Supplemental Figure Legends

Supplemental Figure 1. Characterization of CA-MSC. (A) Karyotype analysis for the Pt63 CA-MSC cell line, demonstrating a normal female 46, XX karyotype. **(B)** qPCR demonstrating the media dependent expression of CK7 in control and CA-MSC. **(C)** Percentage of cells expressing the specified surface antigens as determined by FACS. **(D)** FACS analysis demonstrating that CA-MSC and control MSC express CD105 with different signal intensities.

Supplemental Figure 2. CA-MSC Promote Ovarian Tumorigenesis more than Control MSC. (Ai and ii) Tumor growth curves and weights of SKOV3 cells grown alone or with the indicated MSC. SKOV3 (n=25), SKOV3+Control Adipose MSC (n-10), SKOV3+CA-MSC (n=5 each). Results are representative of 2 independent experiments. **(B)** Tumor growth curves for the SKOV3 cell line grown either alone or in combination with increasing ratios of CA-MSC as indicated. N=5 animals per group in two independent experiments. There is no statistically significant difference between growth rates of tumors with different ratios of MSC. All groups with MSC were statistically significantly different from SKOV3 alone $p<0.05$. ** indicates statistically significant ($p<0.01$) versus control MSC+tumor cells and tumor cells alone. * indicates statistically significant ($p<0.05$) versus tumor cells alone.

Supplement Figure 3. Histologic analysis of SKOV3+CA-MSC tumors. (A) CD31 immunohistochemistry demonstrating the microvascular density of the indicated tumors. **(B)** Oil red O and Masson's Trichrome stains confirming the presence of adipocytes and pre-bone (respectively) in SKOV3+CA-MSC tumors from two independent patient CA-MSC cell lines. **(C)** qRT-PCR of indicated tumors for human adipose and bone specific differentiation markers. * indicates $p<0.05$.

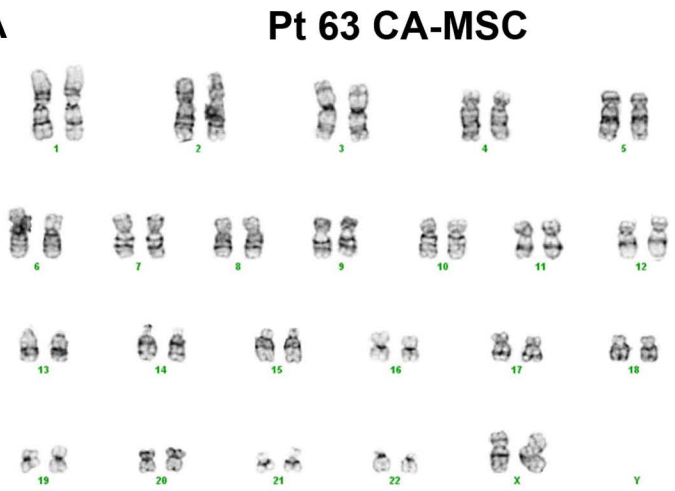
Supplement Figure 4. Impact of tumor conditioned media on MSC expression of selected genes. qRT-PCR demonstrating the expression of factors previously reported to be abnormally regulated in MSC associated with cancer including IL8, GM-CSF, FGF2, CCL5, and DKK1. Relative expression is shown for Control MSC, Control MSC treated with tumor conditioned media (Tumor Cond Media) and CA-MSC. Standard Deviations are indicated.

Supplemental Table 1. PCR primer sequences used.

