



Supporting Information

for

Fate and transformation of silver nanoparticles in different biological conditions

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Experimental parameters of AgNPs diluted in different biological media

Table S1: Hydrodynamic diameter and % volume distribution of AgNPs after 1, 4, and 24h in selected media, determined by DLS. The abbreviations of all media are explained in the Table 1 of the main manuscript.

Media	AOT AgNP			PVP AgNP			PLL AgNP		
	1h	4h	24h	1h	4h	24h	1h	4h	24h
DMEM	946.4 ± 20.3 (99%)	129.2 ± 55.8 (1%) 887.2 ± 152.7 (99%)	101.1 ± 10.1 (8%) 753.8 ± 148.4 (92%)	20.7 ± 0.0 (13%) 68.7 ± 11.7 (18%) 506.6 ± 141.2 (69%)	846.4 ± 99.8 (100%)	168.4 ± 75.0 (1%) 860.3 ± 262.6 (99%)	25.1 ± 0.0 (4%) 499.4 ± 135.0 (96%)	907.7 V 73.2 (100%)	98.0 ± 39.0 (4%) 635.1 ± 162.1 (93%)
DMEM + BSA	8.6 ± 2.3 (82%) 267.2 ± 43.4 (18%)	9.2 ± 3.7 (88%) 527.3 ± 144.5 (12%)	8.9 ± 3.4 (100%)	5.8 ± 1.6 (93%) 31.2 ± 4.2 (7%)	4.9 ± 1.4 (90%) 33.6 ± 2.3 (10%)	5.6 ± 1.3 (95%) 32.7 ± 5.4 (5%)	8.9 ± 2.8 (91%) 58.2 ± 4.8 (9%)	9.6 ± 4.2 (82%) 45.4 ± 5.7 (18%)	9.6 ± 2.2 (92%) 59.2 ± 7.8 (8%)
CYS	2.8 ± 0.5 (98%) 22.4 ± 2.6 (1%)	2.7 ± 0.7 (99%) 24.5 ± 1.4 (1%)	3.5 ± 0.3 (99%) 28.7 ± 4.2 (1%)	17.8 ± 0.0 (11%) 103.4 ± 4.6 (89%)	10.7 ± 3.7 (43%) 54.7 ± 0.0 (17%) 101.7 ± 9.4 (40%)	12.7 ± 0.1 (18%) 63.6 ± 5.7 (82%)	7.3 ± 1.4 (96%) 44.9 ± 6.2 (4%)	10.0 ± 2.9 (31%) 66.9 ± 28.1 (61%) 529.5 ± 208.7 (8%)	13.9 ± 0.9 (16%) 61.0 ± 10.8 (38%) 771.1 ± 205.1 (46%)
CYS + BSA	3.2 ± 0.1 (99%) 23.1 ± 1.9 (1%)	2.0 ± 0.5 (99%) 21.8 ± 1.4 (1%)	1.3 ± 0.0 (14%) 5.4 ± 2.5 (85%) 31.1 ± 12.5 (1%)	2.1 ± 0.6 (18%) 5.1 ± 0.9 (80%) 38.7 ± 3.2 (2%)	1.9 ± 0.0 (13%) 4.2 ± 0.6 (86%) 35.8 ± 0.8 (1%)	6.8 ± 0.6 (98%) 83.0 ± 7.2 (2%)	90.3 ± 3.8 (23%) 176.5 ± 24.8 (77%)	30.0 ± 0.5 (9%) 90.7 ± 3.4 (36%) 193.7 ± 21.7 (55%)	94.5 ± 0.0 (13%) 150.6 ± 21.0 (87%)
GSH	128.8 ± 2.6 (100%)	190.1 ± 3.3 (100%)	585.5 ± 74.8 (99%)	45.3 ± 0.0 (2%) 423.0 ± 45.0 (98%)	264.7 ± 5.6 (100%)	455.4 ± 17.9 (100%)	5.6 ± 1.6 (93%) 29.1 ± 11.8 (7%)	5.6 ± 1.6 (63%) 23.5 ± 6.6 (37%)	6.0 ± 0.8 (95%) 37.2 ± 3.5 (5%)
GSH + BSA	2.0 ± 0.0 (13%) 7.5 ± 1.0 (87%)	6.3 ± 0.9 (99%) 35.9 ± 0.0 (1%)	6.2 ± 0.6 (100%)	5.4 ± 0.1 (99%) 32.4 ± 0.0 (1%)	5.3 ± 0.4 (99%) 35.6 ± 0.0 (1%)	4.9 ± 0.2 (94%) 31.6 ± 0.5 (6%)	9.7 ± 2.8 (91%) 60.2 ± 51.8 (9%)	9.3 ± 2.2 (79%) 46.1 ± 6.7 (21%)	9.8 ± 3.2 (92%) 61.2 ± 8.4 (8%)
ALF	748.7 ± 97.5 (99%)	758.7 ± 103.5 (100%)	84.4 ± 19.0 (4%) 356.1 ± 141.2 (96%)	7.4 ± 1.2 (100%)	7.1 ± 0.9 (99%) 40.6 ± 6.4 (1%)	6.8 ± 2.6 (99%) 44.2 ± 0.0 (1%)	39.9 ± 12.6 (5%) 978.1 ± 28.0 (95%)	87.7 ± 9.2 (5%) 755.2 ± 120.5 (95%)	19.6 ± 0.0 (6%) 47.4 ± 7.8 (14%)

