Table S1. ICRS macroscopic evaluation of cartilage repair

Categories	Scores
Degree of defect repair	
In level with surrounding cartilage	4
75% repair of defect depth	3
50% repair of defect depth	2
25% repair of defect depth	1
No repair of defect depth	0
Integration to border zone	
Complete integration with surrounding cartilage	4
Demarcating border_1 mm	3
Three-quarters of graft integrated, one-quarter with a	2
Notable border_1 mm in width	
One-half of graft integrated with surrounding	1
Cartilage, one-half with a notable border_1 mm	
From no contact to one-quarter of graft integrated	0
With surrounding cartilage	
Macroscopic appearance	
Intact smooth surface	4
Fibrillated surface	3
Small, scattered fissures or cracks	2
Several small or few large fissures	1
Total degeneration of grafted area	0
Overall repair assessment	
Grade I: normal	12
Grade II: nearly normal	8-11
Grade III: abnormal	4-7
Grade IV: severely abnormal	1-3

Table S2. ICRS visual histological assessment scale

Features	Scores
Surface	
Smooth/continuous	3
Discontinuities/irregularities	0
Matrix	
Hyaline	3
Mixture: hyaline/fibrocartilage	2
Fibrocartilage	1
Fibrous tissue	0
Cell distribution	
Columnar	3
Mixed/columnar-clusters	2
Clusters	1
Individual cells/disorganized	0
Cell population viability	
Predominantly viable	2
Partially viable	1
<10% viable	0
Subchondral Bone	

Normal	3
Increased remodeling	2
Bone necrosis/granulation tissue	1
Detached/fracture/callus at base	0
Cartilage mineralization (calcified cartilage)	
Normal	1
Abnormal/inappropriate location	0
Toluidine blue stain	
Normal	4
Slight reduction	3
Moderate reduction	2
Severe reduction	1
No staining	0
Type II collagen staining of the matrix	
Normal or nearly normal	3
Moderate staining	2
Slight staining	1
None	0
	Max 25

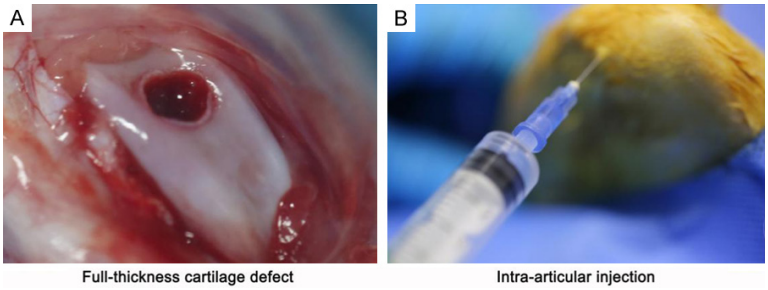

Figure S1. A. A cartilage defect with a 4.0 mm diameter and a 2.5 mm depth was successfully created on the trochlear groove of the knee. B. The intra-articular injection procedure of rabbit SF-MSCs combined with TGF-β3 and KGN was completed successfully three weeks following the model operation.