Gene	Primer	Gene	Primer
BMP2	5'-tcaagccaaacacaaacac-3'	CCL5	5'-tacaccagtggcaagtgctc-3'
	5'-agccacaatccagtcattcc-3'		5'-tgtactcccgaacccatttc-3'
BMP4	5'-ggctggaatgactggattgt-3'	DKK1	5'-ccttggatgggtattccaga-3'
	5'-tggttgagttgaggtggtca-3'		5'-cctgaggcacagtctgatga-3'
BMP6	5'-aacggttctttgaccagcac-3'	ADIPOQ	5'-tagagacggggtttcaccac-3'
	5'-tgtggcgtggtatgctgtat-3'		5'-atggctcatgcctgtaatcc-3'
MMP2	5'-aagtatggcttctgccctga-3'	PPARG	5'-acccaggagctagggaagag-3'
	5'-atttgttgcccaggaaagtg-3'		5'-gggaggagactggctttctt-3'
PDGFRB	5'-acccaggagctagggaagag-3'	RUNX2	5'-aatgatggtgttgacgctga-3'
	5'-gggaggagactggctttctt-3'		5'-ttcaatatggtcgccaaaca-3'
TBX5	5'-ggagctgcacagaatgtcaa-3'	SP7	5'-taccccatctcccttgactg-3'
	5'-tgctgaaaggactgtggttg-3'		5'-tctccataaccatggcaaca-3'
GMCSF	5'-cagcctcaccaagctcaag-3'	DMP1	5'-gggaacactgagaagggtga-3'
	5'-aatctgggttgcacaggaag-3'		5'-tgaggaaaccctatgcaacc-3'
MUC16	5'-cctaagcaatgcagcaacaa-3'	IL8	5'-ctgcgccaacacagaaatta-3'
	5'-cactccctgctgtctcttcc-3'		5'-attgcatctggcaaccctac-3'
FGF2	5'-aaaatagccaggcatggtg-3'	BGLAP	5'-tgcagagtccagcaaaggt-3'
	5'-ccttgacctctcagcctca-3'		5'-tcccagccattgatacaggt-3'
CK20	5'-agttctgcagcaacaggtca-3'	HE4	5'-aggctgagcagtgaggagag-3'
	5'-atctcaaggctctgggaggt-3'		5'-cagcccaagagggaatacag-3'
EPCAM	5'-ctgccaaatgtttggtgatg-3'	CK7	5'-caggatgtggtggaggactt-3'
	5'-aaagcccatcattgttctgg-3'		5'-cacatccttcttcagcacca-3'
MUC1	5'-ccattccactccactcaggt-3'	CD31	5'-tcaagctcctaagccactgc-3'
	5'-cctctgaaggaggctgtgag-3'		5'-agaagccaggaacttgtcca-3'
NOS3	5'-ggctggtacatgagcactga-3'	SMURF2	5'-agcgagacctggttcagaaa(f)-3'
	5'-tatccaggtccatgcagaca-3'		5'-tctcttccctggaaacctca(r)-3'
SOX2	5'-caagatgcacaactcggaga-3'		
	5'-gcttagcctcgtcgatgaac-3'		

Supplemental Figure 1

A



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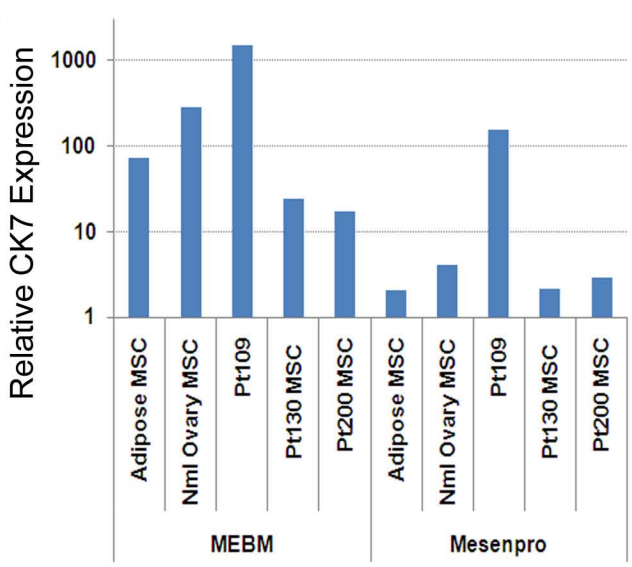
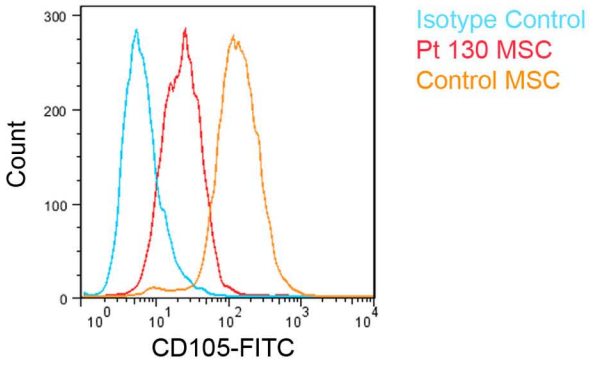


