

A Comparative Analysis of Stem Cell Differentiation on 2D and 3D Substrates using Raman Microspectroscopy

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Supplementary Material

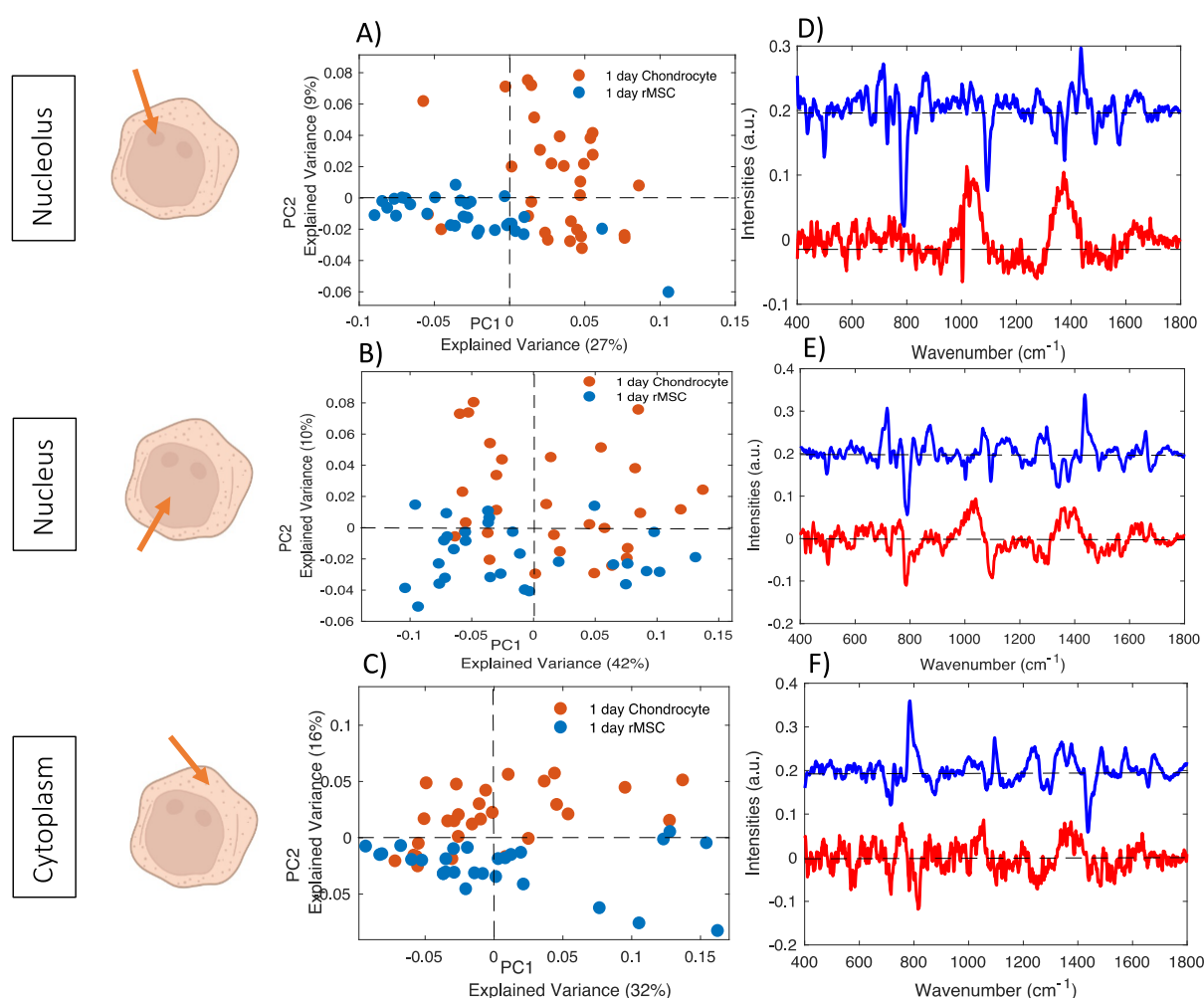


Figure S1. A-B-C) PCA of spectra corresponding to undifferentiated MSC (blue) and of Chondrocyte (red) nucleolus, nucleus and cytoplasm differentiated for 24 hours on 3D collagen I hydrogels. D-E-F) First and second loadings of PCA, blue and red respectively, corresponding to comparison of cellular regions. Loadings are offset for clarity and the dotted line represents the zero '0' line for each loading.

