

Figure S1. Negative control images of immunohistochemical assay. Sections from five cartilage tissue samples (I to V) were incubated with PBS, and then horseradish peroxidase-conjugated goat anti-rabbit immunoglobulin G secondary antibodies. Sections from sample II were imaged at x100 magnification.

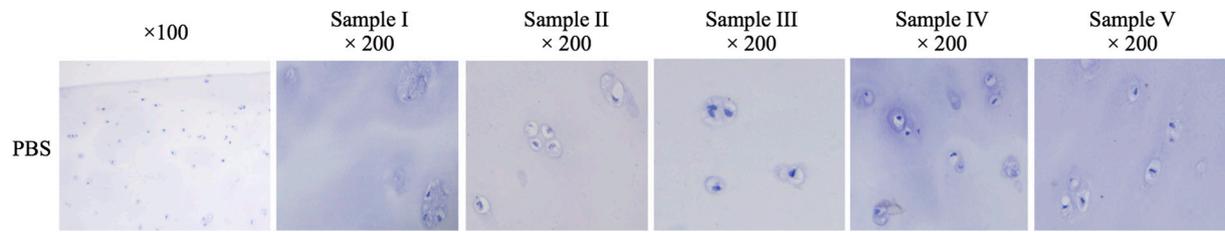


Figure S2. Plasmid map of *SLC2A9* pcDNA3.1-T2A-EGFP. *SLC2A9*, solute carrier family 2 member 9 (encodes glutamate transporter 9); EGFP, enhanced green fluorescent protein; CMV, cytomegalovirus.

