# Supplementary Material

## Detection of bleomycin-induced DNA strand breaks and repair processes in living cells by Raman microscopy

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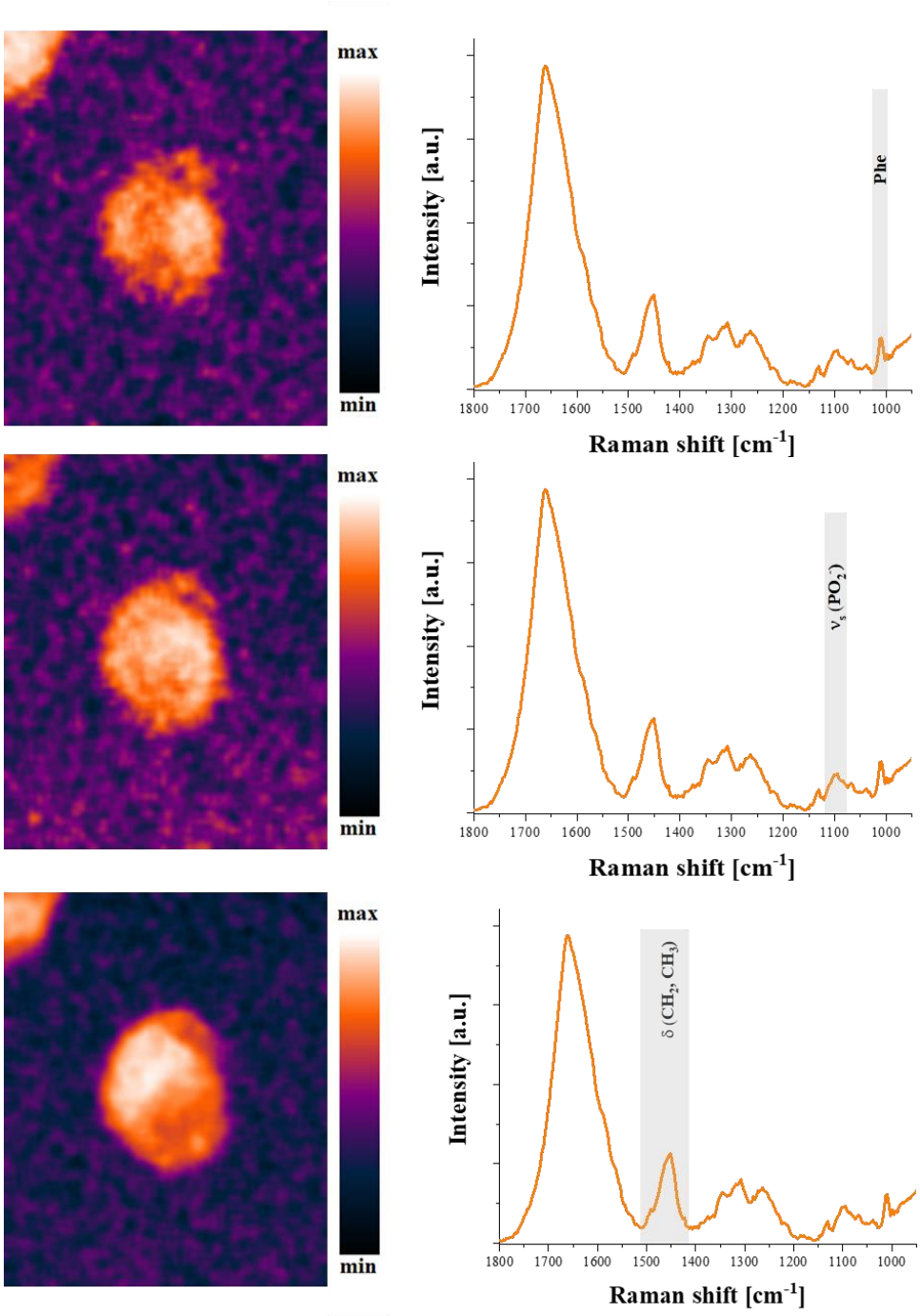


**Figure S1.** Raman maps presenting distribution of intensities of characteristic bands of specific biochemical compounds in control HeLa cell. At the top: distribution of proteins (Phe); center: nucleic acids and phospholipids $\nu_s(PO_2^-)$; bottom: lipids and proteins $\delta(CH_2, CH_3)$.

