

1 **Depletion of Gangliosides Enhances Articular Cartilage Repair in Mice**

2 Masatake Matsuoka¹, MD, PhD; Tomohiro Onodera^{1,*}, MD, PhD; Kentaro Homan¹, MS, RPT;

3 Fumio Sasazawa¹, MD, PhD; Jun-ichi Furukawa¹, PhD; Daisuke Momma¹, MD, PhD;

4 Rikiya Baba¹, MD; Kazutoshi Hontani¹, MD; Zenta Joutoku¹, MD; Shinji Matsubara¹, MD;

5 Tadashi Yamashita², DVM, PhD; Norimasa Iwasaki¹, MD, PhD

6 ¹Department of Orthopaedic Surgery, Hokkaido University Graduate School of Medicine, Sapporo,

7 Japan

8 ²Laboratory of Biochemistry, Azabu University, Graduate School of Veterinary Medicine,

9 Sagamihara, Japan

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12 **Supplemental figure legends**

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14 Supplemental Figure 1. Quantitative analysis of GSL-glycans in cultured mouse chondrocytes.

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16 Supplemental Figure 2. Eight weeks postoperative in 8-week-old mice. Histology of articular
17 cartilage repair (A-D) and the articular cartilage repair score (E). Sections from WT (A-B) and
18 GM3^{-/-} mice (C-D) were stained with hematoxylin & eosin or Safranin-O. The scale bar shows 100
19 μm. All values are expressed as the mean ± SEM. (**P < 0.01).

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21 Supplemental Figure 3. Proliferation assay. A) MSCs, B) chondrocytes. The number of viable cells
22 quantified by measuring the absorbance at 450 nm. All values are expressed as the mean ± SEM.

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24 Supplemental Figure 4. Wound healing assay. A) MSCs, B) chondrocyte. The migration rate was
25 calculated as the reduced area that remained cell free between both borderlines following scratching.
26 All values are expressed as the mean ± SEM.

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28 Supplemental Figure 5. Quantitative real-time reverse transcription-polymerase chain reaction
29 analysis of MSCs. (A) type II collagen mRNA, (B) aggrecan mRNA, (C) type X collagen mRNA,
30 (D) Runx2 mRNA, (E) Runx3 mRNA, (F) Ihh mRNA. All values are expressed as the mean ± SEM.
31 (**P < 0.01). Flow cytometry analysis of MSCs (G-L). The expression of each antigen (red) is
32 shown together with the corresponding isotype control (blue). Numbers indicate the percentage of
33 cells in the indicated regions. FACS results show that these cells are homogenously positive for the
34 mesenchymal marker CD29 (G, J) but negative for the hematopoietic marker CD45 (H, K) and co-
35 stimulating molecule CD86 (I, L).