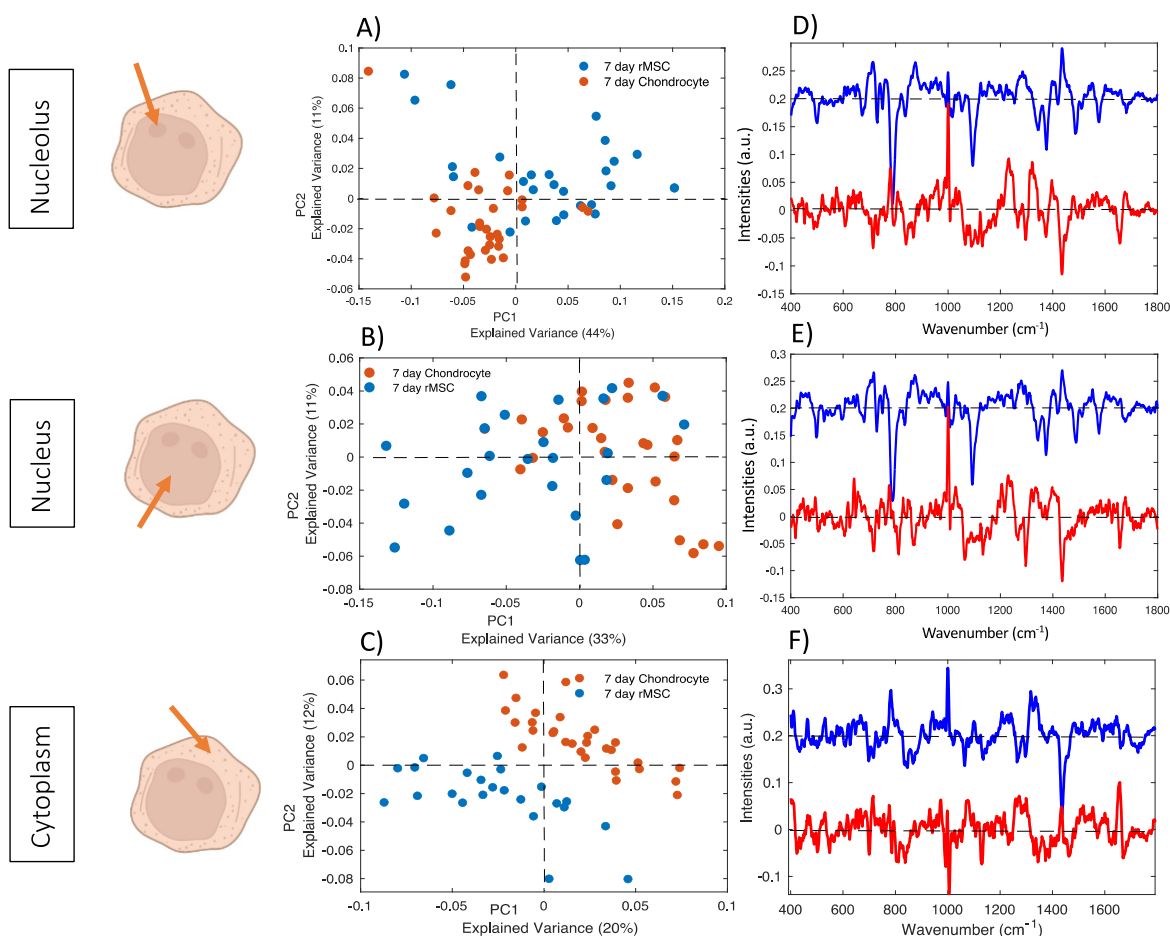


Figure S2. A-B-C) PCA of spectra corresponding to undifferentiated MSC (blue) and of Chondrocyte (red) nucleolus, nucleus and cytoplasm differentiated for 7 days on 3D collagen I hydrogels. D-E-F) First and second loadings of PCA, blue and red respectively, corresponding to comparison of cellular regions. Loadings are offset for clarity and the dotted line represents the zero '0' line for each loading. Notable bands are indicated by highlights.