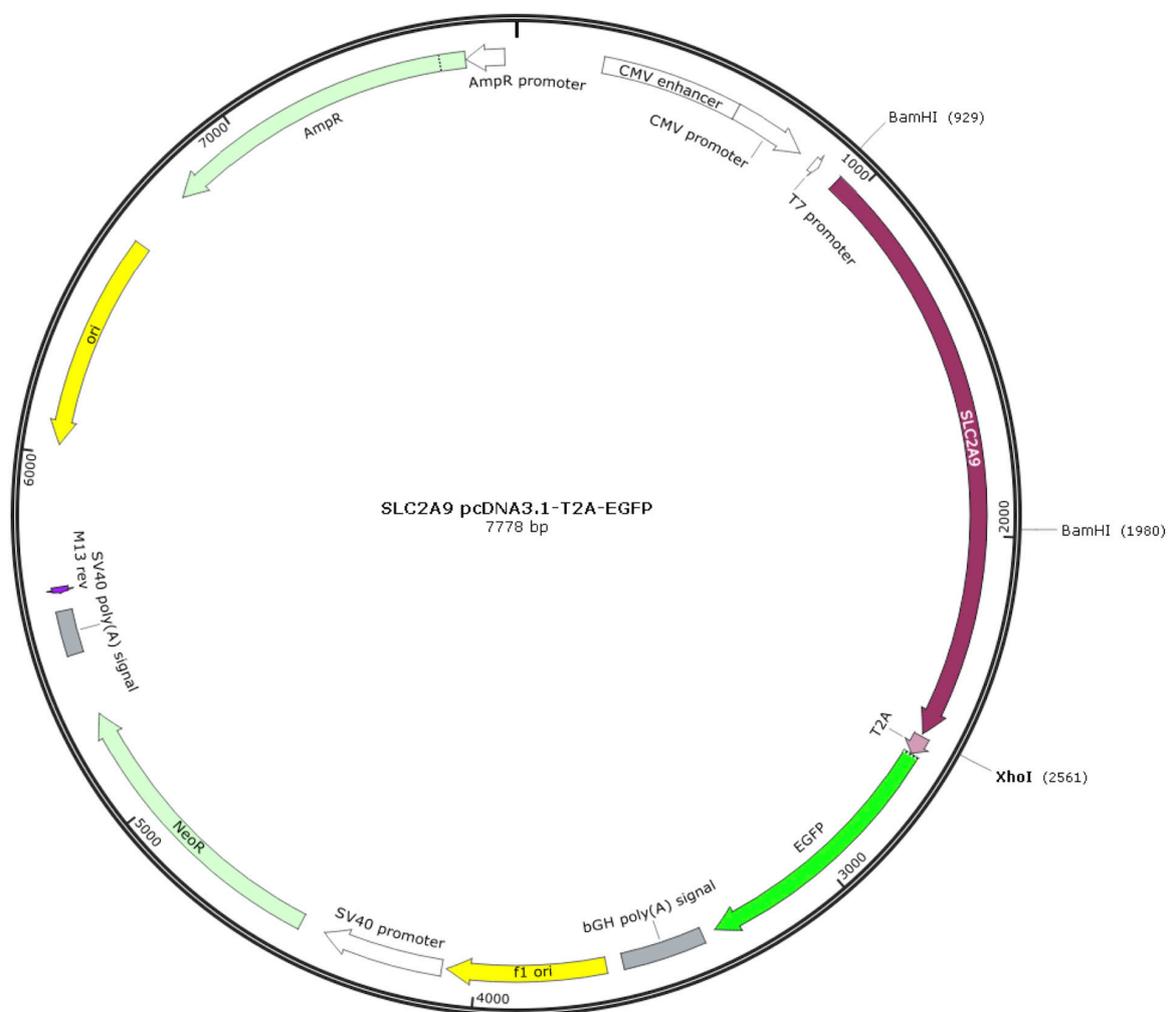


Figure S3. Plasmid map of *SLC22A12* pcDNA3.1-T2A-EGFP. *SLC22A12*, solute carrier family 22 member 12 (encodes urate transporter 1); EGFP, enhanced green fluorescent protein; CMV, cytomegalovirus.

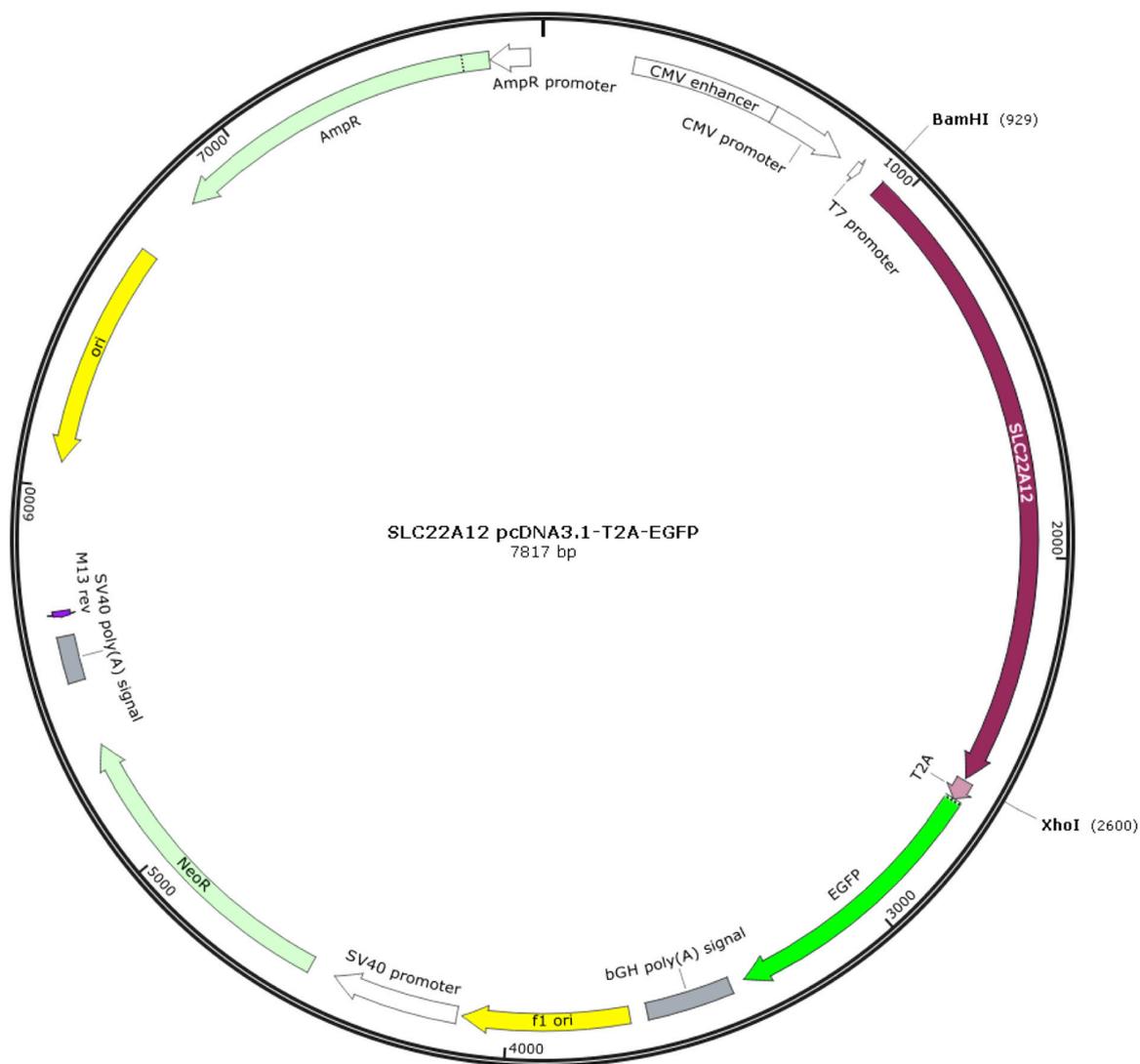


Figure S4. Negative control images of immunofluorescence in HC-a cells. HC-a cells were incubated with PBS and then FITC-conjugated mouse anti-rabbit immunoglobulin G secondary antibodies.

