

Gene expression profiles of human mesenchymal stromal cells derived from Wharton's jelly and amniotic membrane before and after osteo-induction using NanoString platform

Vun Vun Hiew, Haselamirrah Mohd Akhir, Peik Lin Teoh*

Biotechnology Research Institute, Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysia

*Corresponding author: peiklin@ums.edu.my

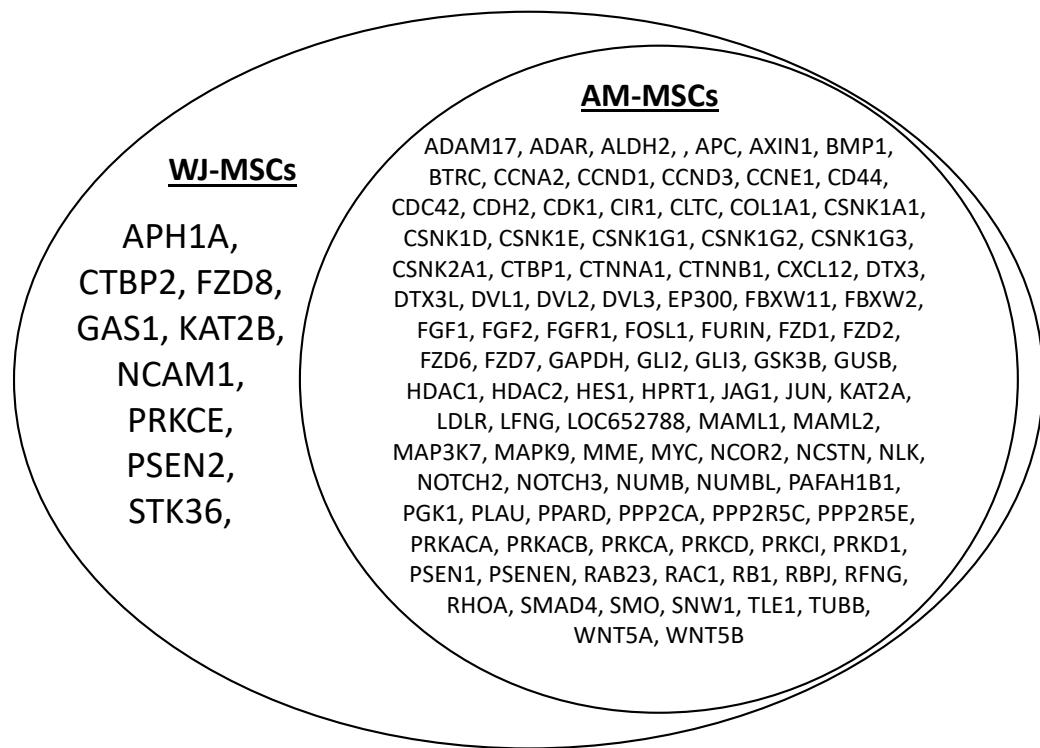


Figure S1. Genes detected in AM- and WJ-MSCs under basal condition.

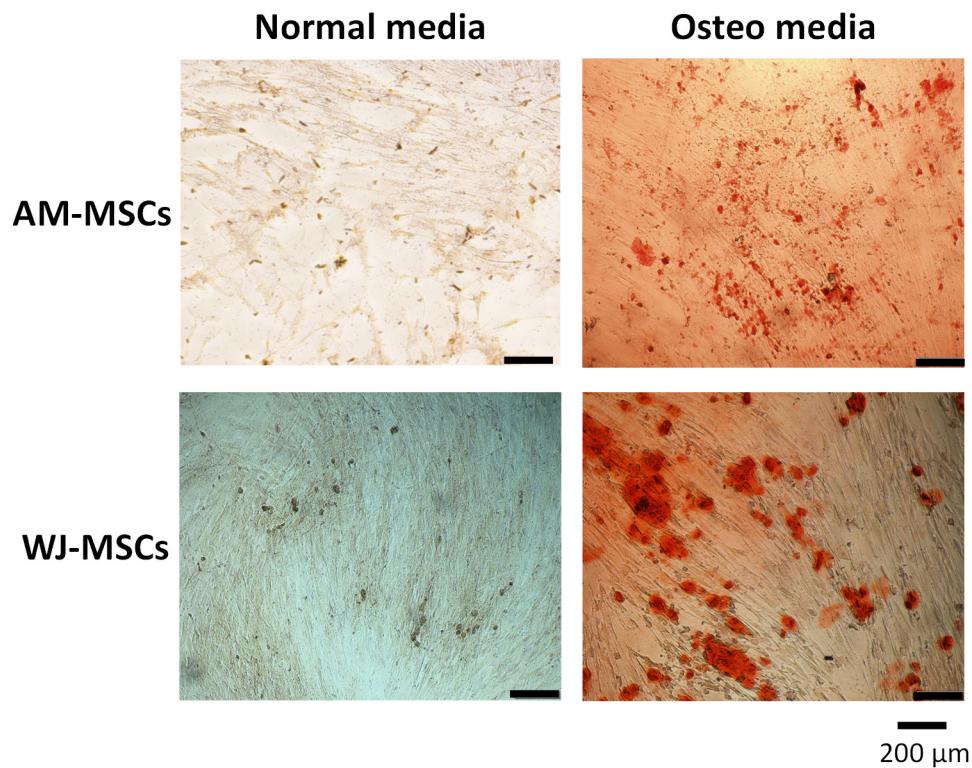


Figure S2. Osteogenic differentiation of the isolated AM- and WJ-MSCs. AM- and WJ-MSCs were stained with Alizarin Red. Scale bar = 200 μm .