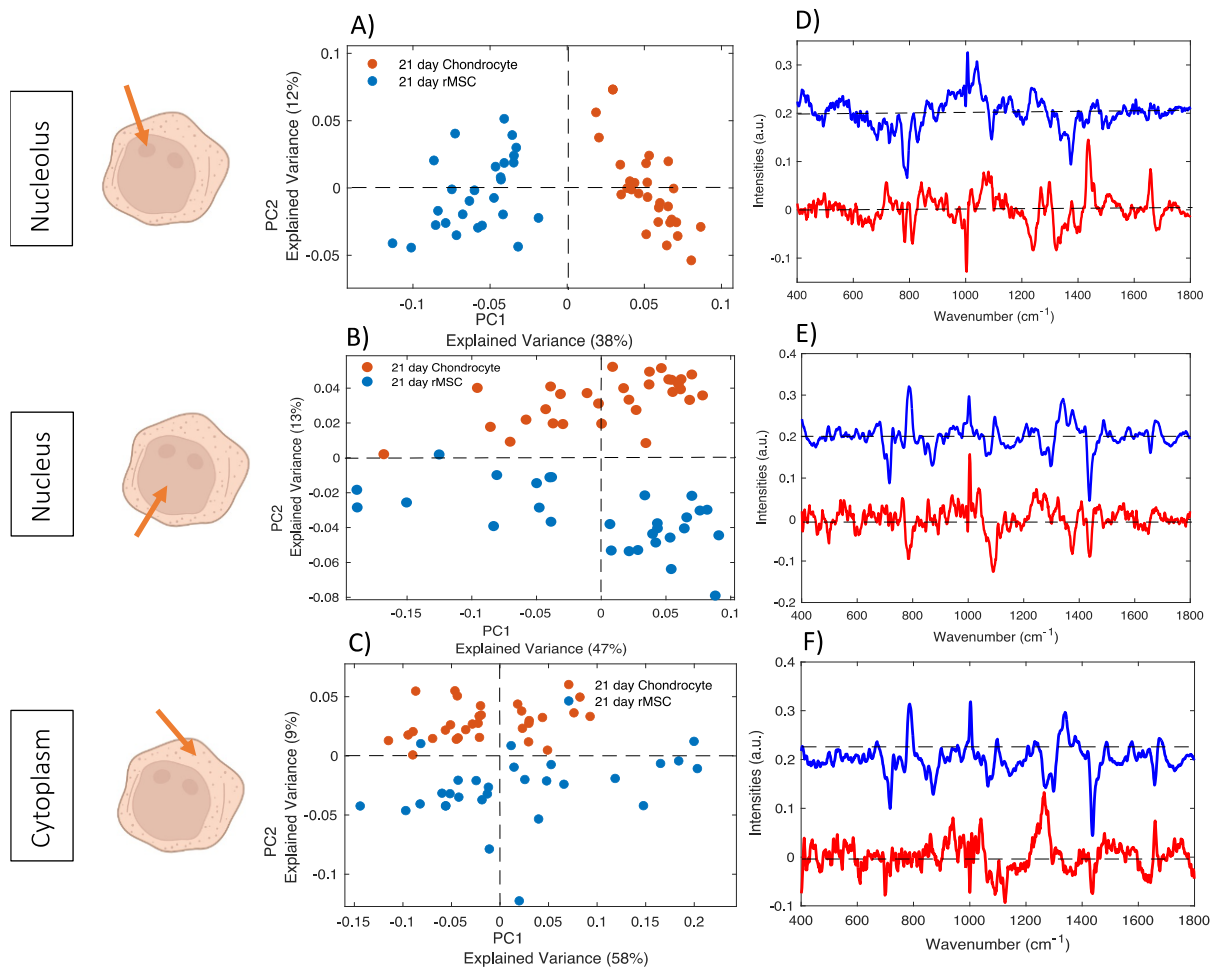


Figure S3. A-B-C) PCA of spectra corresponding to undifferentiated MSC (blue) and of Chondrocyte (red) nucleolus, nucleus and cytoplasm differentiated for 21 days on 3D collagen I hydrogels. **D-E-F)** First and second loadings of PCA, blue and red respectively, corresponding to comparison of cellular regions. Loadings are offset for clarity and the dotted line represents the zero '0' line for each loading. Notable bands are indicated by highlights.

