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Correction: Toxicokinetics of pristine and aged silver nanoparticles in *Physa acuta*

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Correction for 'Toxicokinetics of pristine and aged silver nanoparticles in *Physa acuta*' by Patrícia V. Silva *et al., Environ. Sci.: Nano*, 2020, **7**, 3849–3868, DOI: 10.1039/D0EN00946F.

An error in the units used for Ag sediment concentration (μg Ag kg^{-1} instead of mg Ag kg^{-1}) in eqn (3) and (4) resulted in the units for sediment uptake being wrongly presented as $g_{sediment}$ $g_{organism}{}^{-1}$ per day rather than $kg_{sediment}$ $g_{organism}{}^{-1}$ per day in the original Table 2. Correcting these units changes the interpretation of the data slightly, as such high uptake rate constants suggest that the Ag concentrations in the sediment were probably too low to explain uptake, and thus uptake through water was probably more important. The modelling using model 2 was redone, leading to different values of k_w, although the values for k_s, k_2 or SF reported in the original Table 2 were not affected. With these new calculations, the units for k_s were maintained as $g_{sediment}$ $g_{organism}{}^{-1}$ per day. The unit for Ag sediment concentrations used in model 4 (eqn (7) and (8)) was also μg Ag kg^{-1}, so the unit of k_1 was wrongly presented as $g_{sediment}$ $g_{organism}{}^{-1}$ per day in the original Table 2 but is changed now to $kg_{sediment}$ $g_{organism}{}^{-1}$ per day. The new values and corrected units are shown in the revised Table 2 below.

The new k_w (uptake from water) values are highest for the exposures to Ag_2S-NPs (3.15 L_{water} $g_{organism}{}^{-1}$ per day) and 60 nm Ag-NPs (2.19 L_{water} $g_{organism}{}^{-1}$ per day), followed by $AgNO_3$ (1.88 L_{water} $g_{organism}{}^{-1}$ per day). The new k_w values, however, did change our conclusion regarding the contribution of uptake from water and sediment to the total Ag uptake, and thus the values in the original Table 3 are incorrect and should not be considered anymore. Redoing the estimate showed that, at the low sediment concentrations in the water-spiked test, for all Ag forms nearly 100% of the Ag measured in the animals was from the water, with less than 0.1% coming from the sediment. The new values are shown in the revised Table 3 below.

These new calculations particularly affected the conclusion of sediment being a more important uptake route for Ag_2S-NPs by the snails, which is no longer valid. It should also be noted that the units of k_1 for sediment as a single exposure route (model 4) changed, with Ag_2S-NPs and $AgNO_3$ presenting the highest k_1 values (1.88 $kg_{sediment}$ $g_{organism}{}^{-1}$ per day and 2.05 $kg_{sediment}$ $g_{organism}{}^{-1}$ per day, respectively). These k_1 values considering sediment as the only exposure route are much higher than the ones obtained in the test with Ag-spiked sediment, due to the fact that uptake was mainly from water because of the very low sediment concentrations in this test with spiked water and clean sediment. As explained above, uptake from water is the dominant process.

In the Abstract, the sentence "When considering the double exposure route, which provides a more realistic contamination scenario, water was the main route, except for Ag_2S-NPs, for which sediment was more important" should be replaced with "When considering the double exposure route, which provides a more realistic contamination scenario, water was the main route".

In the Conclusions, the section: "When accounting for double exposure via both water and sediment, water was likely to be the main route. Interestingly, the simulated aged Ag-NP form (Ag_2S-NPs) revealed analogous kinetics in experiments that considered sediment as exposure route, which points to a higher influence of the sediment for Ag_2S-NPs. This was also supported by the higher contribution to Ag uptake from sediment determined for Ag_2S-NP. Moreover, Ag_2S-NPs were not only highly available to snails but were also easily depurated" should be replaced with: "When accounting for double exposure *via* both water and sediment, water was the main route for all Ag forms tested. Moreover, Ag_2S-NPs were not only highly available to snails but were also easily depurated".