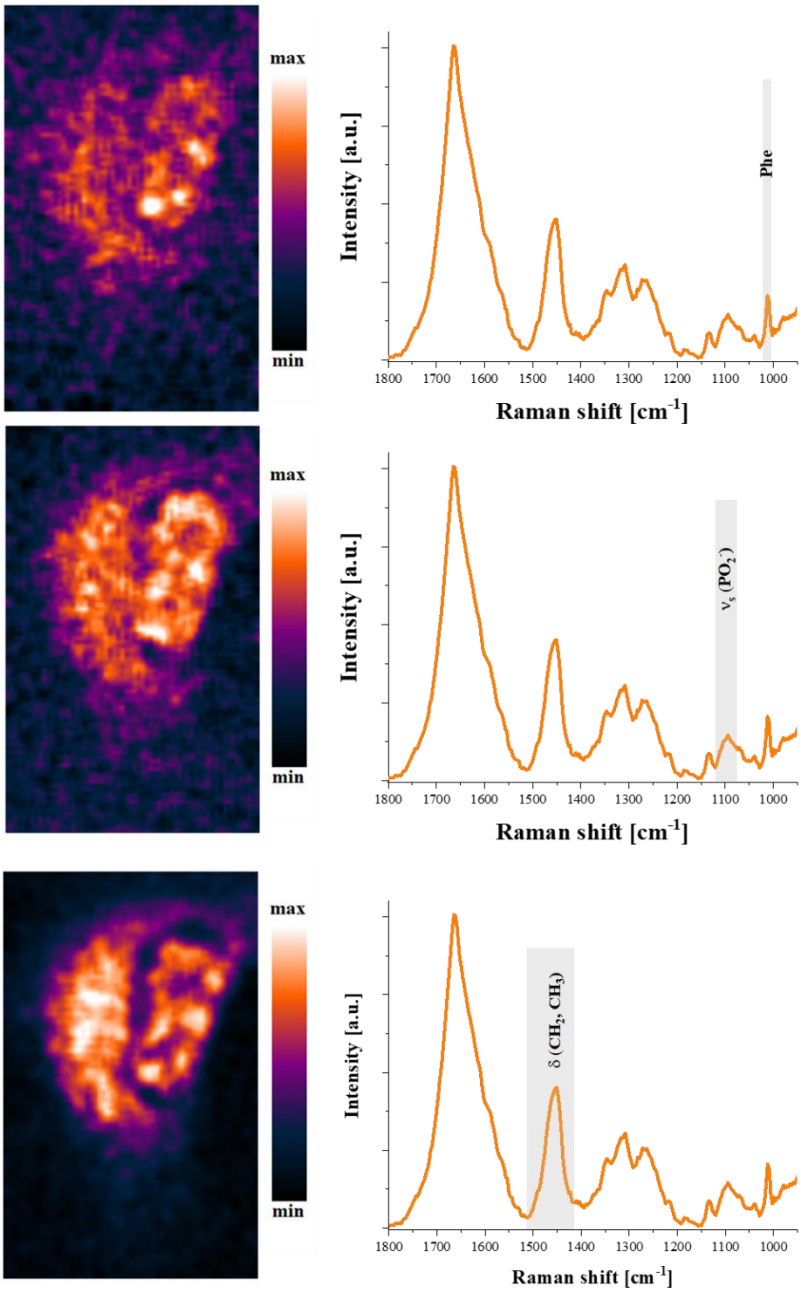


**Figure S2.** Raman maps presenting distribution of intensities of characteristic bands of specific biochemical compounds in HeLa cell incubated with 150 μM of bleomycin. At the top: distribution of proteins (Phe); center: nucleic acids and phospholipids $\nu_s(PO_2^-)$; bottom: lipids and proteins $\delta(CH_2, CH_3)$.

