

Supplementary Information

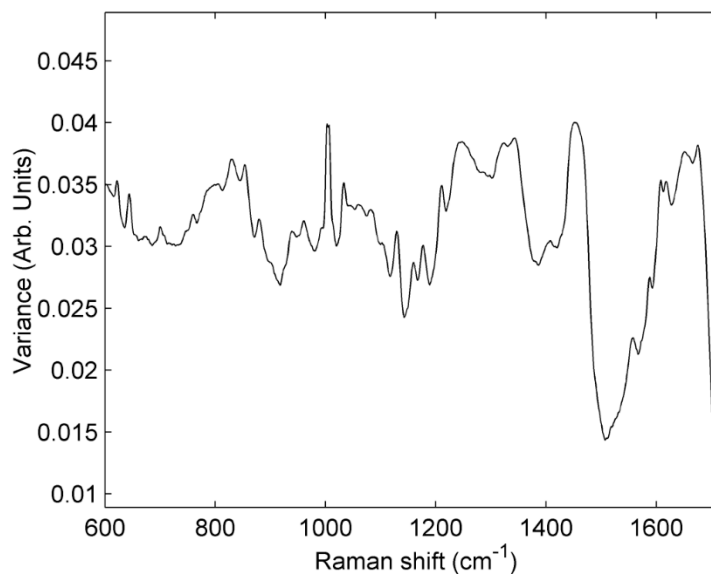


Figure S1. Plot of variance, between the 3 cell types, at each wavelength position of the Raman spectrum.

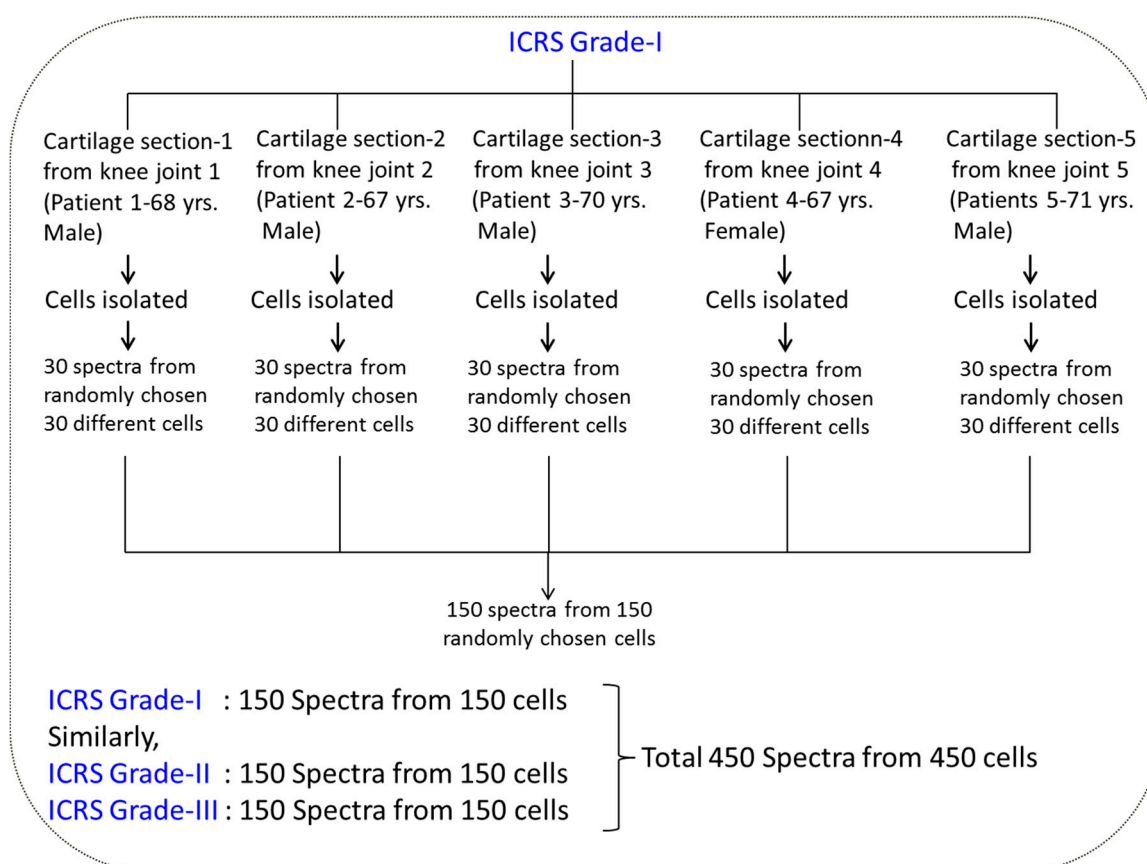


Figure S2. Classification of samples and acquisition of Raman spectra.

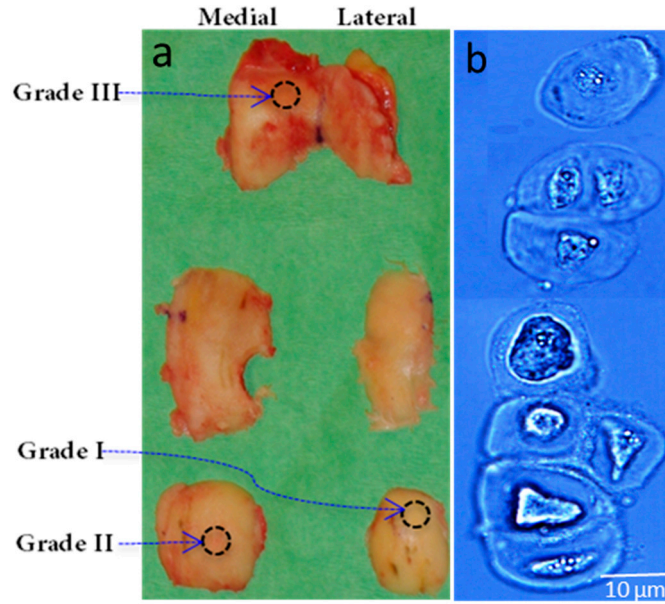


Figure S3. A typical image of (a) the representative area of osteoarthritic (ICRS Grade I, II and III) cartilage sections and (b) the representative bright-field micrographs of isolated human chondrocytes (cells) obtained from osteoarthritic (ICRS Grade-I) cartilage.

Table S1. ICRS grading based on the Outbridge score [38,39].

Grade	Property
I	Soft indentation, superficial lesions, fissures and cracks
II	Fraying, lesions extending down to <50% of cartilage depth
III	Cartilage defects extending down >50% of cartilage depth, loss of cartilage thickness
IV	Complete loss of cartilage thickness, bone only