

## SUPPORTING INFORMATION

### Cell “Vision”: Complementary Factor of Protein Corona in NanoToxicology

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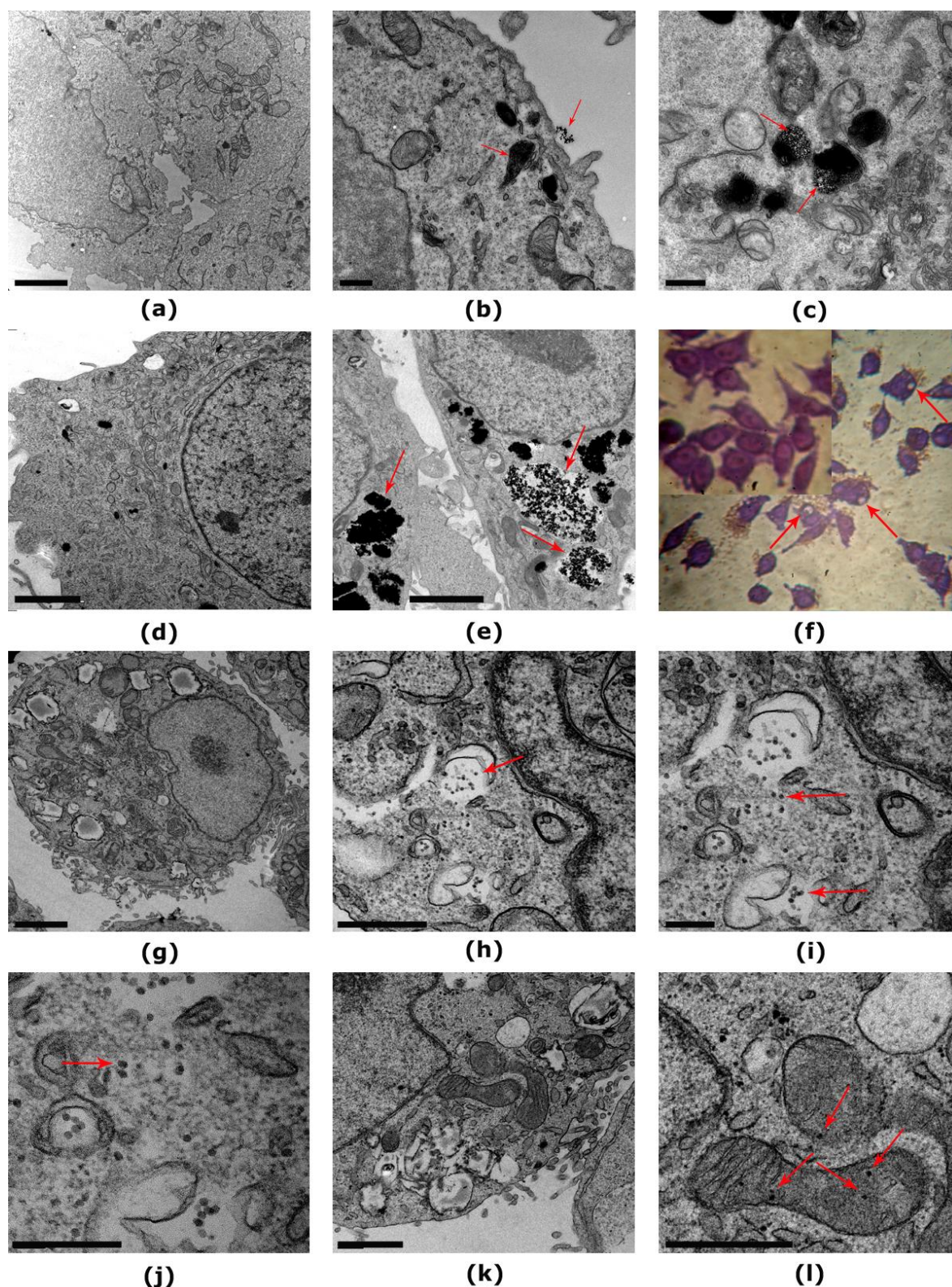
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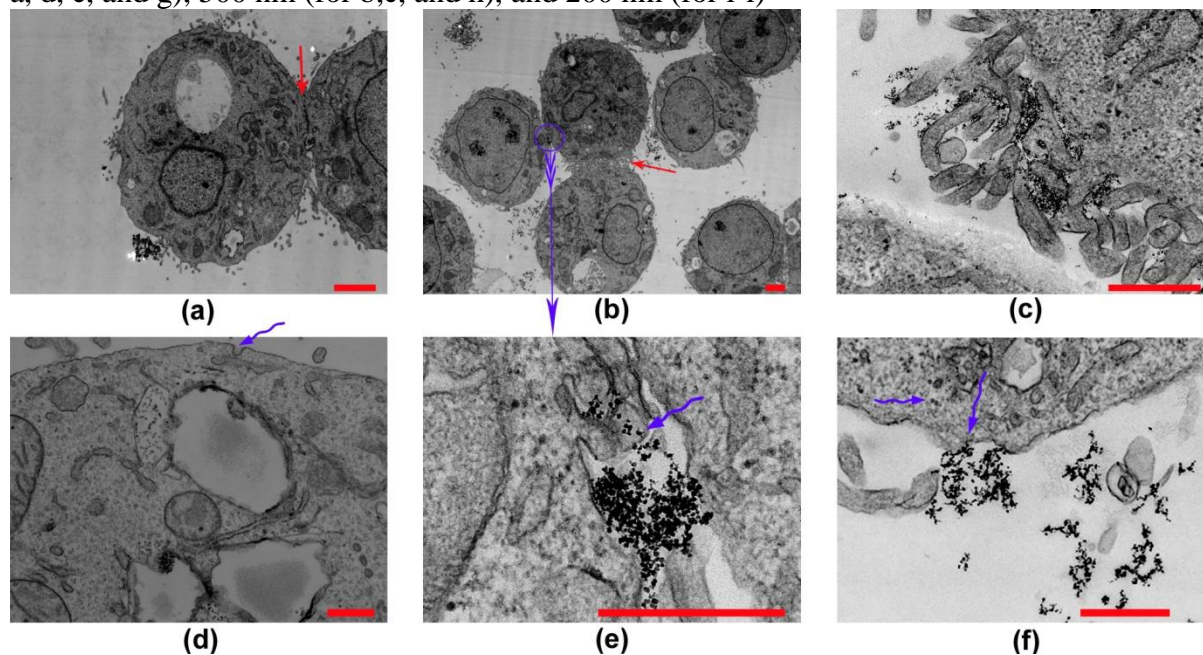
**Table S1:** Description of the cell lines used in MTT and XTT studies (DMEM: Dulbecco's modified Eagle's medium; Ham's: Nutrient Mixture F-10; FBS: fetal bovine serum; RPMI-1640 (Roswell Park Memorial Institute))

