Figure S1

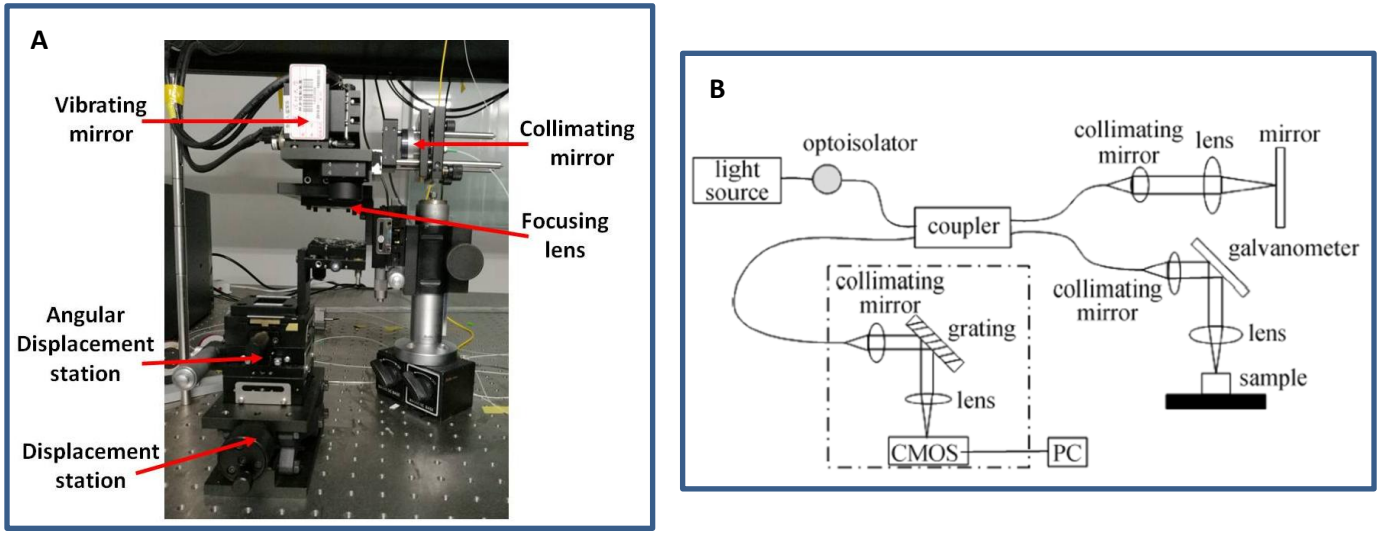

Figure S1. (A) Photograph of the SD-OCT system and (B) schematic. CMOS: complementary metal oxide semiconductor; PC: personal computer. (Achromatic collimating lens, OZ optics Ltd., USA; Spectrometer, Wasatch Photonics, USA; Near infrared achromatic lens, TECHSPEC®NearIRdoublets, Edmundoptics, USA; CMOS camera with 4096 pixels, Basler sprint, SPL4096-140k, USA)

Supplementary Table S1. List of 10 cases to collect AFF samples

Case No.	Age	Gender	Hospitalization No.	Diagnosis	Date of Operation
01	63	F	352684	Left Knee Early-Mid-Stage Osteoarthritis	Sep. 28, 2015
02	57	F	360777	Right Knee Early-Mid-Stage Osteoarthritis	Dec. 26, 2015
03	59	M	362823	Right Knee Early-Mid-Stage Osteoarthritis	Jan. 18, 2016
04	65	M	372084	Right Knee Medial Meniscus Injury	Apr. 27, 2016
05	51	F	384419	Right Knee Medial Meniscus Injury	Aug. 30, 2016
06	51	M	388539	Left Knee Anterior Cruciate Ligament Rupture	Oct. 13, 2016
07	57	M	391067	Right Knee Early-Mid-Stage Osteoarthritis	Nov. 08, 2016
08	53	M	391119	Right Knee Medial collateral ligament injury	Nov. 13, 2016
09	57	F	392965	Right Knee Early-Mid-Stage Osteoarthritis	Nov. 25, 2016
10	45	M	402772	Right Knee Medial Meniscus Injury	Mar. 14, 2017

Supplementary Table S2. List of specific components and concentration for the osteogenic, chondrogenic and adipogenic media

	Components	Concentration
Osteogenic Differentiation Meduim	Basal medium	DMEM-HG + 10% FBS
	Ascorbate-2-phosphate	50 μM
	β-Glycerophosphate	1 mM
	Dexamethasone	10 nM
Chondrogenic Differentiation Meduim	Basal medium	DMEM-HG
	Dexamethasone	100 nM
	Ascorbate-2-phosphate	150 μM
	ITS	1%
	TGF-β3	10 ng/mL
	Sodium Pyruvate	100 μg/mL
Adipogenic Differentiation Medium	Basal medium	DMEM-HG + 10% FBS
	Insulin	10 μM
	IBMX	0.5 mM
	Dexamethasone	1 μM
	Indometacin	200 μM

Supplementary Table S3. Sequences of primers for RT-qPCR analysis

Gene	Size (bp)	Primer Sequence	Type	Tm (℃)
Col-II	140	5'-GAACTGGTGGAGCAGCAAGA-3'	Forward	60
		5'-GCAGGCGTAGGAAGGTCATC-3'	Reverse	
ACAN	152	5'-CAGAACAGTGCCATCATTGC-3'	Forward	58
		5'-AACTCATCCTTGTCTCCATAGC-3'	Reverse	
Sox9	195	5'-AAGCTCGCGGACCAGTACC-3'	Forward	62
		5'-CTGCCCGTTCTTCACCGACTT-3'	Reverse	
GAPDH	189	5'-TGGTATCGTGGAAGGACTCA-3'	Forward	60
		5'-ATGCCAGTGAGCTTCCCGTT-3'	Reverse	