Supporting information:

Macromolecular profiling of organelles in normal diploid and cancer cells

Svitlana M. Levchenko[1], Andrey N. Kuzmin[2,3], Artem Pliss[2,3], Junle Qu[1], Paras N. Prasad[1,2*]*

*E-mail: jlqu@szu.edu.cn , pnprasad@buffalo.edu

[1] College of Optoelectronic Engineering, Shenzhen University, Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, Shenzhen, Guangdong, China 518060

[2] Institute for Lasers, Photonics and Biophotonics, University at Buffalo, State University of New York, Buffalo, NY 14260-3000

[3] Advanced Cytometry Instrumentation Systems, LLC, 640 Ellicott Street – Suite 499, Buffalo, NY

Abstract: This supporting materials contains information about Raman spectrum of the biomolecules (proteins, lipids, RNA and DNA) that were used as the reference spectra for the BCA analysis (Figure S1). It also contains representative Raman spectra of nucleolus in HeLa cell, including raw spectra, same nucleolus; averaged raw spectrum; preprocessed spectrum of nucleolus, model and residual Raman profile of nucleolus after subtraction model from the measured Raman spectrum (Figure S2). Figure S3 represents the information about different projection of 3D data sets used in paper text (Figure 3).

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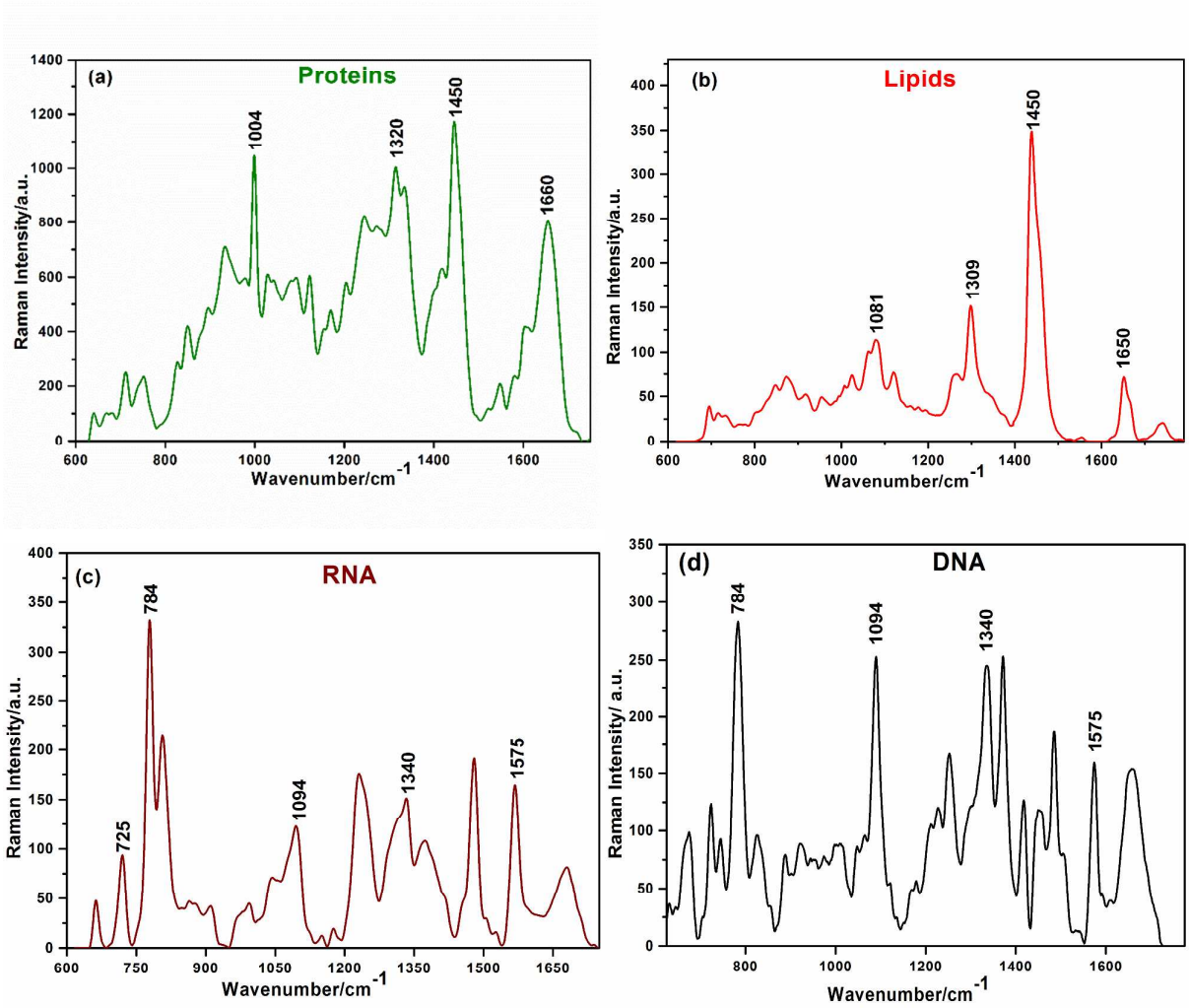
Figure S1: Raman spectrum of the proteins (a), lipids (b), RNA (c) and DNA (d) that were used as the reference spectra for the BCA analysis