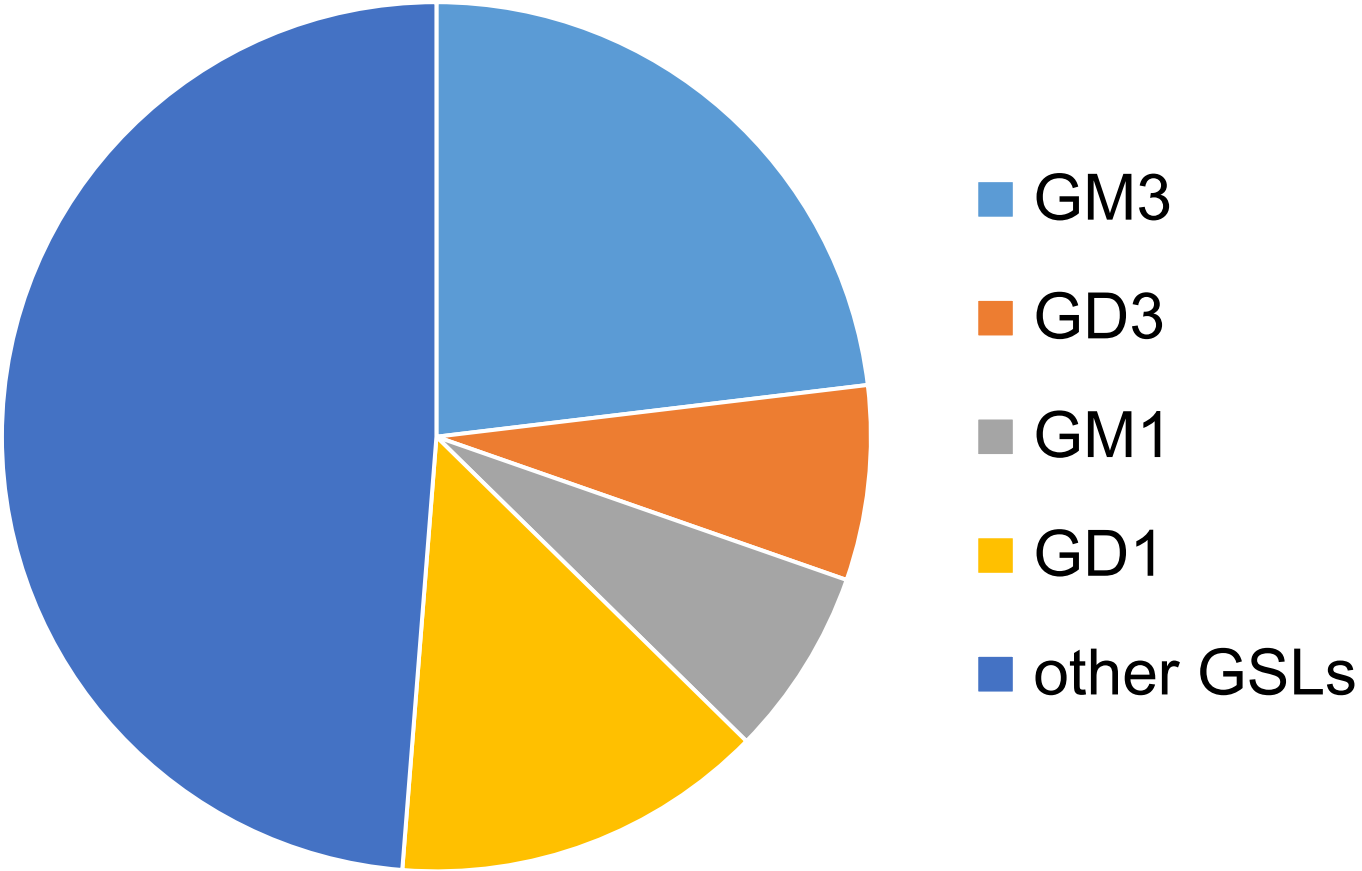
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37 Supplemental Figure 6. Measurement of the articular cartilage repair site in 4-week-old mice at 8
38 weeks postoperative. All values are expressed as the mean \pm SEM.

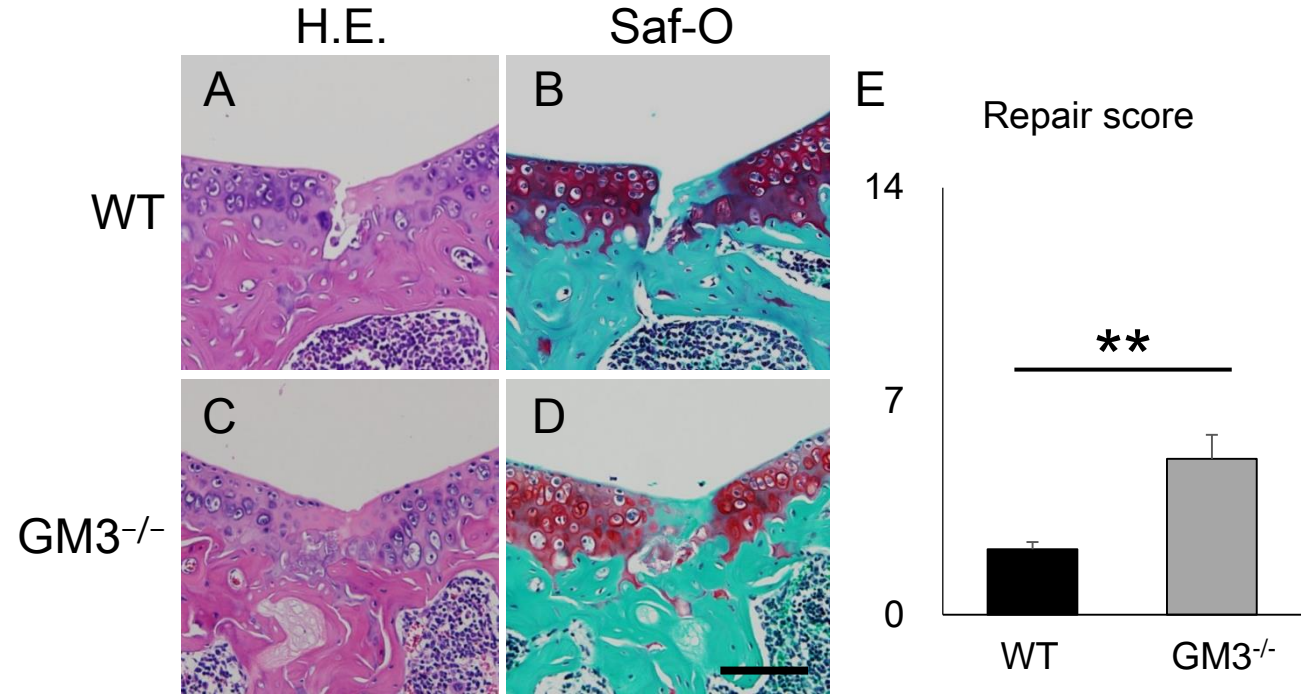
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40 Supplemental Table 1. Gene-specific primers used for real-time PCR analysis.

