SUPPORTING INFORMATION

Exploring the Cellular Antioxidant Mechanism Against Cytotoxic Silver Nanoparticles: A Raman Spectroscopic Analysis

*Davide Redolfi-Bristol,[*1,3,7] Kenta Yamamoto,[3] Elia Marin,[1,8,9] Wenliang Zhu,[1] Osam Mazda,[3] Pietro Riello,[7] Giuseppe Pezzotti,[*1,2,3,4,5,6,7]*

[1] Ceramic Physics Laboratory, Kyoto Institute of Technology, Sakyo-ku, Matsugasaki, 606-8585, Kyoto, Japan

[2] Department of Molecular Genetics, Institute of Biomedical Science, Kansai Medical University, 2-5-1 Shinmachi, Hirakata, Osaka 573-1010, Japan

[3] Department of Immunology, Kyoto Prefectural University of Medicine, 465 Kajii-cho, Kamigyo-ku, Kyoto, 602-8566, Japan

[4] Department of Dental Medicine, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, 465 Kajii-cho, Kamigyo-ku, Kyoto 602-8566, Japan

[5] Department of Orthopedic Surgery, Tokyo Medical University, 6-7-1 Nishi-Shinjuku, Shinjuku-ku, 160-0023 Tokyo, Japan

[6] Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy

[7] Dipartimento di Scienze Molecolari e Nanosistemi, Università Ca' Foscari di Venezia, Via Torino 155, 30172 Venezia, Italia

[8] Department Polytechnic of Engineering and Architecture, University of Udine, 33100, Udine, Italy

[9] Biomedical Research Center, Kyoto Institute of Technology, Sakyo-ku, Matsugasaki, Kyoto 606-8585, Japan

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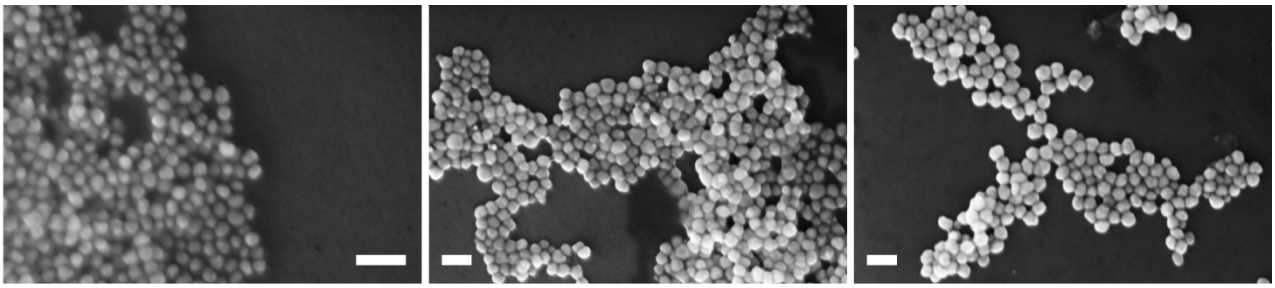

Figure S1. SEM images of (a) $AgNPs_{30nm}$, (b) $AgNPs_{40nm}$ and (c) $AgNPs_{45nm}$ (scale bar: 100 nm)