									363.7 ± 42.1 (80%)
AGF	811.5 ± 48.7 (99%)	762.7 ± 140.6 (100%)	644.0 ± 170.3 (100%)	9.2 ± 2.1 (99%) 48.0 ± 0.0 (1%)	3.9 ± 0.0 (13%) 10.6 ± 2.0 (80%) 70.6 ± 5.9 (7%)	16.0 ± 1.9 (31%) 87.2 ± 7.8 (69%)	4.4 ± 0.6 (86%) 30.7 ± 0.6 (14%)	7.1 ± 4.7 (42%) 636.2 ± 47.8 (58%)	4.8 ± 1.0 (18%) 29.9 ± 3.4 (42%) 617.6 ± 97.4 (40%)

Table S2: Zeta potential of AgNPs after 1, 4, and 24h in selected media determined by ELS. The abbreviations of all media are explained in the Table 1 of the main manuscript.

Media	AOT AgNP			PVP AgNP			PLL AgNP		
	1h	4h	24h	1h	4h	24h	1h	4h	24h
DMEM	-21.7 ± 0.6	-24.5 ± 0.7	-22.9 ± 1.1	-8.2 ± 0.4	-21.7 ± 0.5	-22.2 ± 0.8	24.8 ± 1.5	24.4 ± 1.8	23.3 ± 1.0
DMEM + BSA	-18.7 ± 2.4	-20.4 ± 3.7	-21.2 ± 3.2	-18.2 ± 4.1	-17.2 ± 3.8	-18.1 ± 2.6	-10.4 ± 4.2	-11.4 ± 1.7	-12.7 ± 2.5
CYS	-34.0 ± 2.4	-34.1 ± 1.3	-42.0 ± 1.9	-24.4 ± 0.6	-24.2 ± 1.2	-26.6 ± 0.6	42.1 ± 2.9	32.1 ± 0.8	42.6 ± 3.2
CYS + BSA	-23.8 ± 2.4	-26.7 ± 3.0	-27.2 ± 2.1	-21.2 ± 0.6	-19.3 ± 1.4	-20.1 ± 2.3	-14.3 ± 1.1	-15.0 ± 0.5	-13.7 ± 2.8
GSH	-18.3 ± 1.7	-20.5 ± 1.5	-19.5 ± 0.5	-13.6 ± 0.1	-16.8 ± 0.5	-18.3 ± 0.3	26.9 ± 0.4	28.8 ± 0.7	28.0 ± 2.0
GSH + BSA	-10.2 ± 2.6	-16.1 ± 1.1	-15.5 ± 3.8	-8.9 ± 0.8	-10.3 ± 0.6	-9.9 ± 0.8	-10.3 ± 0.9	-10.3 ± 1.8	-12.2 ± 1.0
ALF	-16.9 ± 0.9	-19.4 ± 1.0	-16.6 ± 0.5	-8.6 ± 1.0	-10.9 ± 1.2	-9.2 ± 0.9	-8.3 ± 0.7	-8.1 ± 0.3	-8.3 ± 0.4
AGF	12.9 ± 1.9	12.4 ± 2.5	6.7 ± 0.4	0.1 ± 0.9	0.4 ± 1.5	0.6 ± 0.8	12.9 ± 1.3	10.3 ± 1.8	15.9 ± 1.0

Table S3. Percentages of Ag⁺ dissolved after 0, 1, 4, and 24 h of exposure of AgNPs to selected media. The abbreviations of all media are explained in the Table 1 of the main manuscript.

Media	AOT AgNP				PVP AgNP				PLL AgNP			
	0h	1h	4h	24h	0h	1h	4h	24h	0h	1h	4h	24h
UPW	0.8	1.0	1.9	3.0	0.6	0.7	1.0	1.3	0.4	0.8	0.9	1.3
DMEM	1.3	1.5	1.3	1.7	0.8	0.9	1.2	0.9	0.8	1.1	1.2	1.6
DMEM + BSA	0.5	0.7	0.8	0.6	0.4	0.6	0.7	1.0	0.6	0.7	0.7	0.9
CYS	0.5	0.4	0.4	0	0.3	0.2	0.2	0	0.2	0.1	0.1	0
CYS + BSA	0.3	0.4	0.5	0	0.2	0.3	0.5	0	0.4	0.2	0.2	0
GSH	0	0	0	0	0	0	0	0	0	0	0	0
GSH + BSA	0	0	0.1	0	0	0	0	0	0	0	0	0
ALF	2.1	1.2	2.0	1.5	0.8	0.7	0.9	0.9	1.6	2.3	2.0	1.7
AGF	2.5	2.3	2.2	1.5	1.1	1.3	1.5	1.4	2.1	2.2	2.4	2.2