC9	MYO5B	NBPF14 ///	RAGE	AHR	SULT2A1	MLANA	KRTAP1-3 ///	LOC441396
H2AFY	—	LTBP1	COL4A4	CRYBA1	CNR1	GUPR1	IL33	NBPF15 ///	RAB40A	NAGLU	UNC93A	PTX3	LOC728951	///
IBTK	MED14	CRIM1	—	LOC644213	EDNRA	ZNF442	ANKH	NBPF20 ///	—	HOXB2	GRM7	DCN	COL10A1	LOC641909
TPD52	—	PCDHGA1 ///	ZNF835	ARHGAP29	PDE8DP	FUT6	CEACAM8	NBPF3 ///	HTRA1	—	—	PDGFRA	KIAA1655	///
COL3A1	NTSE	PCDHGA10 ///	LBX1	C10orf116	BTF3	TSHR	NPAS2	NBPF9 ///	CA12	—	ADAM12	C4orf34	MGP	LOC646346
SCUBE1	SOX5	PCDHGA11 ///	PCDHGA12 ///	COPZ2	GRM7	GPR1	—	RP11-842.2	ARHGAP26	IUNB	KCNK2	—	MEOX2	/// LOC72...
SLC26A3	ADAM9	PCDHGA12 ///	PCDHGC3	IFI44	GLRA3	ALDH8B2	TMC5	RBPMS	DAB2	NR4A2	LPAR...	—	RGS12	<Preview
GFI1	IT8A10	PCDHGA2 ///	SIDT1	ESM1	C7orf54	DNAJB4	CDH11	NR2F2	—	—	FPR1	LOC100133023	—	truncated at
BHLHB41	CLEC11A	PCDHGA3 ///	KCNA2	FAM159A ///	CRYBA2	NUCB2	FRMPD4	SPOCK3	SEMA3C	PAX8	UGT2A1 ///	3 ///	—	128
KLHL29	PTPN22	PCDHGA4 ///	DOCK10	FAM159B	SLC4A4	ASPH	CCL2	NLRP3	—	PAX4	UGT2A2	LOC399804	GAD2	characters>
CFLAR	ADAM12	PCDHGA5 ///	CYP3A43	SOX9	MBNL1	BCL2A1	C4orf18	COL13A1	PDE8C	—	ALPP	SPATA1	DCN	—
CHODL	ALB	PCDHGA6 ///	ZMYND10	EEA1	TAT	—	SCN11A	WNT5A	GLI2	DAPP1	—	ATXN3	—	DCN
MMP12	DAZ1 /// DAZ2	PCDHGA7 ///	GNG11	LOC51145	GPR83	AGTR2	XYLB	HPSE2 ///	IGFBP3	LOC146057	—	TRA@ ///	—	TIMM17A
COPG1	/// DAZ3 ///	PCDHG...	PLOD2	IL6ST	MS4A2	IFI16	HOXD3	LOC100133389	HGF	///	LY96	TRAV17 ///	RGS4	RUNX1
GAGE1 ///	DAZ4 ///	<Preview	LOXL1	PLA2R1	GPR22	POSTN	SYNE1	5'	MYH11	LOC400852	G6PC	TRAV20 ///	—	HGF
GAGE12F ///	LOC732447	truncated at	—	SNED1	DAB1	FMO3	IL7	ALDH6A1	GSTA1	///	—	TRD@	DDX3Y	—
GAGE12G ///	ZNF280D	128	DAB2	VNN1	MDFIC	PDZD7	TAS2R3	FGF7	CTNNA3	LOC439992	HSD ///	ATG3	CYP4B1	ITGB1
GAGE1H ///	VCAN	characters>	SPTLC2	BACH	CXCL2	—	FAM5C	RSI	CYP4F2 ///	///	LOC100132555	—	EIF4G2	COL3A1
GAGE1J ///	ALLC	IT9A4	VGLL3	BGN	PZP-LV10	IGHG1	—	IL12B	CYP4F3	LOC643892	2 ///	NRP1	RGS4	POSTN
GAGE2A ///	SLC6A20	MORC1	APOLD1	PCDHGA1 ///	PCSK2	CXCT1	—	KLF9	ZEB1	///	LOC727722	BTN3A3	IL8	IGFBP1
GAGE2B ///	AIM1L	CRYAB	RPIL3S	PCDHGA10 ///	TH	DARC	PDE8DP	—	PRKD1	LOC646527	COL5A1	FGF14	C14orf143	C11orf1
GAGE2C ///	CYP3A43	HOXB13	GPR98	PCDHGA11 ///	RNF6	LAX1	KRT20	ADAMTS1	—	/// RPS3A	PLA2G5	LUM	SCGB2A2	RASAL2
GAGE2E ///	RAB7A	EFEMP1	HOXD10	PCDHGA12 ///	CLTC	KRTAP5-8	BBS9	IGJ	—	GBP1	KIAA1199	VIP	EIF1AY	—
GAGE4 ///	LGSN	BOK	RNF17	PCDHGA2 ///	ZNF574	AQP4	IAPP	—	SMR3A ///	NUP54	IFI16	SLC14A1	RPL1	ITGB1L
