Supporting Information

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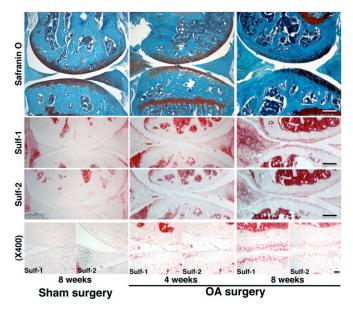


Fig. S1. Sulf overexpression in mouse knee joints with experimental OA. Wild-type (C57BL/6J) mice at the age of 8 weeks were subjected to surgically induced OA by resecting the medial meniscotibial ligament (MMTL) and the medial collateral ligament (MCL). Knee joints were harvested 4 and 8 weeks after surgery (n = 8). Control mice were subjected to sham surgery with opening of the joint capsule but no ligament resection. Both Sulf-1 and Sulf-2 were overexpressed 4 weeks and more strongly 8 weeks after OA surgery in the articular cartilage, menisci, and synovium. (Scale bars: low magnification, 200 μm; high magnification, 50 μm.)

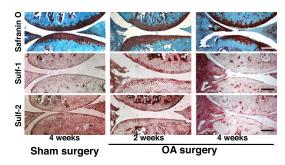


Fig. S2. Sulf expression in 6-month-old mouse knee joints with experimental OA. Wild-type (C57BL/6J) mice at the age of 6 months were subjected to surgically induced OA by resecting the MMTL and the MCL and knee joints were harvested 2 and 4 weeks after surgery (n = 4–8). Control mice were subjected to sham surgery with opening of the joint capsule but no ligament resection. Both Sulf-1 and Sulf-2 were overexpressed in articular cartilage at 2 weeks but not at 4 weeks after OA surgery. (Scale bars: 200 μ m.)

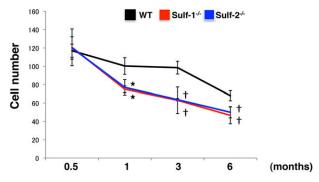


Fig. S3. Cartilage cellularity in wild-type and $Sulfs^{-\prime-}$ mice was quantified by counting chondrocytes on safranin O-stained knee joint sections at the age of 0.5, 1, 3, and 6 months. Three pictures were taken under magnification \times 400, representing the center of the femoral condyle that is not covered by the menisci as well as the medial and lateral femoral condyles. Cell numbers in $Sulfs^{-\prime-}$ mice were significantly reduced compared with WT at the age of 1, 3, and 6 months $(n = 8; *, P \le 0.05; ^{\dagger}, P < 0.01)$.

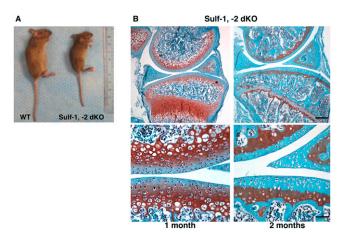


Fig. 54. Phenotype of Sulf-1 and -2 double-deficient mice. (A) Sulf-1 and -2 double-deficient mice had reduced body size at birth. (B) Articular cartilage in double-deficient mice showed complete glycosaminoglycan loss at 2 months of age. (Scale bars: low magnification, 200 μm; high magnification, 50 μm.)