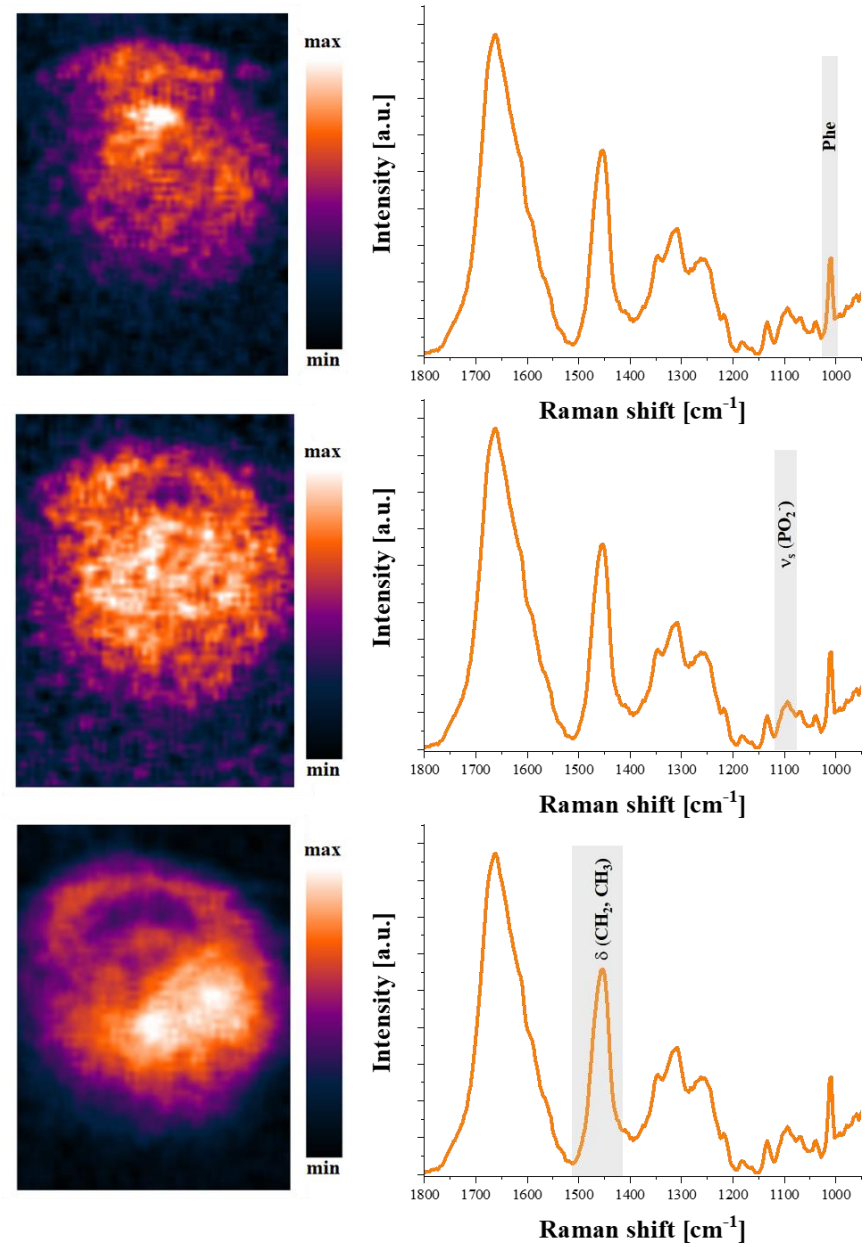


**Figure S3.** Raman maps presenting distribution of intensities of characteristic bands of specific biochemical compounds in HeLa cell incubated with 500 μM of bleomycin. At the top: distribution of proteins (Phe); center: nucleic acids and phospholipids $\nu_s(PO_2^-)$; bottom: lipids and proteins $\delta(CH_2, CH_3)$.