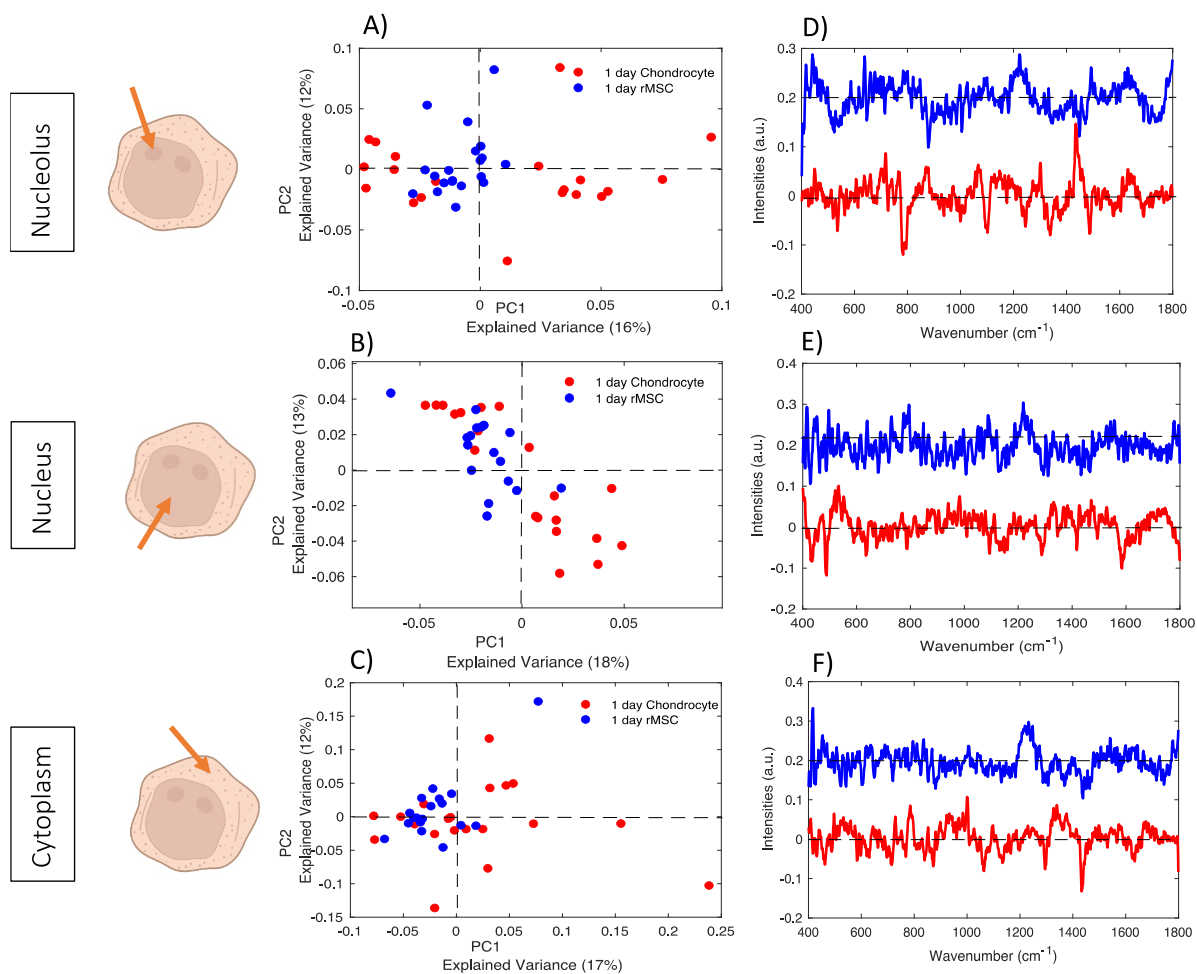


Figure S4. A-B-C) PCA of spectra corresponding to cytoplasm of MSCs (blue) and Chondrocyte (red) for nucleolus, nucleus, and cytoplasm for 24 hours of differentiation on 2D substrates. **D-E-F)** First and second loadings of PCA, blue and red respectively, corresponding to comparison of cellular regions. Loadings are offset for clarity and the dotted line represents the zero '0' line for each loading. Notable bands are indicated by highlights.

