

## Supporting Information

### Decellularized extracellular matrix derived from keratinocytes can suppress cellular senescence induced by replicative and oxidative stresses.

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#### Supplemental Figures

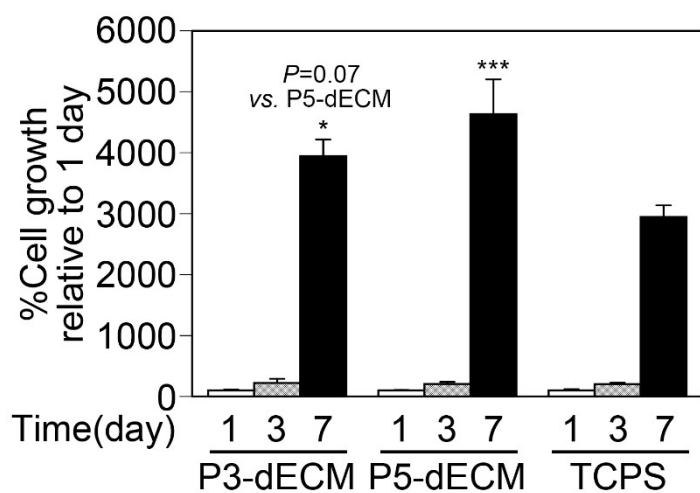


Figure S1. The growth percentage of P3-NHEKs on NHEK-derived dECM and TCPS. Data represent means  $\pm$  SD (n=4). \*:  $P < 0.05$ , \*\*\*:  $P < 0.005$  vs. TCPS (7 days).

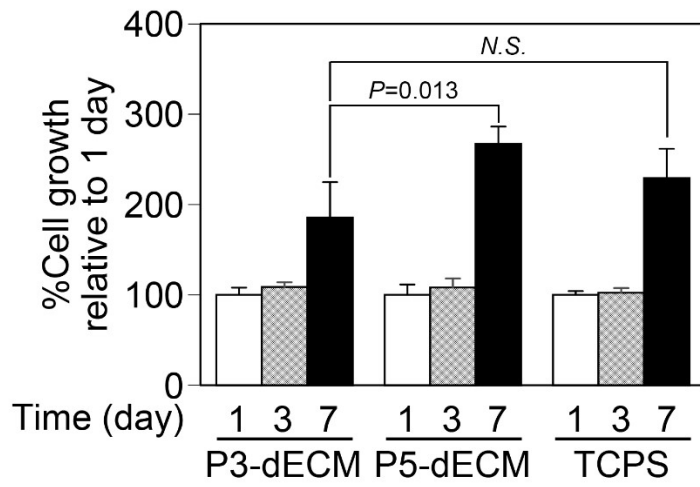


Figure S2. The growth percentage of P5-NHEKs on NHEK-derived dECM and TCPS. Data represent means  $\pm$  SD (n=4). *N.S.* indicates not significant difference.

## Supplemental Tables

Table S1. Primer sequences for RT-PCR.

Gene	Sequence (5' to 3')	Reference
<i>LAMA3</i>	F: CACTGTGAACGCTGCCAGGAGGGCTA R: CAGCTACCTCCGAATTTCTGGGGATT	[1]
<i>LAMA5</i>	F: GGTCACCCGCCGGTATTATT R: AGTCGATACAGACACCCCA	-
<i>COL4A1</i>	F: GGATCGGCTACTCTTTTGTGATG R: AAGCGTTTGCGTAGTAATTGCA	[2]
<i>HSPG2</i>	F: GGCATACGATGGCTTGTCTC R: CACCTCTCGGAACTCTCTGG	-
<i>NID-1</i>	F: TCCGCTTCTACGACAGATCC R: GAAAGAGATCTCCGGGAACC	-
<i>GAPDH</i>	F: GGGCTGCTTTTAACTCTGGT R: TGGCAGTTTTTCTAGACGG	[3]

*LAMA5*, *HSPG2*, and *NID-1* were originally designed.

Table S2. Primer and probe sequences for real-time PCR.

Gene	Sequence (5' to 3') or Gene Expression Assay No.	Reference
<i>SOD1</i>	Hs00533490_m1	-
<i>GPXI</i>	Hs00829989_gH	-
<i>CAT</i>	Hs00156308_m1	-
<i>AQP3</i>	Hs00185020_m1	-
<i>GAPDH</i>	F: ATGGGGAAGGTGAAGGTCG R: TAAAAGCAGCCTGGTGACC Probe: [FAM]CGCCCAATACGACCAAATCCGTTGAC[TAMRA]	[4]

Table S3. Projected cell areas of P3-NHEKs under oxidative condition.

Substrates	Projected cell area ( $\mu\text{m}^2$ )	P-value vs. TCPS
P3-dECM	553±641	$7.5 \times 10^{-9}$
P5-dECM	839±937	$1.1 \times 10^{-6}$
TCPS	632±589	-

Statistical differences were determined by Kruskal-Wallis test and Wilcoxon rank sum test was applied as a *post hoc* test. Over 550 cells/sample were measured.

Table S4. Projected cell areas of P5-NHEKs under normal condition.

Substrates	Projected cell area ( $\mu\text{m}^2$ )	P-value vs. TCPS
P3-dECM	2470 $\pm$ 1185	0.0065
P5-dECM	2713 $\pm$ 1375	N.S.
TCPS	2724 $\pm$ 1267	-

Statistical differences were determined by Kruskal-Wallis test and Wilcoxon rank sum test was applied as a *post hoc* test. Over 350 cells/sample were measured.

Table S5. The yields of passaged cells on P3-dECM and TCPS (unit:  $\times 10^4$  cells).

	Passage	P3-dECM	TCPS	Initial cell number
#1	Passage 2 to passage 3	451	625	50.25
#2	Passage 3 to passage 4	326	371	75
#3	Passage 3 to passage 4	369	435	75

## References

- [1] H. Fujiwara, Y. Kikkawa, N. Sanzen, K. Sekiguchi, *J. Biol. Chem.* **2001**, 276, 17550.
- [2] T.-W. Wang, J.-S. Sun, Y.-C. Huang, H.-C. Wu, L.-T. Chen, F.-H. Lin, *Biomaterials* **2006**, 27, 5059.
- [3] R. Tuli, S. Tuli, S. Nandi, X. Huang, P.A. Manner, W.J. Hozack, K.G. Danielson, D.J. Hall, R.S. Tuan, *J. Biol. Chem.* **2003**, 278, 41227.
- [4] I. Martin, M. Jakob, D. Schafer, G. Spagnoli, M. Heberer, *Osteoarthr. Cartil.* **2001**, 9, 112.