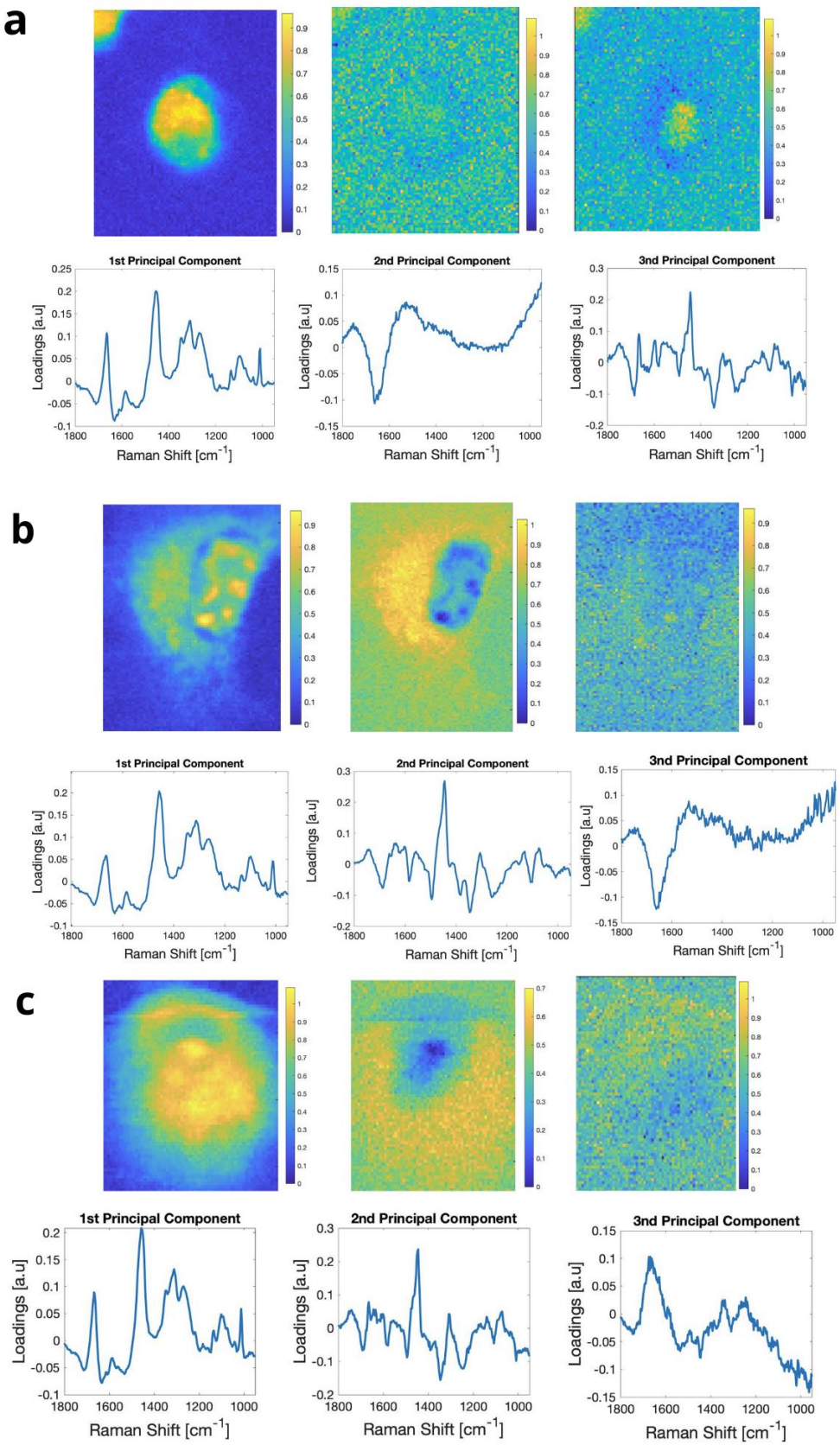


**Figure S4.** Distribution of PCs within Raman map of HeLa cells: (**a**) control, (**b**) incubated with 150 μM BLM, (**c**) incubated with 500 μM BLM. Loadings corresponding to three principal components are also presented.