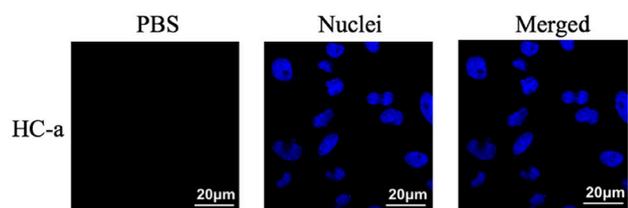


Figure S5. Negative control western blot assay. Proteins from the five cartilage tissue samples (I to V), HC-a cells and 293 cells were separated via 10% SDS-PAGE and transferred onto nitrocellulose membranes, which were incubated with PBS and then horseradish peroxidase-conjugated secondary antibodies.

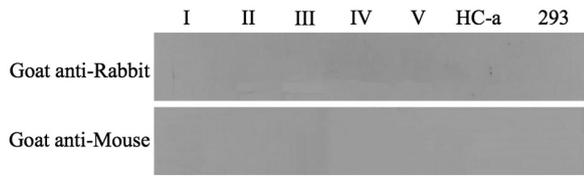


Table SI. Clinical characteristics of the 5 patients from whom cartilage samples were collected.

NO	Gender	Age (years)	Location	sUA, $\mu\text{mol/l}$	Gout	OA	RA	Hypertension	Diabetes
I	M	68	L	387	N	N	N	Y	Y
II	M	58	R	356	N	N	N	N	Y
III	F	64	R	289	N	N	N	Y	N
IV	M	60	L	304	N	N	N	Y	N
V	F	54	R	258	N	N	N	N	N

NO, patient number; Location, location of the fracture, L, left, R, right; SUA, soluble uric acid; OA, osteoarthritis; RA, rheumatoid arthritis.

Table SII. Western blot density of GLUT9, URAT1 and Collagen II in five cartilage samples.

Samples	GLUT9	URAT1	Collagen II
I	1.256±0.0597	1.066±0.0709	1.167±0.0678
II	1.143±0.0782	1.031±0.0427	1.281±0.0734
III	1.263±0.0861	1.159±0.0883	1.096±0.0752
IV	1.285±0.0795	1.045±0.0807	1.364±0.0986
V	1.163±0.0370	1.103±0.0328	1.206±0.0652

Data are presented as the mean ± standard errors (n=3). GLUT9, glucose transporter 9; URAT1, urate transporter 1.

Table SIII. Western blot density of GLUT9 in HC-a cells.

Cell samples	Total	Membrane	Cytoplasmic
HC-a	4.595±0.2934	4.504±0.3985	2.545±0.1891
HC-GLUT9	1.566±0.2449 ^a	1.000±0.1855 ^a	1.046±0.1152 ^a
HC-sc	4.504±0.3985	4.828±0.1955	2.293±0.2319
HC-a + BEN	4.336±0.2780	4.706±0.2412	2.419±0.1410

^aP<0.05 vs. HC-a. Data are presented as the mean ± standard deviation (n=3). GLUT9, glucose transporter 9; HC-sc, HC-a cells transfected with scrambled RNA; HC-shGLUT9, HC-a cells with short hairpin RNA-mediated GLUT9 knockdown; BEN, benzbromarone.

Table SIV. Western blot density of URAT1 in HC-a cells.

Cell samples	Total	Membrane	Cytoplasmic
HC-a	9.052±0.8584	5.136±0.4673	3.032±0.1496
HC-URAT1	2.373±0.3491 ^a	1.030±0.1229 ^a	1.049±0.2168 ^a
HC-sc	9.100±0.7359	5.398±0.4567	3.547±0.2817
HC-a + BEN	8.636±0.9703	5.085±0.6868	3.456±0.2963

^aP<0.05 vs. HC-a. Data are presented as the mean ± standard deviation (n=3). URAT1, urate transporter 1; HC-sc, HC-a cells transfected with scrambled RNA; HC-shURAT1, HC-a cells with short hairpin RNA-mediated URAT1 knockdown; BEN, benzbromarone.