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

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Table 2 Toxicokinetic parameters for 3–8 nm, 50 nm and 60 nm Ag-NPs, Ag_2S-NPs and $AgNO_3$ in *Physa acuta* exposed to water spiked at a nominal concentration of 10 μg Ag L^{-1}, in the Ag-spiked water and clean sediment test. k_1 is the uptake rate constant, k_2 the elimination rate constant, k_w the uptake rate constant from water, k_s the uptake rate constant from sediment, k_g the growth rate constant and SF the stored fraction. 95% confidence intervals (CI) are given in brackets. Different letters within a column indicate statistically significant differences ($X^2_{(1)} > 3.84$; $p < 0.05$)

Exposure route	Ag form	k_w (L_{water} $g_{organism}^{-1}$ per day)	k_s ($g_{sediment}$ $g_{organism}^{-1}$ per day)	k_1 (L_{water} $g_{organism}^{-1}$ per day; $kg_{sediment}$ $g_{organism}^{-1}$ per day)	k_2 (day^{-1})	SF	k_g (day^{-1})
Water and sediment (model 2)	3–8 nm	0.88(n.d.)	0.25(n.d.)		0.05(−0.02–0.12) **A**	0(−0.61–0.61)	−0.02
	50 nm	1.11(n.d.)	0.30(n.d.)		0.65(−0.51–1.80) **A, B, C**	0.13(−0.03–0.28)	−0.01
	60 nm	2.19(n.d.)	0.50(n.d.)		0(−0.03–0.03) **B**	0.01(−0.33–0.35)	0
	Ag_2S-NPs	3.15(n.d.)	1.91(n.d.)		0.74(0.02–1.46) **C**	0.001(−0.02–0.02)	0
	$AgNO_3$	1.88(n.d.)	0.40(n.d.)		0.16(−0.45–0.78) **A, B**	0.33(0.13–0.53)	−0.01
Water (model 3)	3–8 nm			0.88(0.35–1.40) **A**	0.05(−0.02–0.11) **A**	0(−0.57–0.57)	
	50 nm			1.11(0.27–1.95) **A**	0.65(−0.22–1.51) **A, B, C**	0.13(0.04–0.21)	
	60 nm			2.19(0.79–3.36) **B, C**	0(−0.03–0.02) **B**	0.01(−0.32–0.32)	
	Ag_2S-NPs			3.16(1.36–4.95) **B**	0.74(0.12–1.36) **C**	0.001(−0.02–0.02)	
	$AgNO_3$			1.88(0.59–3.17) **C**	0.16(−0.41–0.73) **A, B**	0.33(0.14–0.53)	
Sediment (model 4)	3–8 nm			0.42(0.28–0.56) **A**	0.18(−0.17–0.52) **A**	0(−5.24–5.24)	
	50 nm			0.61(−0.62–1.83) **A, B**	1.76(−3.27–6.80) **A, B**	0.19(−0.17–0.56)	
	60 nm			0.64(0.30–0.99) **A, B**	0.16(n.d.)	1(−4.10–6.10)	
	Ag_2S-NPs			1.88(−6.14–9.91) **B, C**	2.68(−9.86–15.2) **B**	0(−0.06–0.06)	
	$AgNO_3$			2.05(−1.52–5.61) **C**	2.18(−3.65–8.00) **B**	0.27(−0.18–0.72)	

(n.d.) not possible to determine 95% confidence intervals.

Table 3 The relative contribution of uptake from water (APW) and sediment to the total uptake of Ag in *Physa acuta* exposed to 3–8 nm, 50 nm and 60 nm Ag-NPs, Ag_2S-NPs and $AgNO_3$, in the Ag-spiked water and clean sediment test

Ag form	% uptake from water	% uptake from sediment
3–8 nm	99.96	0.036
50 nm	99.96	0.037
60 nm	99.96	0.038
Ag_2S-NPs	99.93	0.075
$AgNO_3$	99.96	0.039