Table S1. Fold change of genes upregulated and downregulated upon osteo-induction in AM- and WJ-MSCs.

AM-MSCs				WJ-MSCs			
Upregulated		Downregulated		Upregulated		Downregulated	
ADAM17	2.25	HES1	1.52	CD44	-1.19	ADAM17	1.03
ADAR	2.15	HPRT1	1.08	CDH2	-1.81	PGK1	1.57
ALDH1A1	6.50	IGF1	7.55	CDK1	-1.32	PPARG	2.30
ALDH2	2.68	JUN	2.02	COL1A1	-1.24	PPP2R5C	1.35
APC	2.85	KAT2A	1.79	CXCL12	-3.04	AXIN1	1.00
AXIN1	2.32	KAT2B	2.05	DVL1	-1.18	PRKACB	1.07
BMP1	1.74	LDLR	1.40	FGF1	-3.47	BMP1	2.29
BTRC	1.73	LOC652788	1.04	FGF2	-1.06	BTRE	1.35
CCNA2	1.54	MAML1	2.17	FZD7	-1.17	CCND1	1.16
CCND1	2.00	MAML2	1.49	GUSB	-1.02	CCND2	1.35
CCND2	8.47	MAP3K7	1.32	ISL1	-1.15	PSEN1	1.77
CCND3	4.73	MAPK9	1.38	JAG1	-1.01	CCNE1	1.42
CCNE1	1.84	MME	2.46	KRT15	-7.41	CDC42	1.08
CDC42	1.69	MYC	3.60	LFNG	-4.78	CREBBP	1.68
CIR1	1.50	NCOR2	1.26	NCAM1	-1.78	CSNK1D	1.25
CREBBP	3.66	NCSTN	1.22	NOTCH3	-1.66	CSNK1E	1.03
CSNK1A1	1.28	NLK	1.95	RAB23	-5.46	CSNK1G1	1.00
CSNK1D	1.51	NOTCH2	1.09	RFNG	-1.17	CSNK1G2	1.29
CSNK1E	1.28	NUMB	1.62	WNT5B	-1.22	CSNK2A1	1.06
CSNK1G1	2.29	NUMBL	1.12			CTNNB1	1.22
CSNK1G2	1.95	PAFAH1B1	1.85			DTX4	4.80
CSNK1G3	1.98	PGK1	1.03			DVL2	1.10
CSNK2A1	1.48	PLAU	1.48			DVL3	1.53
CTBP1	1.97	PPARD	1.42			EP300	1.28
CTBP2	1.98	PPARG	4.12			FBXW11	1.39
CTNNA1	1.14	PPP2CA	2.37			FBXW2	2.05
CTNNB1	2.22	PPP2R5C	1.71			FGFR1	1.40
DLL3	1.42	PPP2R5E	1.65			FURIN	1.44
DLL4	4.74	PRKACA	1.19			FZD1	2.40
DTX3	1.45	PRKACB	1.20			FZD2	1.36
DTX3L	4.29	PRKCA	1.02			FZD6	1.59
DTX4	2.66	PRKCD	1.05			GAS1	6.56
DVL2	1.69	PRKCE	1.96			GSK3B	1.66
DVL3	1.57	PRKCI	1.05			HDAC1	1.29
EP300	2.73	PRKD1	2.25			IGF1	2.08
FBXW11	1.67	PSEN1	2.13			KAT2B	2.13
FBXW2	1.83	PSEN2	2.27			LDLR	1.76
FGFR1	1.45	PSENEN	2.11			LOC652788	1.03
FOSL1	1.58	RAC1	1.50			MAML1	1.09
FURIN	1.17	RB1	1.79			MAML2	1.67
FZD1	2.96	RBPJ	1.28			MAP3K7	1.18
FZD2	1.68	RHOA	1.08			MAPK9	1.24
FZD6	1.72	SMAD4	1.74			MME	9.14
FZD8	6.48	SMO	1.09			NCOR2	1.59
GAS1	16.34	SNW1	2.00			NCSTN	1.17
GLI2	1.65	STK36	1.34			NLK	1.03
GLI3	1.55	TLE1	2.92			NOTCH3	2.06
GSK3B	1.90	WNT2B	1.09			NUMB	1.11
HDAC1	1.44	WNT5A	2.94			NUMBL	1.29
HDAC2	1.68					PAFAH1B1	1.08