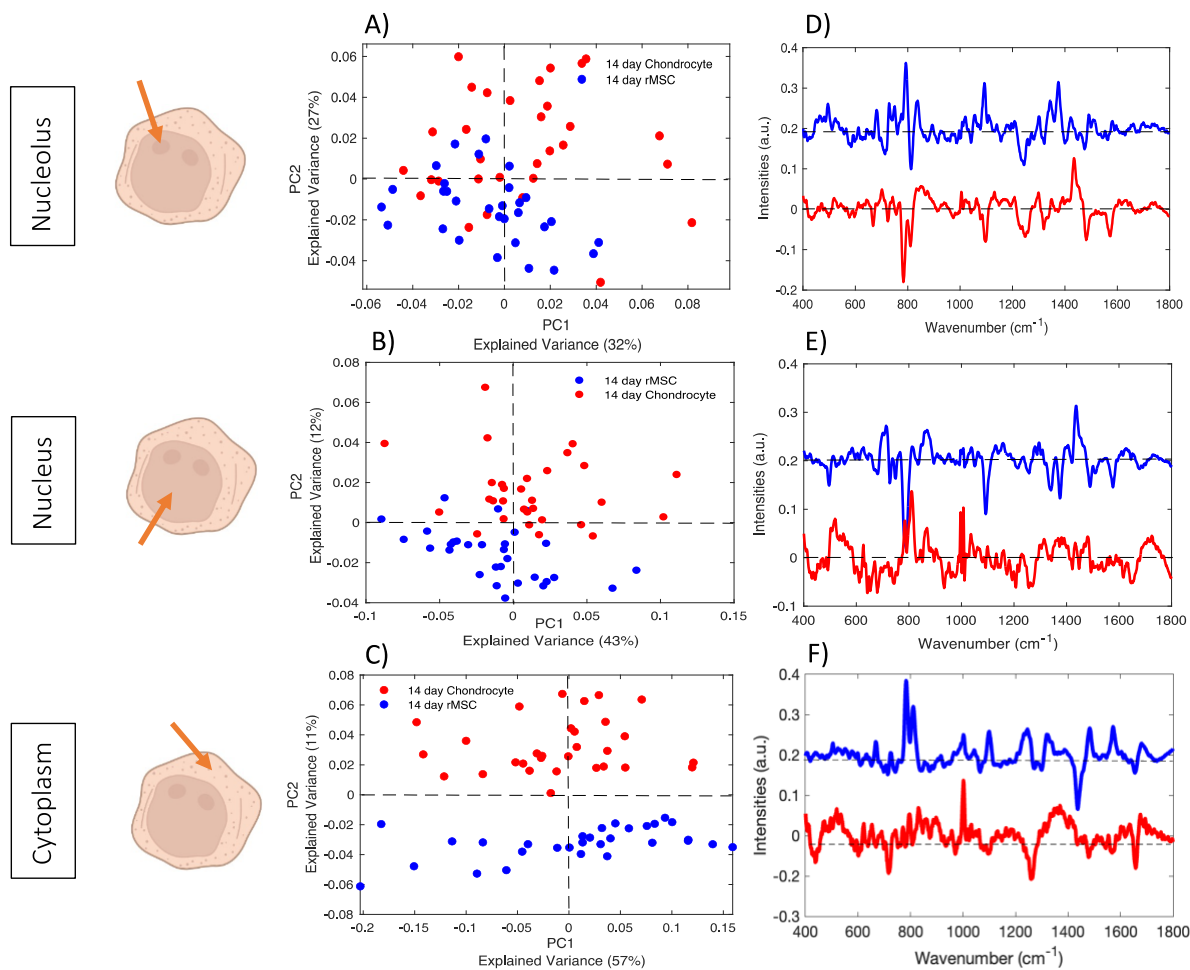


Figure S5. A-B-C) PCA of spectra corresponding to cytoplasm of MSCs (blue) and Chondrocyte (red) for nucleolus, nucleus, and cytoplasm for 7 days of differentiation on 2D substrates. **D-E-F)** First and second loadings of PCA, blue and red respectively, corresponding to comparison of cellular regions. Loadings are offset for clarity and the dotted line represents the zero '0' line for each loading. Notable bands are indicated by highlights.