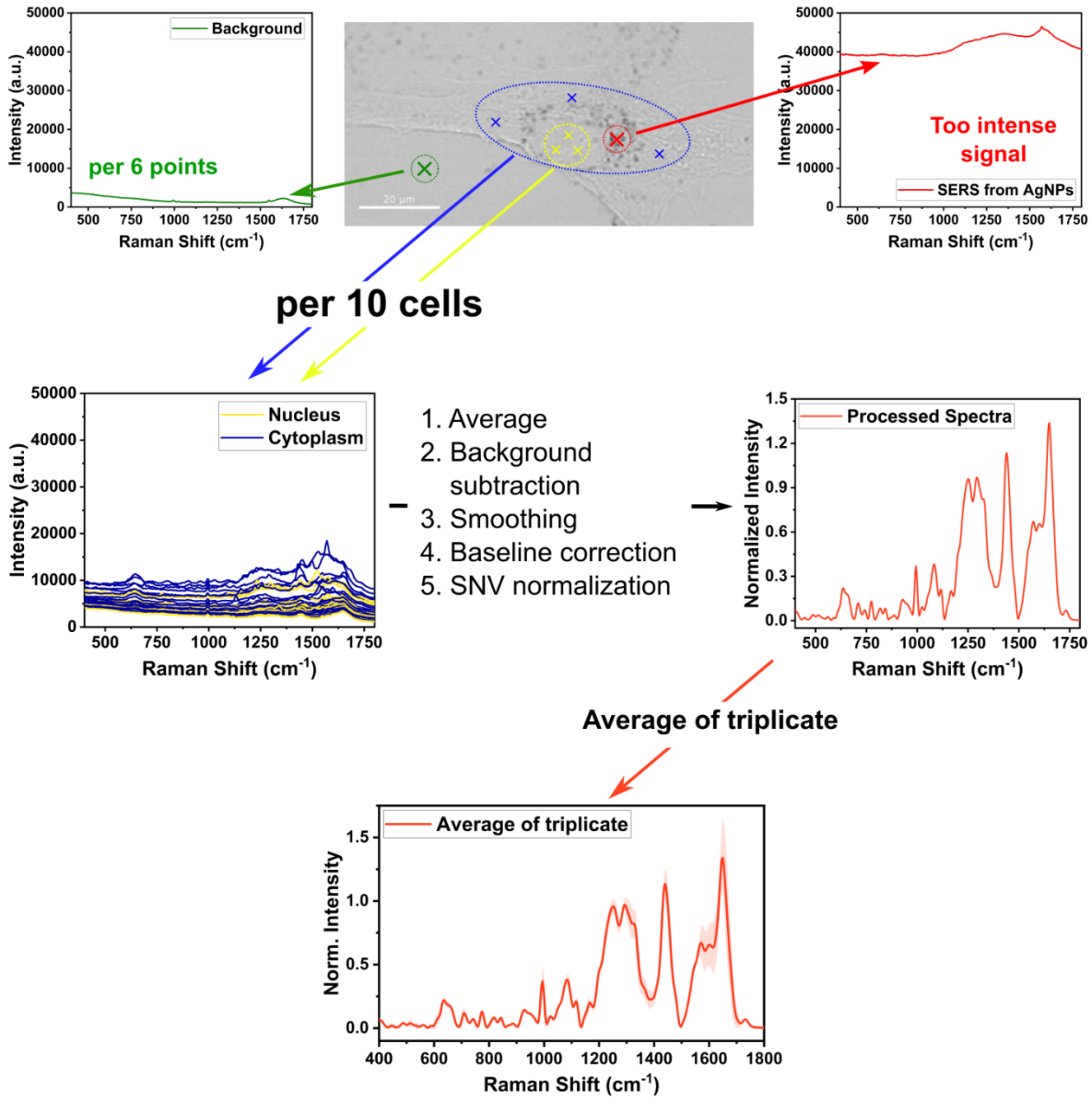

Figure S2. Representative Raman spectra acquisition processing steps: (i) acquisition of 6 punctual spectra per cell (3 from the cytoplasm and 3 from the nucleus) from ten cells per sample and 6

punctual spectra of background, trying to avoid AgNPs aggregates that could have given rise to intense SERS phenomenon; (ii) data processing through (1) average between al acquired spectra, (2) subtraction of the averaged background spectra, (3) Savitsky-Golay smoothing (Degree 2, Size 7, Height 11), (4) baseline correction (manually selecting the points representative of the background) and (5) standard normal variate (SNV) normalization; (iii) averaging of the resulting spectra between three replicates.