C

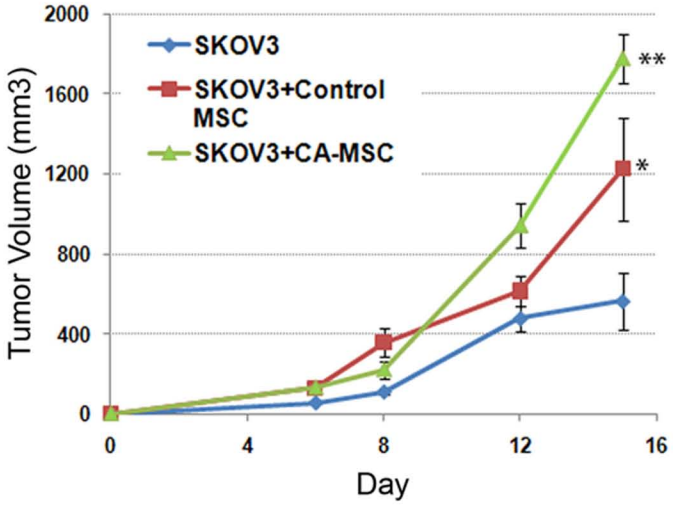
MSC Sample	CD73	CD90	CD105	CD34-CD45-	CD44
Cont. MSC – 1	99.8	99.8	97.0	99.7	99.9
Cont. MSC – 2	99.9	99.7	96.2	99.2	99.9
Pt 63	97.4	94.6	96.7	99.8	ND
Pt 94	94.1	90.7	98.7	96.8	98.0
Pt 109	98.7	75.8	85.9	96.9	99.1
Pt 122	97.8	89.8	49.1	96.4	99.9
Pt 130	99.9	99.5	78.6	97.7	96.4

D



Supplemental Figure 2

A (i)



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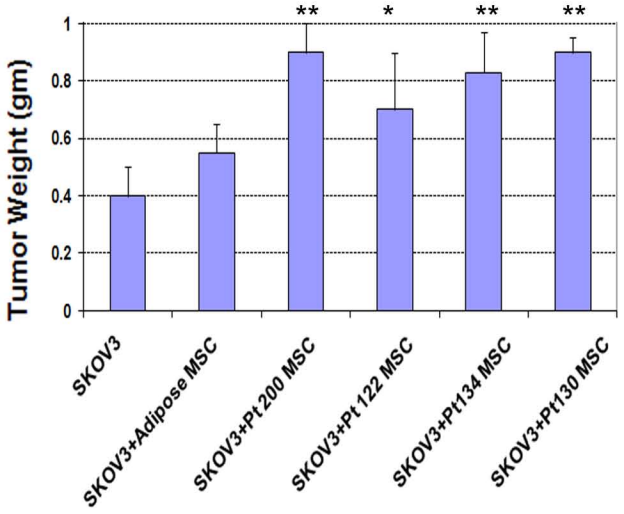