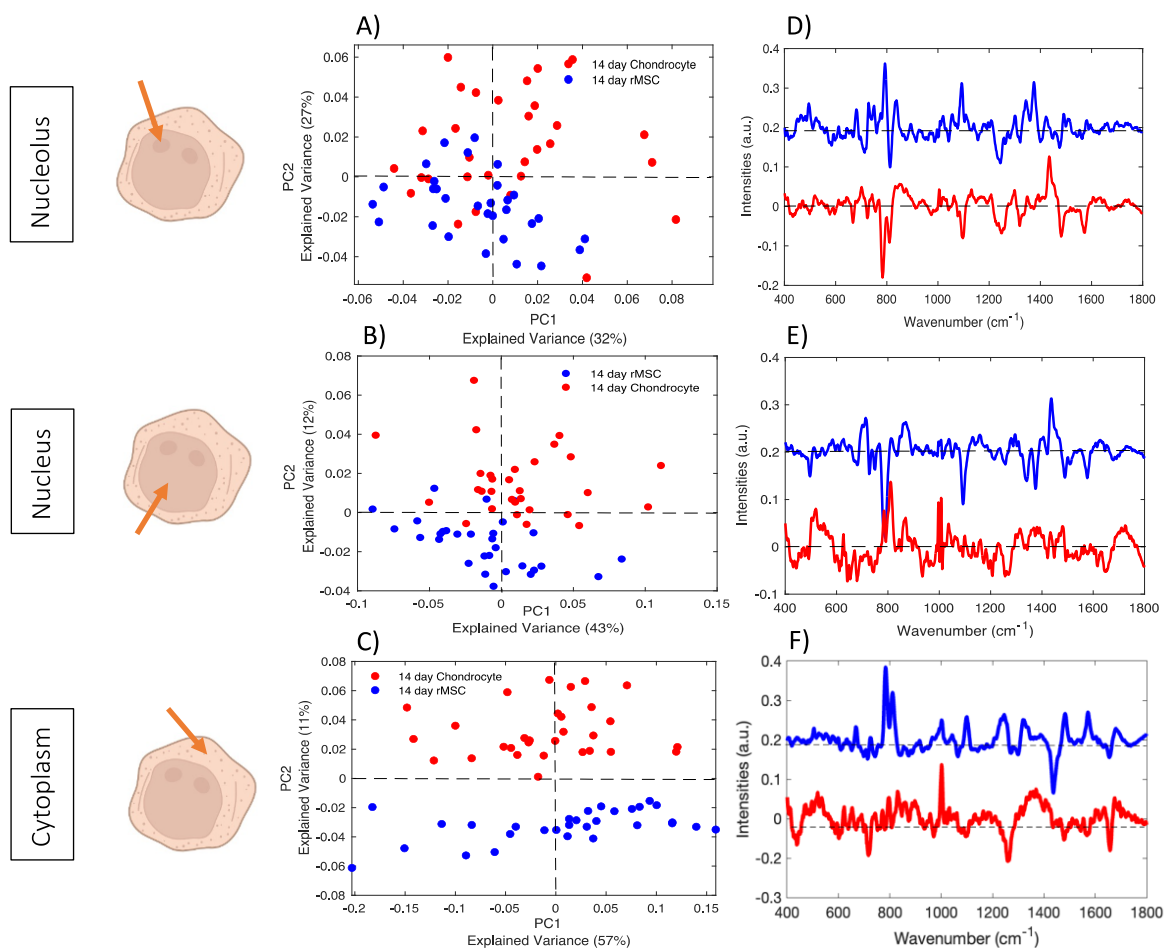


Figure S6. A-B-C) PCA of spectra corresponding to cytoplasm of MSCs (blue) and Chondrocyte (red) for nucleolus, nucleus, and cytoplasm for 14 days of differentiation on 2D substrates. D-E-F) First and second loadings of PCA, blue and red respectively, corresponding to comparison of cellular regions. Loadings are offset for clarity and the dotted line represents the zero '0' line for each loading. Notable bands are indicated by highlights.