GAGE5 ///	KCNJ1	TGFBR2	—	PCDHGA3 ///	ASPH	WNT5A	IMPG1	—	SMR3B	BPY2	SNTB1	PRRX1	—	TLL2
GAGE6...	YBX1 ///	POU1F1	SYNPO	PCDHGA4 ///	—	LOC100134417	TRPM1	—	CA12	—	MVP	—	—	COL3A1
<Preview	YBX1P2	LRP5L	CCDC102B	PCDHGA5 ///	CLIJ	0 /// POU6F2	MYH4	ABHD6	—	NTRK2	—	VB6PC	—	CFH /// CFHR1
truncated at	MSMB	SNED1	GUCY1A2	PCDHGA6 ///	IFNA4	FLJ21511	PTPN20A ///	—	LOC100130222	AVPR1A	SRP72	CYP3A7	C11orf67	LOC100127997
128	PSOV1	EMILIN1	COL8C12	PCDHGA7 ///	GIPR	LIF	PTPN20B	CA12	4 /// UTY	C6orf57	FBN1	CALD1	—	5 ///
characters>	TFPI	SLC13A1	—	PCDHG...	CDKN2C	AMY1A ///	—	C6orf103	FCN3	ENPEP	—	RAG2	SIGLEC8	LOC284393
COL14A1	—	PRDX2	ZMYM2	<Preview	PTPRC	AMY1B ///	—	SOCS5	OPRM1	CCPG1	ANPEP	LOC730092	—	///
CA12	ADRA1A	SULF1	CSHL1	truncated at	NEK7	AMY1C ///	IGHG1	ADH1B	KLF2	LOC57399	ATP2B3	CXCR1	KRT12	LOC285176
MAPREL	MIA2	STATH	COL14A1	128	COL5A1	AMY2A ///	TTC9	KIDINS220	WWTR1	LXN	PRR16	HSD3B1	DCN	///
ZNF81	PSD3	RH08TB3	KIAA0087	characters>	SERPINB13	AMY2B	RIN2	NR4A2	FGL2	NR2F1	IFI16	SP100	ANXA10	LOC644937
CNGB1	RGS1	CYP2C9	FL2	SCGB1D2	TENC1	—	COX7A1	BTN3A2 ///	EDA	MYCNOS	ACOXL	ADFP	RUNX1 ///	/// RPL10
SMARCA2	NAV3	RP11-	LOC727867	—	—	IL6	—	BTN3A3	GLRB	EIF1AY	PLAG...1	LOC100133577	SH3D19	SRGN
GAD2	GRIN2A	138L21.1	///	PHF14	CNKSR2	C14orf105	—	PLN	SLC16A4	PLAGL1	CD36	2 ///	ERBB3	MMP1
ENTPD4 ///	AFM	LOX	LOC729501	FZD1	TNP2	—	—	EDNRA	SLC25A31	BDNF	HLF	LOC650293	HLA-DQB1	COL3A1
LOXL2	DKFZP564C139	EPS15L2	///	MYB	KCTD12	NFL	FN1	SPRR1A	IOCK	BGN	VCAM1	/// OR7E47P	—	—
DKK1	6	EPHA3	LOC729953	—	—	HR44	IGFBP7	—	KDSR	FAM13C1	IFNA21	/// UNC93B2	VIPR2	ABCA8
APOC3	SEMA3C	MGC4859	/// ZNF834	EPB42	RAB27B	TRA@ ///	—	PDE10A	SPOCK1	ISLR	DLC1	ADAMTS20	—	SRGN
TGFBI	TEP1	CSHL1	PTGER3	RAB39AP2	IGFBP3	TRAJ17 ///	PARS	DR1	IGFL	AQP9	C6orf1...	—	RGS4	
IL17A	GPLD1	DOPEY2	NDP	C20orf117	DUOX2	TRAV20 ///	GNAT3	SLC17A2	LRRC17	ILVBL	DIRAS3	PDE5A	LAMA4	
GLRA3	PCDHGA1 ///	SBNO1	RRBP1	ERAP2	MSR1	TRD@	C6orf54	ZEB1	PRSS7	COL5A2	—	—	COL5A3	
LTBR	PCDHGA10 ///	IFNA17	BTN3A3	SYNE1	NR2F2	GRIA3	IFNA5	MBD2	COL4A3	MBNL1	XIST	TM4SF1	APOBEC3B	
MLF1	PCDHGA11 ///	CCDC92	KIAA1659	IL6ST	ANGPTL3	PIK3R4	STAP1	ESR1	CLEC2D	FBN1	TSPY1/5	NR4A2	FAP	
HLA-DOA	PCDHGA12 ///	LOC441258	SERPINB13	TTC9	LPAR1	KCNJ13	LOC283070	SV2B	FLJ21369	MTMR7	TM4SF1	DNAH9	IL1R1	
ASPH	PCDHGA2 ///	DLC1	—	—	SNX13	—	IL6ST	WISP3	ARID5B	ACE	ITGBL1	CCL8	hCG_2015956	