



**Fig. S1** The fold change in gene expression of PPAR $\gamma$  and adiponectin for ASCs cultured on adipose tissue ECM and ECM secreted by cells in adipogenic media conditions (A-ECM) ( $*p<0.05$ ).

Gene	5' to 3' Sequence (sense)	5' to 3' Sequence (antisense)
GAPDH	CCCCTTCATTGACCTCAACTACA	TTGCTGATGATCTTGAGGCTGT
PPAR $\gamma$	CTCCTATTGACCCAGAAAGC	GTAGAGCTGAGTCTTCTCAG
Adiponectin	CATGACCAGGAAACCACGACT	TGAATGCTGAGCGGTAT
Col I	CGCTACTACCGGGCTGATGAT	GTCCTTGGGGTTCTTGCTGATGTA
Osteocalcin	TCTGACAAAGCCTTCATGTCC	AAATAGTGATACCGTAGATGCG

**Supplementary Table 1** List of primers for genes used for gene expression studies by qPCR

Sample Groups	Units	Total Protein	Collagen	Glycosaminoglycans	Collagen/GAG ratio
Non-decellularized Adipose tissue	(µg/mg of tissue)	1710.38±28.47	11.73±0.35	1.71±0.29	6.86
Decellularized Adipose tissue		669.81±8.92	128.10±2.36	0.33±0.02	388.18
Non-decellularized A-ECM	(µg/well) (1.99cm <sup>2</sup> )	135.27±11.65	4.80±0.06	12.81±0.73	0.37
Decellularized A-ECM		95.11±12.45	2.70±0.19	8.15±0.13	0.33

**Supplementary Table 2** Composition of the ECM from the adipose tissue and adipo-differentiated ASCs before and after decellularization (\**p*<0.05)