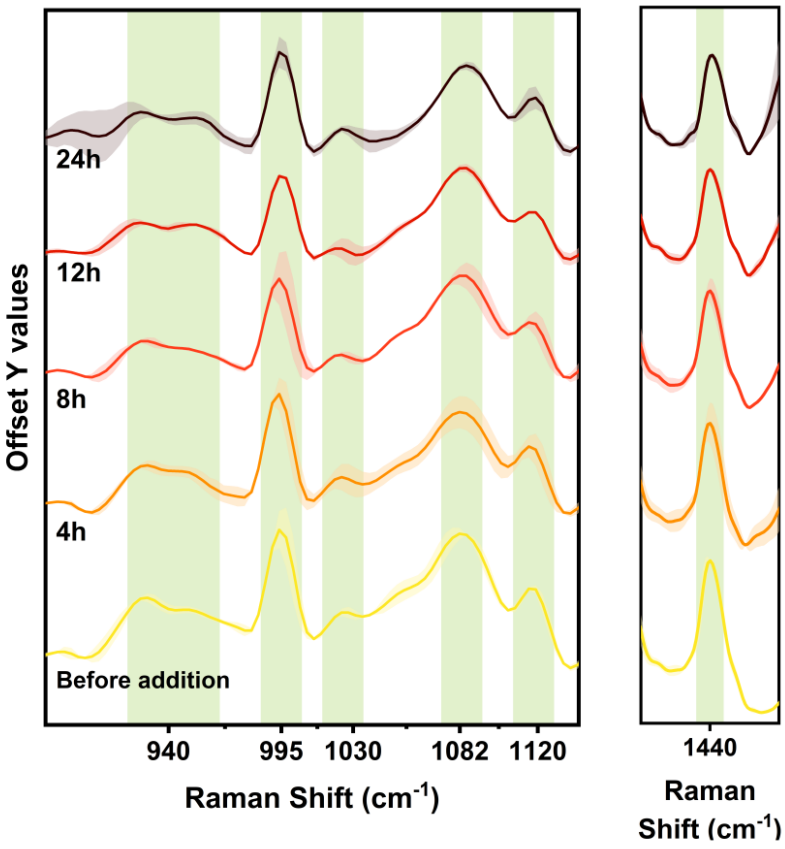

Figure S3. Magnification of the time-dependent Raman spectra collected from HDF cells exposed to $AgNPs_{35nm}$ (10 µg/mL) highlighting intensity decrease of protein and lipids bands

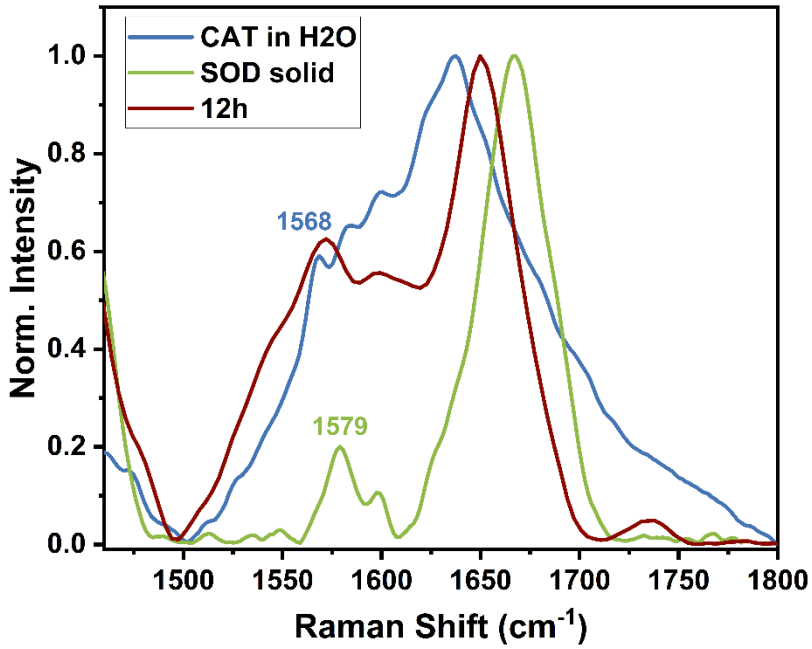

Figure S4. Raman spectrum of a selected region representative of HDF cells exposed to AgNPs for 12 h compared to the corresponding region of the Raman spectrum for CAT and SOD. SOD spectrum has been acquired for solid sample, since the signal was too low when dispersed in water.