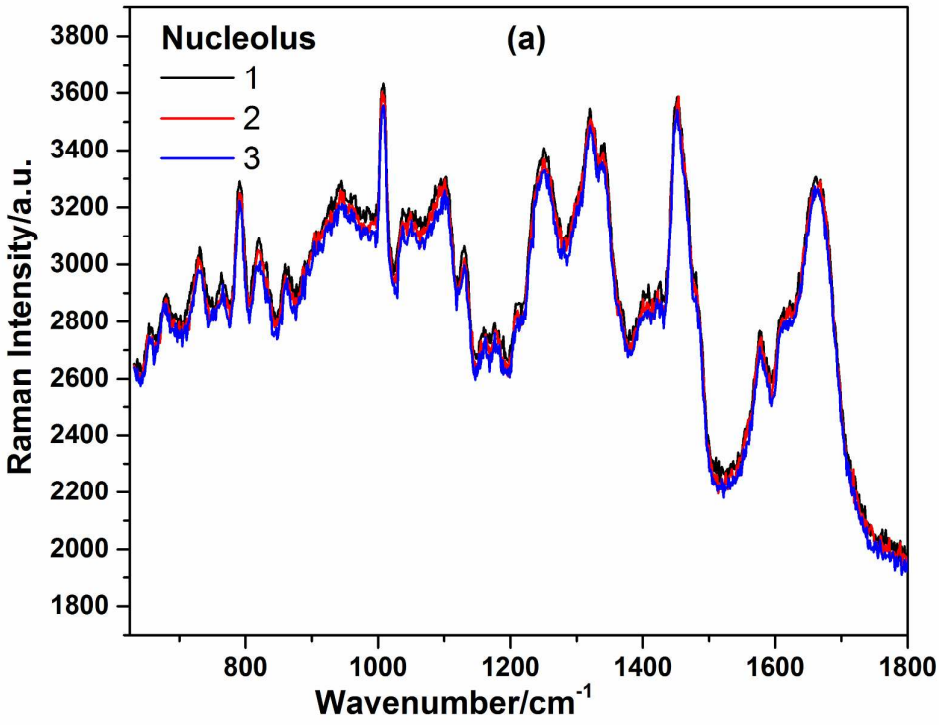
Figure S2: Representative Raman spectra of nucleolus in HeLa cell: (a) raw spectra, same nucleolus; (b) averaged raw spectrum; (c) preprocessed spectrum of nucleolus, model and residual Raman profile nucleolus after subtraction model from the measured Raman spectrum; (d) model shown in (c) and weighted components used for this model

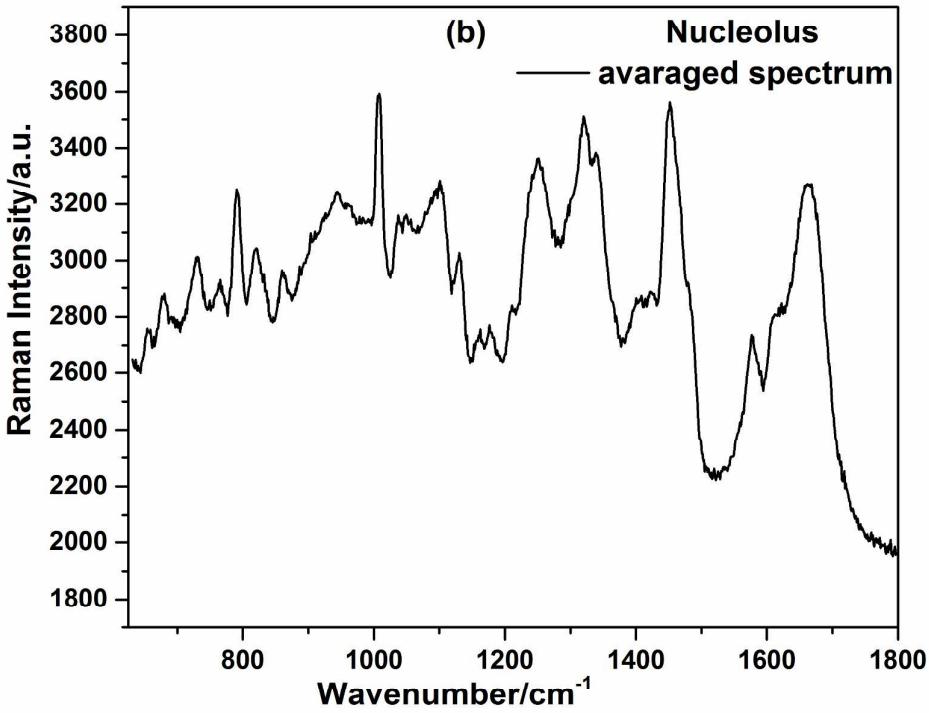
Figure S3: Distributions of concentrations of lipids (a, b) and RNA (c, d) versus concentrations of proteins, and lipids versus concentration of RNA (e, f) in nucleoli, ER and mitochondria of HeLa and WI-38 cells