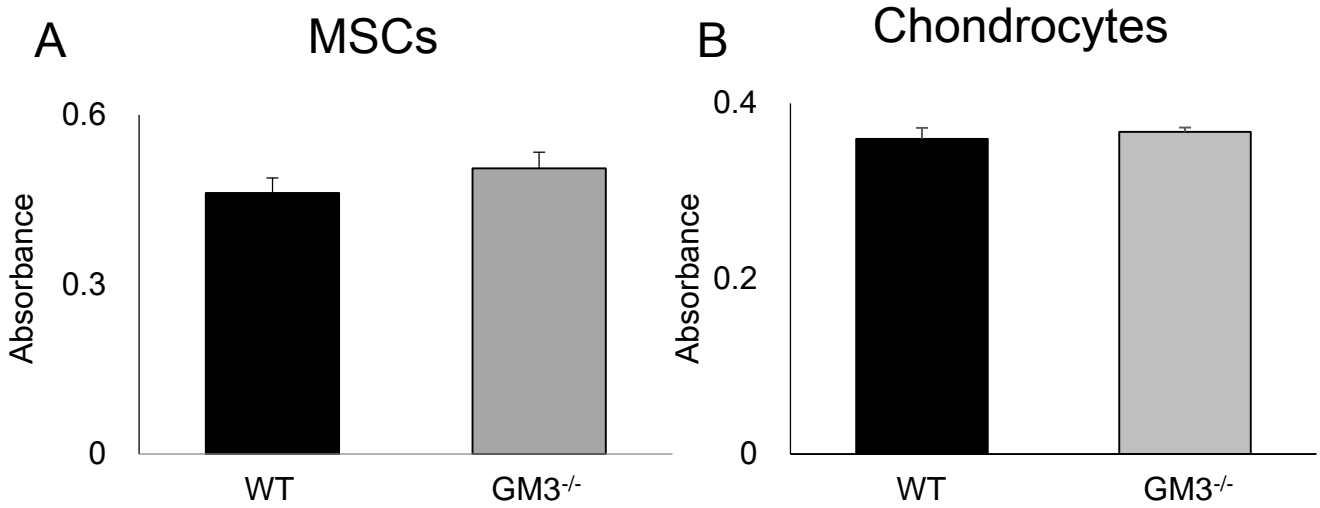
Supplemental Figure 1



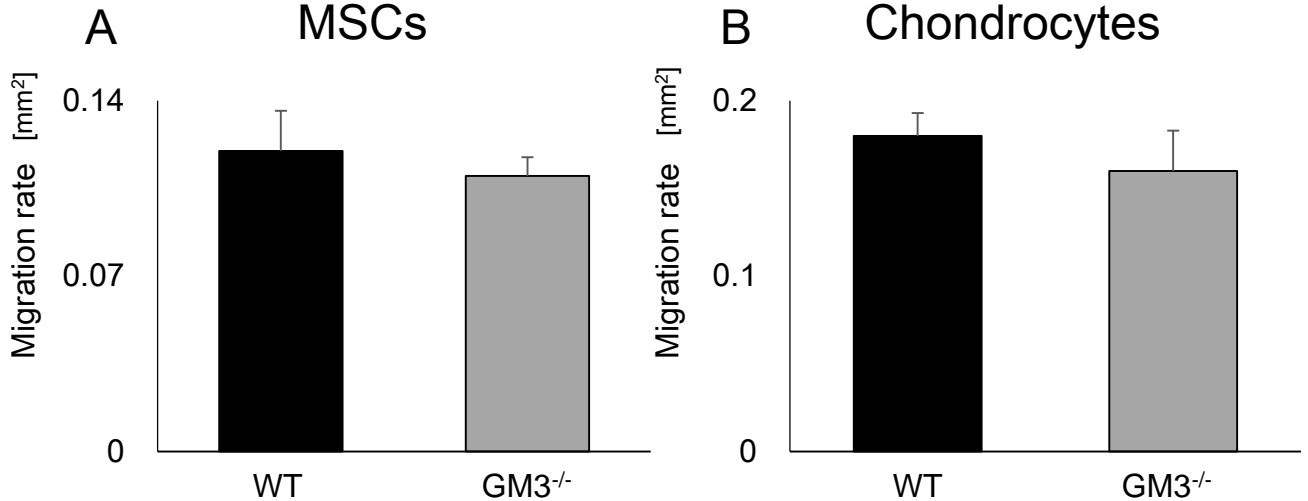
Supplemental Figure 2



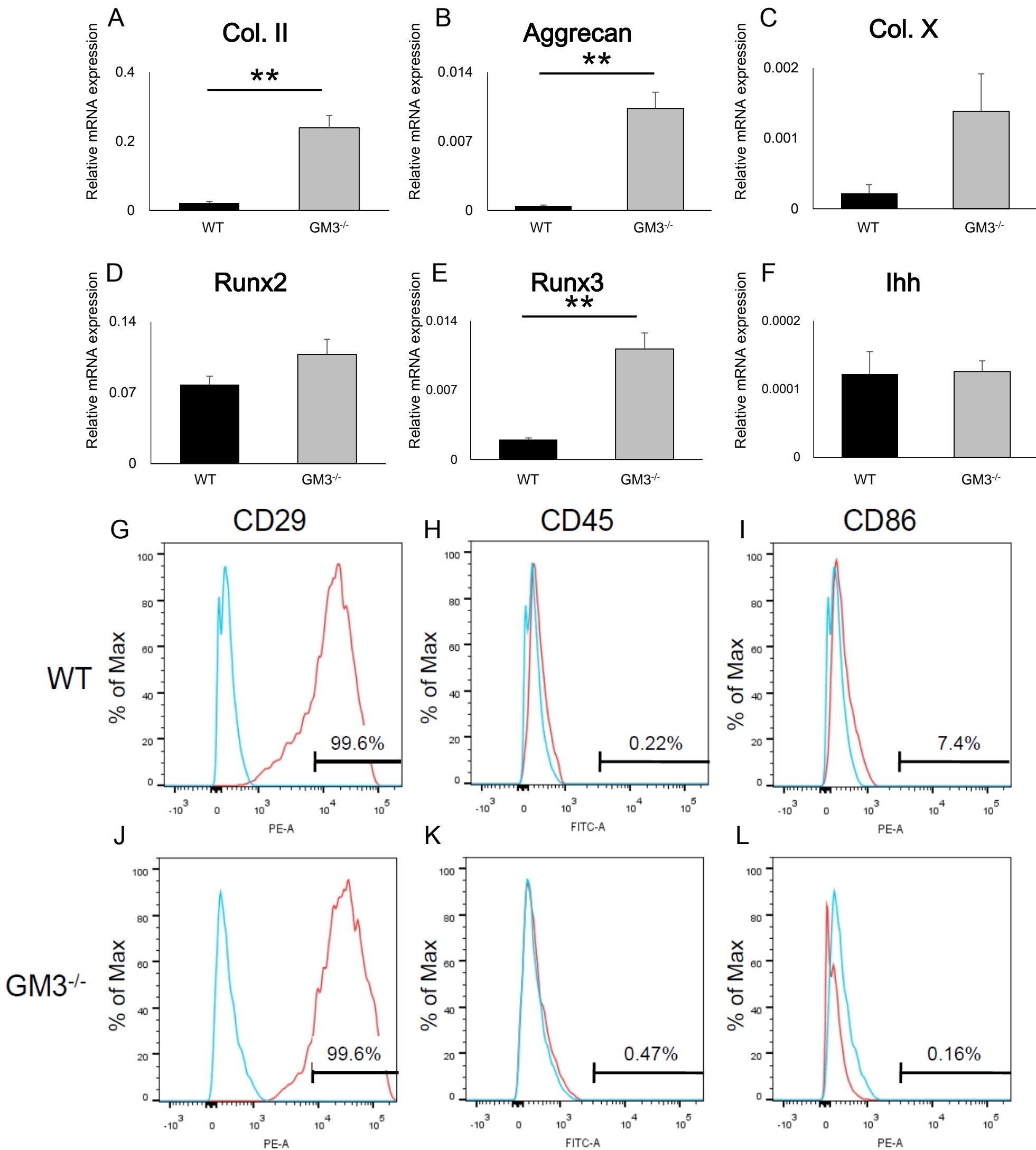
Supplemental Figure 3



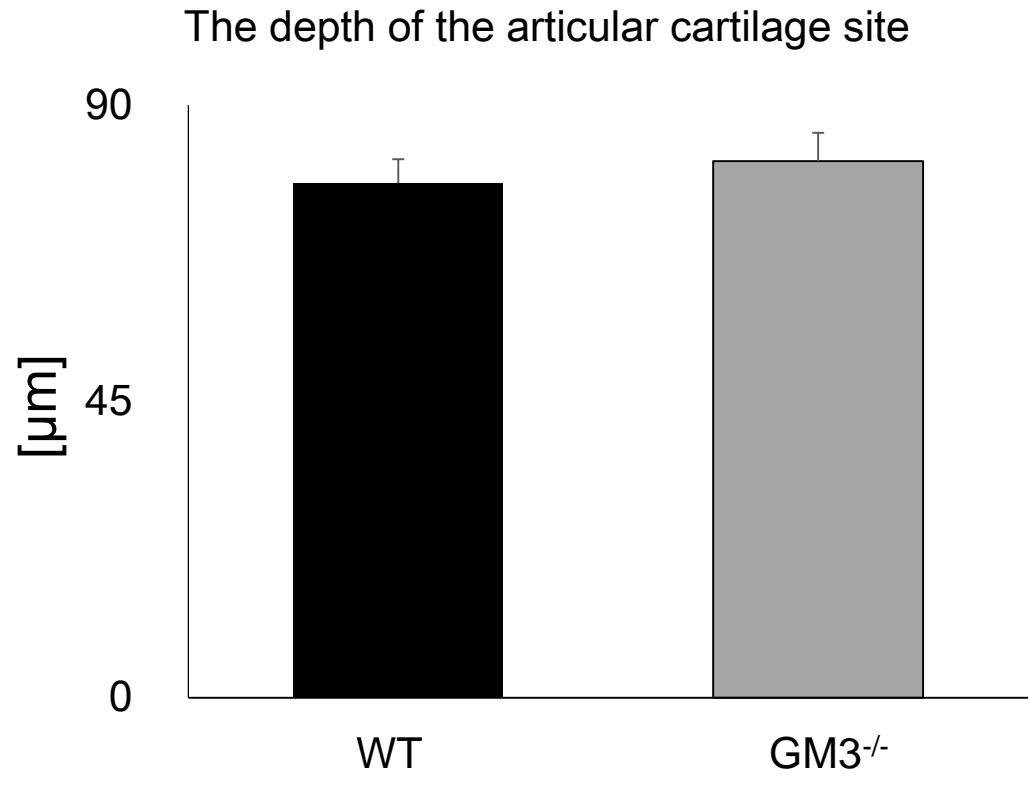
Supplemental Figure 4



Supplemental Figure 5



Supplemental Figure 6



Supplemental Table 1

Gene	Sequence	
<i>Type II collagen</i>	Forward	AGGATGGCTGCACCAAACAC
	Reverse	TGTCCATGGGTGCGATGTC
<i>Type X collagen</i>	Forward	AGCCCCAAGACACAATACTTCATC
	Reverse	TTTCCCCTTTCCGCCCATTCACAC
<i>Aggrecan</i>	Forward	CCCTCACCCCAAGAATCAAG
	Reverse	GGATAGTTGGGGAGCGACAC
<i>Runx2</i>	Forward	GATGGGACTGTGGTTACCG
	Reverse	GGTGAAACTCTTGCCTCGTC
<i>Runx3</i>	Forward	CAGGTTCAACGACCTTCGATT
	Reverse	GTGGTAGGTAGCCACTTGGG
<i>Inh</i>	Forward	CTCTTGCCTACAAGCAGTTCA
	Reverse	CCGTGTTCTCCTCGTCCTT
<i>GM3 synthase</i>	Forward	ATGCCAAGTGAGTTCACCTCT
	Reverse	ACTCAAATGCAACCAACGTG
<i>GAPDH</i>	Forward	ACTTTGTCAAGCTCATTTCC
	Reverse	TGCAGCGAACTTTATTGATG