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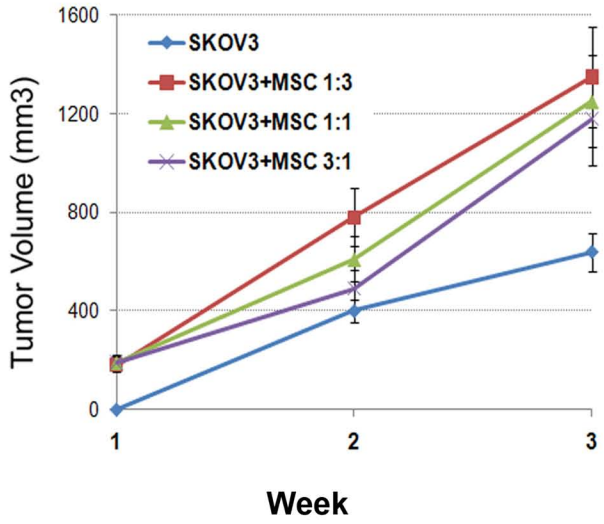
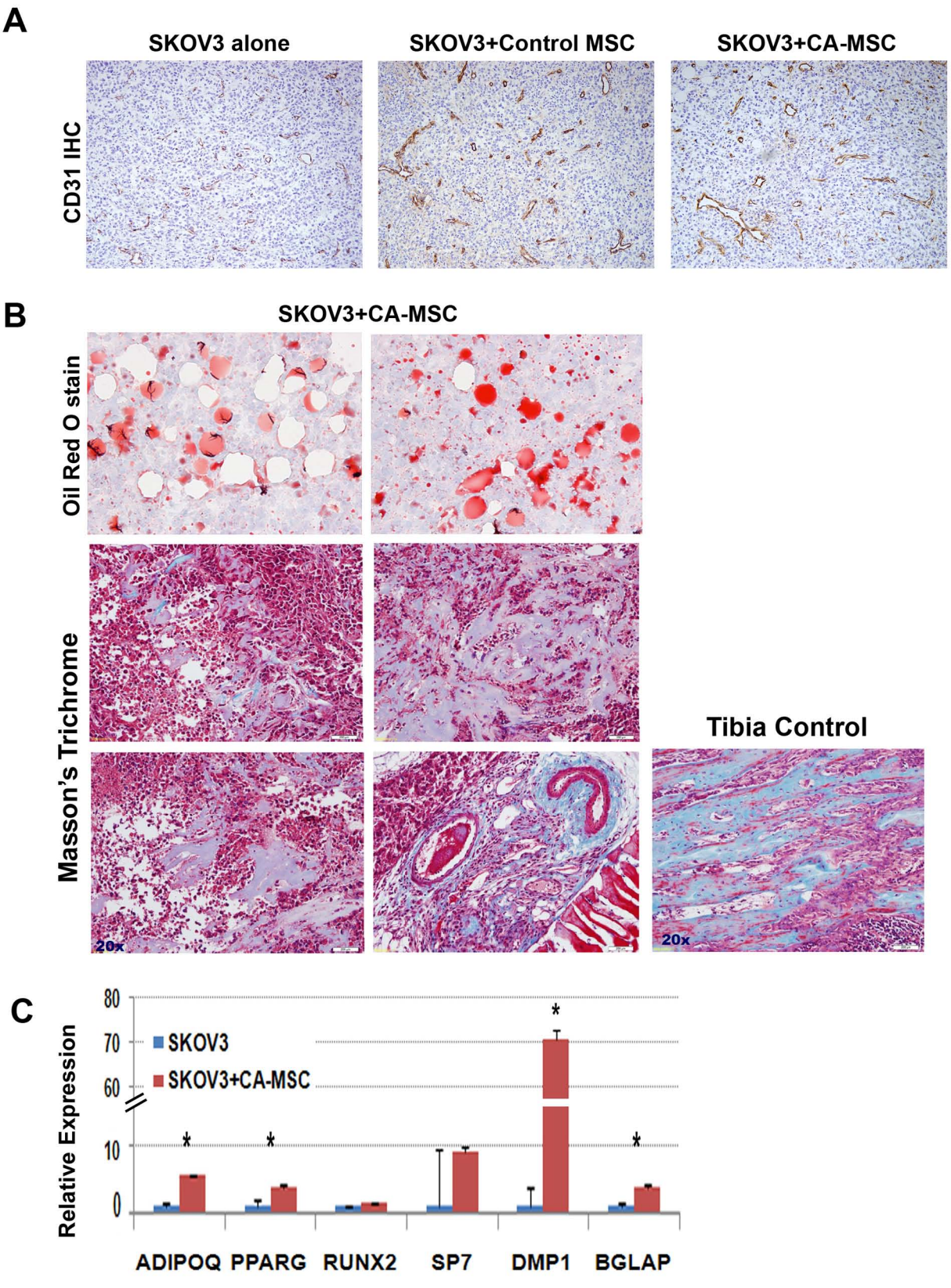


Supplemental Figure 3



Supplemental Figure 4