Table SV. Intracellular UA concentrations in wildtype chondrocytes following incubation with exogenous sUA.

sUA concentration (mM)	Intracellular UA (nmol/well)
Control	10.43±0.336
0.25	16.44±0.511
0.50	22.73±0.800
0.75	28.42±0.875
1.00	34.69±1.273

Data are presented as the mean ± standard deviation (n=3). (s)UA, (soluble) uric acid; Control, incubated in buffer without UA.

Table SVI. Intracellular UA concentrations in wildtype and shRNA-mediated knockdown chondrocytes following incubation with exogenous sUA (1 mM) with or without pretreatment with BEN (50 μ M).

Incubation	Intracellular UA (nmol/well)			
	HC-a	HC-sc	HC-shGLUT9	HC-shURAT1
Control	10.43 \pm 0.336	10.37 \pm 0.503	10.49 \pm 0.449	9.96 \pm 0.314
sUA	34.69 \pm 1.273 ^a	33.88 \pm 1.425 ^a	25.28 \pm 0.999 ^{a,b}	19.35 \pm 0.594 ^{a,b}
BEN	9.56 \pm 0.384	9.68 \pm 0.671	9.65 \pm 0.299	9.5 \pm 0.286
BEN + sUA	14.41 \pm 0.565 ^c	13.36 \pm 0.520 ^c	13.45 \pm 0.404 ^c	11.65 \pm 0.456 ^c

^aP<0.05 vs. Control; ^bP<0.05 vs. HC-a cells under the same incubation conditions; ^cP<0.05 vs. sUA. Data are presented as the mean \pm standard deviation (n=3). GLUT9, glucose transporter 9; URAT1, urate transporter 1; (s)UA, (soluble) UA; shRNA, short hairpin RNA; BEN, benzbromarone; Control, incubated in buffer without UA; HC-sc, HC-a cells transduced with scrambled RNA; HC-shGLUT9, HC-a cells with GLUT9 knockdown; HC-shURAT1, HC-a cells with URAT1 knockdown.

Table SVII. Western blot densities in wildtype and transduced 293 cells.

	GLUT9 density	URAT1 density
293	1.135±0.0711	1.106±0.0847
ec-293	1.020±0.1414	0.992±0.1361
GLUT9-293	3.373±0.3491 ^a	
URAT1-293		8.309±0.5617 ^a

^aP<0.05 vs. 293. Data are presented as the mean ± standard deviation (n=3). GLUT9, glucose transporter 9; URAT1, urate transporter 1; ec-293, 293 cells transduced with empty vector; GLUT9-293, 293 cells overexpressing GLUT9; URAT1-293, 293 cells overexpressing URAT1.

Table SVIII. Intracellular UA concentrations in wildtype and transduced 293 cells following exogenous sUA incubation.

sUA concentration (mM)	Intracellular UA (nmol/well)		
	293	GLUT9-293	293-URAT1
Control	0.85±0.415	0.87±0.223	0.65±0.159
0.25	2.22±0.415	3.01±0.712	4.98±2.257 ^a
0.50	3.50±0.194	6.40±1.050 ^a	10.01±0.292 ^a
0.75	4.78±0.177	9.05±0.283 ^a	11.79±0.337 ^a
1.00	7.39±0.450	12.62±1.776 ^a	15.66±1.080 ^a

^aP<0.05 vs. 293. Data are presented as the mean ± standard deviation (n=3). GLUT9, glucose transporter 9; URAT1, urate transporter 1; (s)UA, (soluble) uric acid; Control, incubated in buffer without UA; GLUT9-293, 293 cells overexpressing GLUT9; URAT1-293, 293 cells overexpressing URAT1.

Table SIX. Intracellular UA concentrations in wildtype and transduced 293 cells following incubation with exogenous sUA with or without BEN pretreatment.

Incubation	Intracellular UA (nmol/well)			
	293	ec-293	GLUT9-293	URAT1-293
Control	0.85±0.415	0.74±0.196	0.87±0.223	0.65±0.159
sUA	7.39±0.450 ^a	7.28±0.283 ^a	12.62±1.776 ^{a,b}	15.66±1.080 ^{a,b}
BEN + sUA	1.19±0.065 ^c	1.08±0.106 ^c	2.91±0.135 ^c	1.34±0.287 ^c

^aP<0.05 vs. Control; ^bP<0.05 vs. 293 cells under the same incubation conditions; ^cP<0.05 vs. sUA. Data are presented as the mean ± standard deviation (n=3). GLUT9, glucose transporter 9; URAT1, urate transporter 1; (s)UA, (soluble) uric acid; Control, incubated in buffer without UA; ec-293 cells, 293 cells transduced with empty vector; GLUT9-293, 293 cells overexpressing GLUT9; URAT1-293, 293 cells overexpressing URAT1; BEN, benzbromarone.