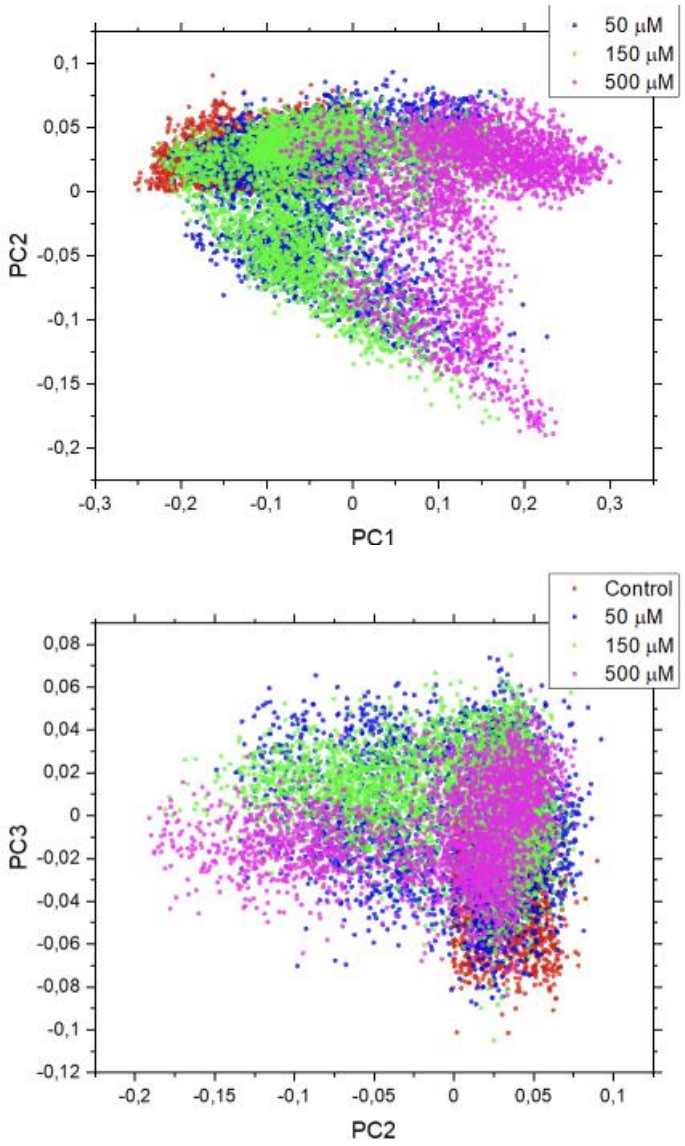


**Figure S5.** 2D PCA scores plots of Raman spectra of cellular nuclei of control HeLa cells and cells incubated with bleomycin (50 μM, 150 μM and 500 μM) for 24 h.

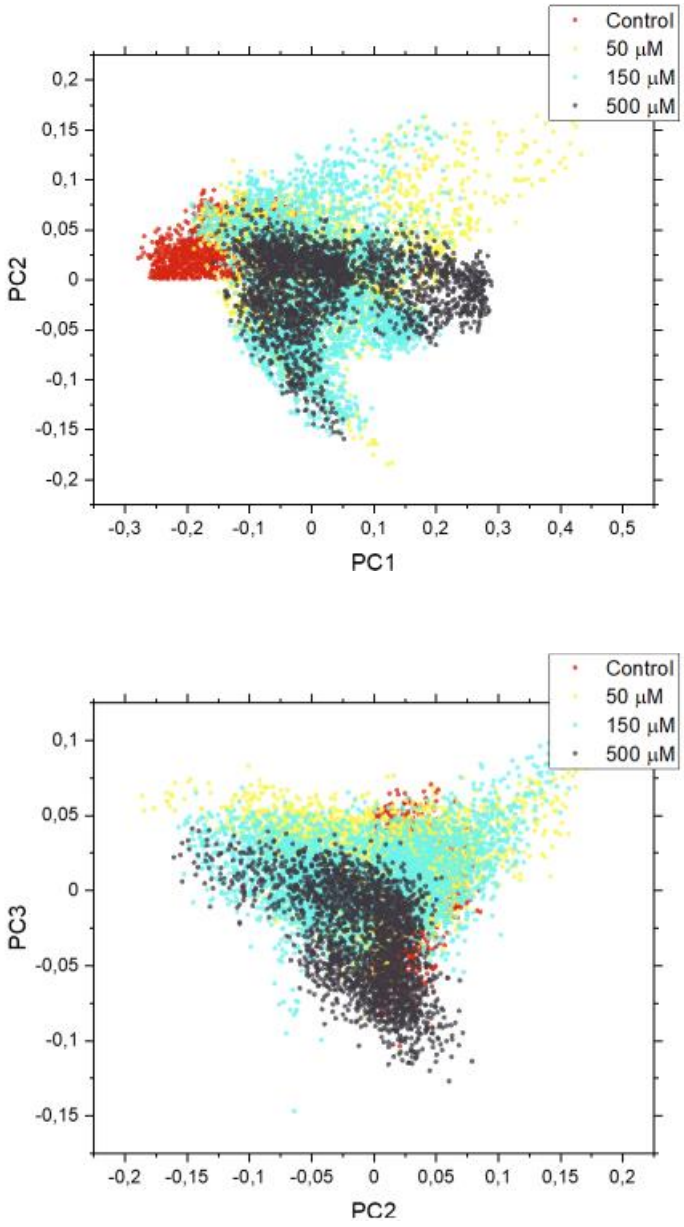


**Figure S6.** 2D PCA scores plots of Raman spectra of cellular nuclei of control HeLa cells and cells incubated with bleomycin (50 μM, 150 μM and 500 μM) for 48 h.