<b>Cell Code</b>	<b>Cell Type</b>	<b>Culture Medium</b>
BE(2)-C	Human neuroblastoma	1:1 (DMEM+Ham's F12)+FBS10%
A172	Human glioblastoma	DMEM+FBS10%
HCM	Human cardiac myocytes	1:1 (DMEM+Ham's F12)+FBS10% supplemented with 5µg/ml Insulin & 50 ng/ml bFGF
A549	Human lung adenocarcinoma	DMEM+FBS10%
Hep G2	Human hepatocellular carcinoma	RPMI 1640+FBS10%
A-431	Human epithelial carcinoma	DMEM+FBS10%
293T	Human Embryonic Kidney	RPMI 1640+FBS10%
SW480	Human colon adenocarcinoma	DMEM+FBS10%
HeLa	Human cervical adenocarcinoma	MEM+FBS10%
Capan-2	Human pancreas adenocarcinoma	RPMI+FBS10%
Panc-1	Human pancreatic carcinoma	DMEM+FBS10%
Jurkat	Human T cell lymphoblast-like	RPMI +FBS10%
L929	Mouse connective tissue fibroblast	RPMI+FBS10%



**Figure S1:** TEM images of HeLa cells before (a) and after (b,c) treatment with SPIONs showing the formation of lysosomes filled by SPIONs inside the cells; TEM images of L929 cells before (d) and after (e) treatment with SPIONs showing the entrance of NPs inside the cells which caused the formation of gas vesicle; (f) light microscope ( $\times 400$ ) of stained cells with crystal violet showing the formation of gas vesicles (see red arrows); Inset at the top left is the light microscope ( $\times 400$ ) of the stained-control cells; (g) TEM images of control HepG2 cells and (h-j) various magnification of TEM images of SPIONs-treated cells confirming the

existence of SPIONs in whole intracellular environment with no traceable vesicles/lysosomes; (k) and (l) showing the safe entrance of SPIONs in mitochondria; the scale bars are 2  $\mu\text{m}$  (for a, d, e, and g), 500 nm (for b, c, and h), and 200 nm (for i-l)



**Figure S2:** TEM images of HepG2 cells after treatment with SPIONs showing the formation of colonies via (a) tight junction and (b) membrane junction process. TEM images display the (c) trapping of SPIONs inside the membrane junction and SPIONs uptake pathways via (d) vesicle, (e) and (f) diffusion pathways.