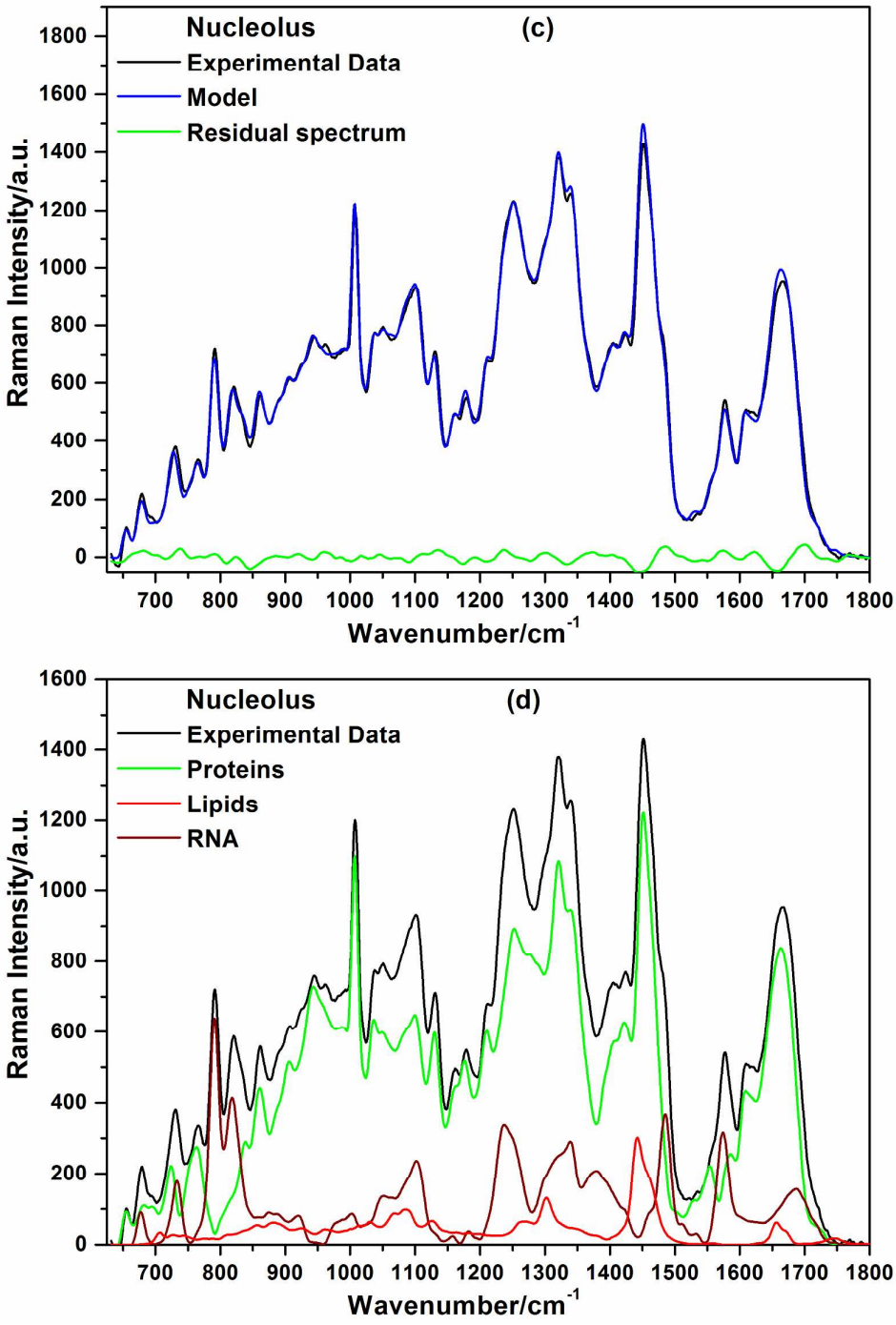
References



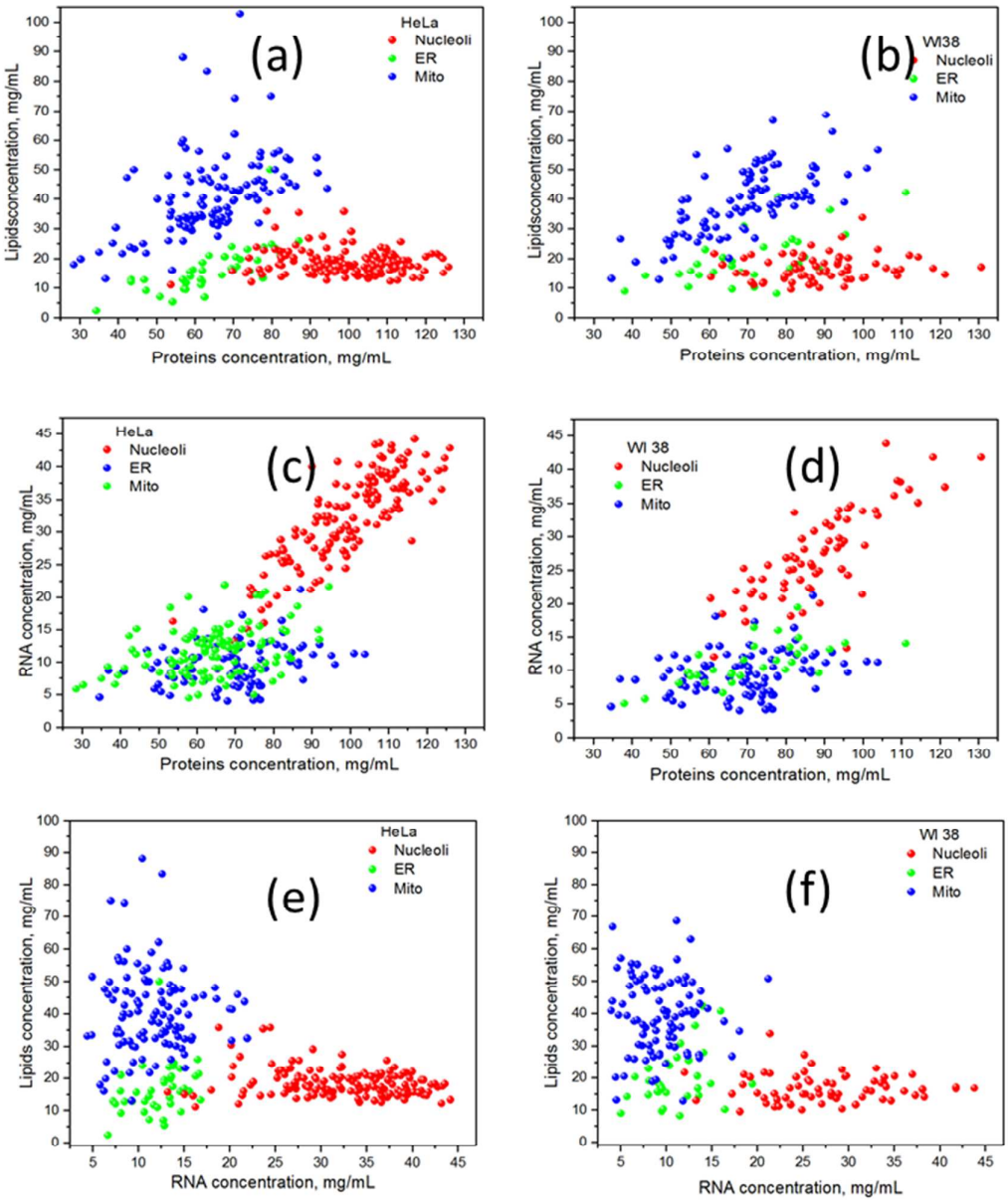
Supplemental Figure S1. Raman spectrum of the proteins (a), lipids (b), RNA (c) and DNA (d) that were used as the reference spectra for the BCA analysis [1].


Nucleolus
(a)
1
2
3
Raman Intensity/a.u.
Wavenumber/cm-1
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
800
1000
1200
1400
1600
1800


(b)
Nucleolus
avaraged spectrum
Raman Intensity/a.u.
Wavenumber/cm-1
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
800
1000
1200
1400
1600
1800



Supplemental Figure S2. Representative Raman spectra of nucleolus in HeLa cell: (a) raw spectra, same nucleolus; (b) averaged raw spectrum; (c) preprocessed spectrum of nucleolus, model and residual Raman profile nucleolus after subtraction model from the measured Raman spectrum; (d) model shown in (c) and weighted components used for this model.



Supplemental Figure S3. Distributions of concentrations of lipids (a, b) and RNA (c, d) versus concentrations of proteins, and lipids versus concentration of RNA (e, f) in nucleoli, ER and mitochondria of HeLa and WI-38 cells.

References

[1] A. N. Kuzmin, Pliss A., Kachynski A. V. *Journal of Raman Spectroscopy* **2013**, *44*, 198.