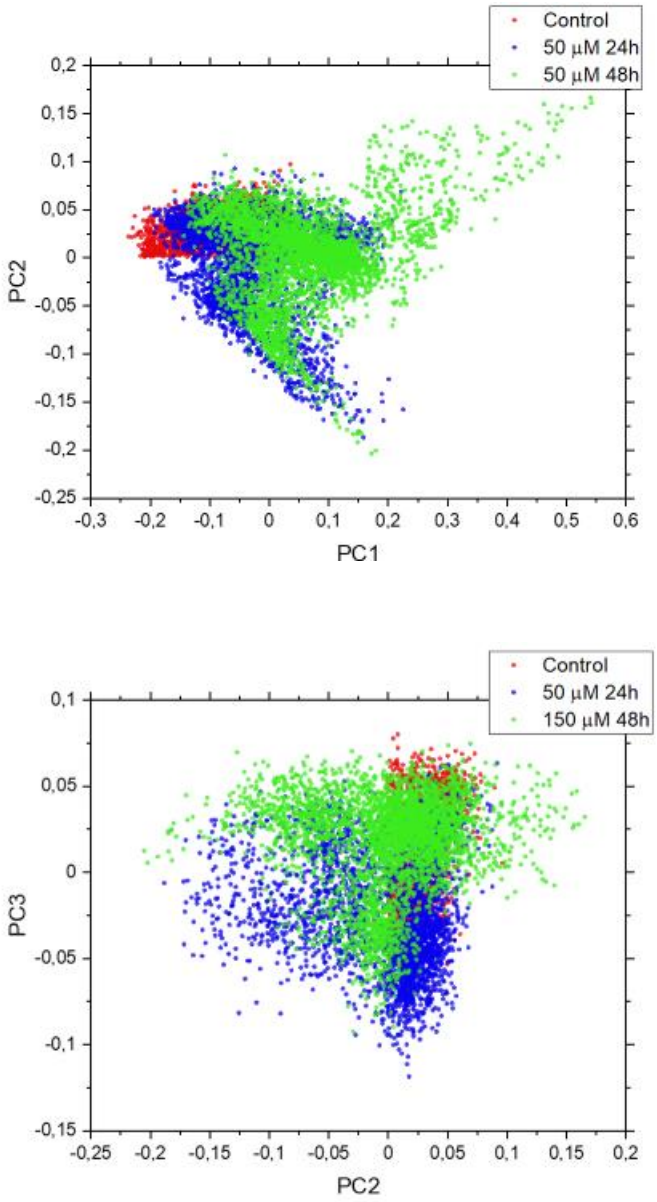


**Figure S7.** 2D PCA scores plots of Raman spectra acquired from nuclei of control cells and cells treated with 50 µM of BLM for 24 and 48 h.