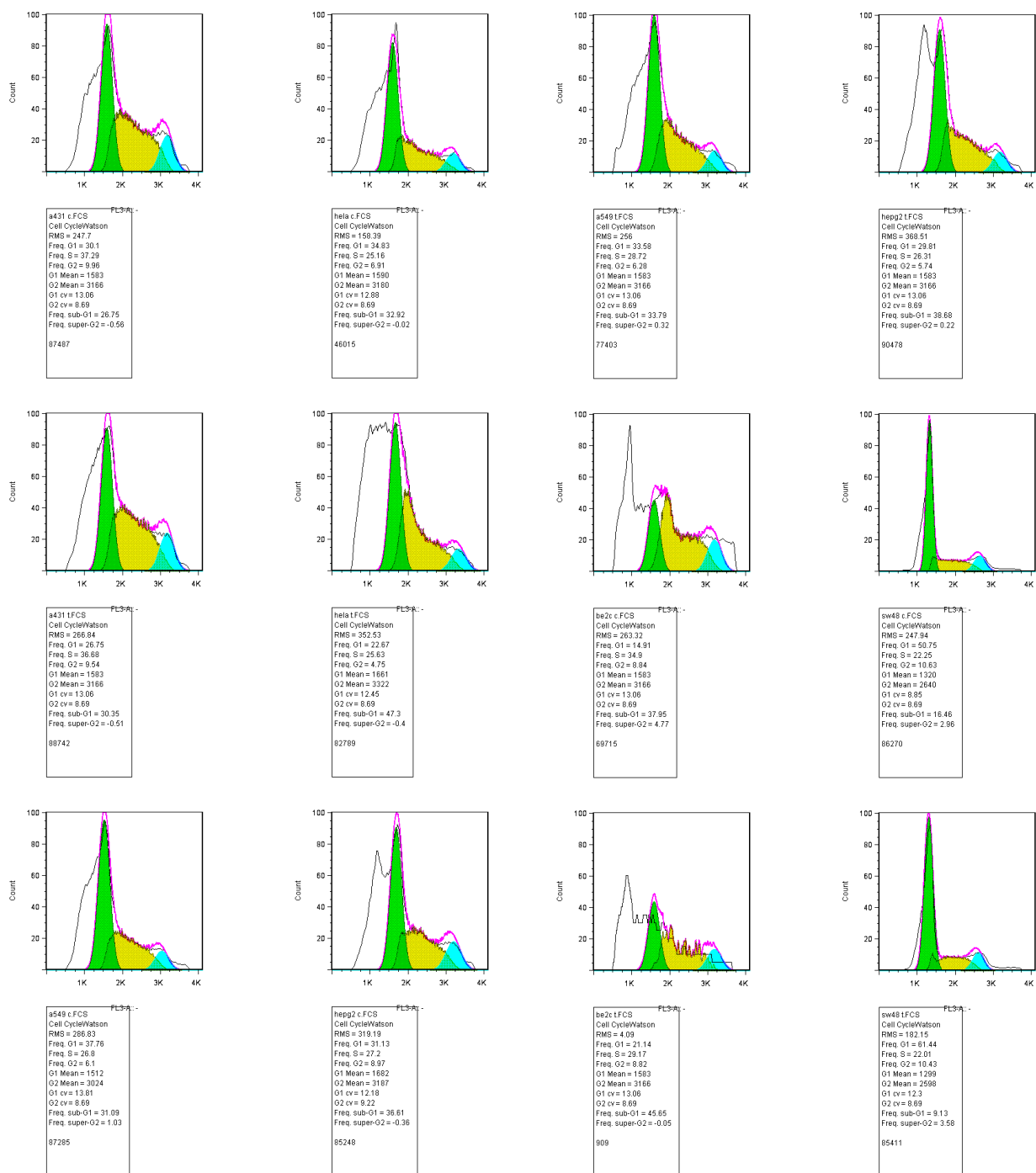


Figure S3: Example of the analyzed cell-life cycle assays

**Table S2:** Example of the obtained data from the analyzed cell-life cycle assays

header	Model (FL3-A)	RMS (FL3-A)	Freq. G1 (FL3-A)	Freq. S (FL3-A)	Freq. G2 (FL3-A)	G1 Mean (FL3-A)	G2 Mean (FL3-A)	G1 cv (FL3-A)	G2 cv (FL3-A)	Freq. sub-G1 (FL3-A)	Freq. super-G2 (FL3-A)
293 C.FCS	Wats on	218.15	31.33	46.95	12.66	1568	3136	8.21	8.21	12.11	-0.19
293 T.FCS	Wats on	370.59	17.13	51.91	10.51	1512	3024	8.12	8.12	19.46	1.02
293T C 2nd.FCS	Wats on	119.93	34.97	46.25	12.27	1469	2938	8.09	8.09	6.99	2.16
293T T 2nd.FCS	Wats on	224.65	21.88	49.71	11.13	1341	2682	8.71	8.71	16.32	4.13
A431 C.FCS	Wats on	33.95	16.32	29.25	8.13	1568	3136	8.21	8.21	46.14	0.19
A431 T.FCS	Wats on	29.68	15.55	32.53	7.56	1568	3136	8.21	8.21	43.53	1.49
A549 C.FCS	Wats on	206.33	40.51	28.67	15.46	1412	2824	8.48	8.48	14.16	3.1
A549 T.FCS	Wats on	324.31	35.43	28.81	11.13	1327	2654	9.33	9.33	23.91	2.21