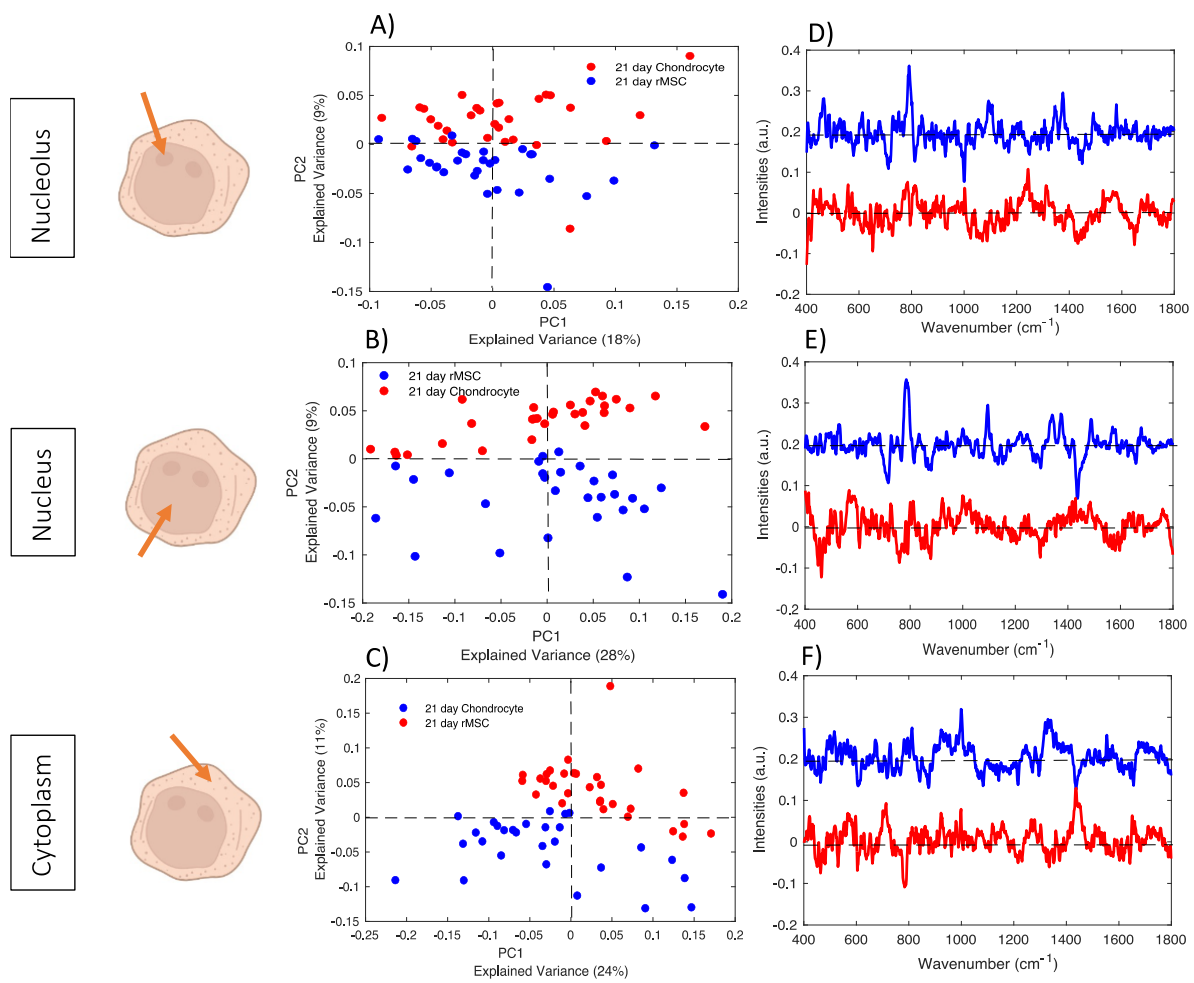


Figure S7. A-B-C) PCA of spectra corresponding to cytoplasm of MSCs (blue) and Chondrocyte (red) for nucleolus, nucleus, and cytoplasm for 21 days of differentiation 2D substrates. D-E-F) First and second loadings of PCA, blue and red respectively, corresponding to comparison of cellular regions. Loadings are offset for clarity and the dotted line represents the zero '0' line for each loading. Notable bands are indicated by highlights.