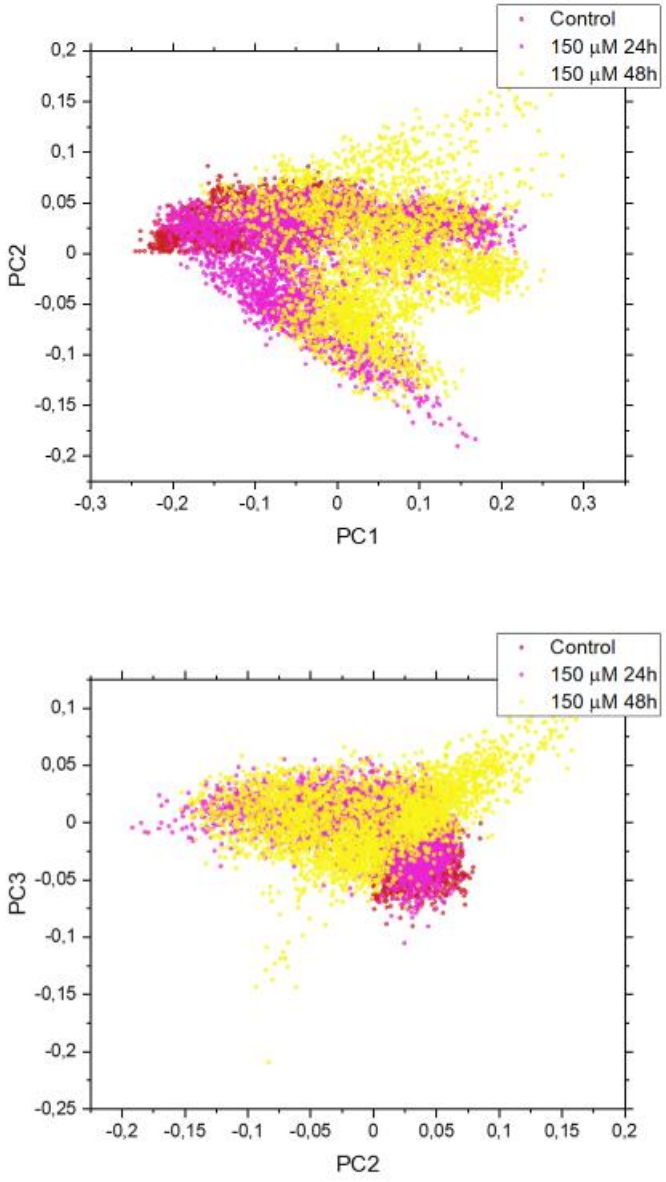


**Figure S8.** 2D PCA scores plots of Raman spectra acquired from nuclei of control cells and cells treated with 150 µM of BLM for 24 and 48 h.

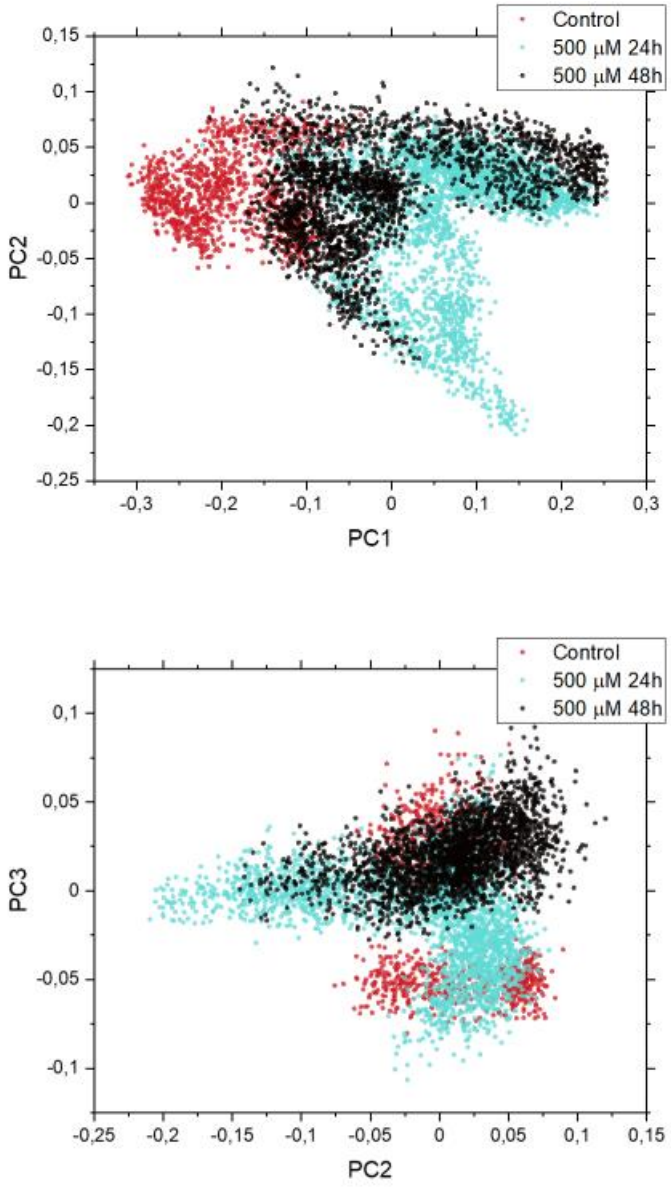


**Figure S9.** 2D PCA scores plots of Raman spectra acquired from nuclei of control cells and cells treated with 500 μM of BLM for 24 and 48 h.