BE-2-C C.FCS	Wats on	240.61	12.19	32.34	8.65	1568	3136	8.21	8.21	43.98	3.37
BE-2-C T.FCS	Wats on	247.21	13.69	34.36	9.16	1568	3136	8.21	8.21	41.26	3.32
HCM T.FCS	Wats on	28.72	36.99	13.36	3.53	1022	2044	11.04	11.04	45.01	1.56
HCM c.FCS	Wats on	10.84	29.43	16.99	2.02	1036	2072	10.31	10.31	48.18	1.41
Hela C.FCS	Wats on	286.71	26.23	40.9	17.63	809	1618	14.06	14.06	6.45	13.59
Hela T.FCS	Wats on	264.74	25.75	41.26	22.23	773	1546	14.07	14.07	7.29	10.72
Hep G2 C.FCS	Wats on	511.08	28.65	29.94	7.21	1547	3094	8.13	8.13	36.53	0.13
Hep G2 T.FCS	Wats on	244.49	18.01	30.93	6.69	1504	3008	8.16	8.16	45.5	0.47
L929 C.FCS	Wats on	257.67	47.79	26.57	5.47	1689	3166	6.97	7.44	20.79	0.34
L929 T.FCS	Wats on	407.68	31.26	23.23	7.73	1639	3102	7.8	8.27	39.13	-0.29
sw48 T.FCS	Wats on	177.72	41.91	29.08	19.82	1355	2710	9.14	9.14	11.14	3.65
sw48 c.FCS	Wats on	60.77	40.38	29.62	11.87	844	1688	13.36	13.36	16.62	7.35
Mean	n/a	213.29	28.27	33.13	10.54	1355.95	2692.5	9.34	9.39	27.23	2.99
Standard Deviation	n/a	135.88	10.54	10.28	5.17	292.95	567.04	2.13	2.09	15.66	3.67