Supplementary Information

Dissolution test for risk assessment of nanoparticles: a pilot study

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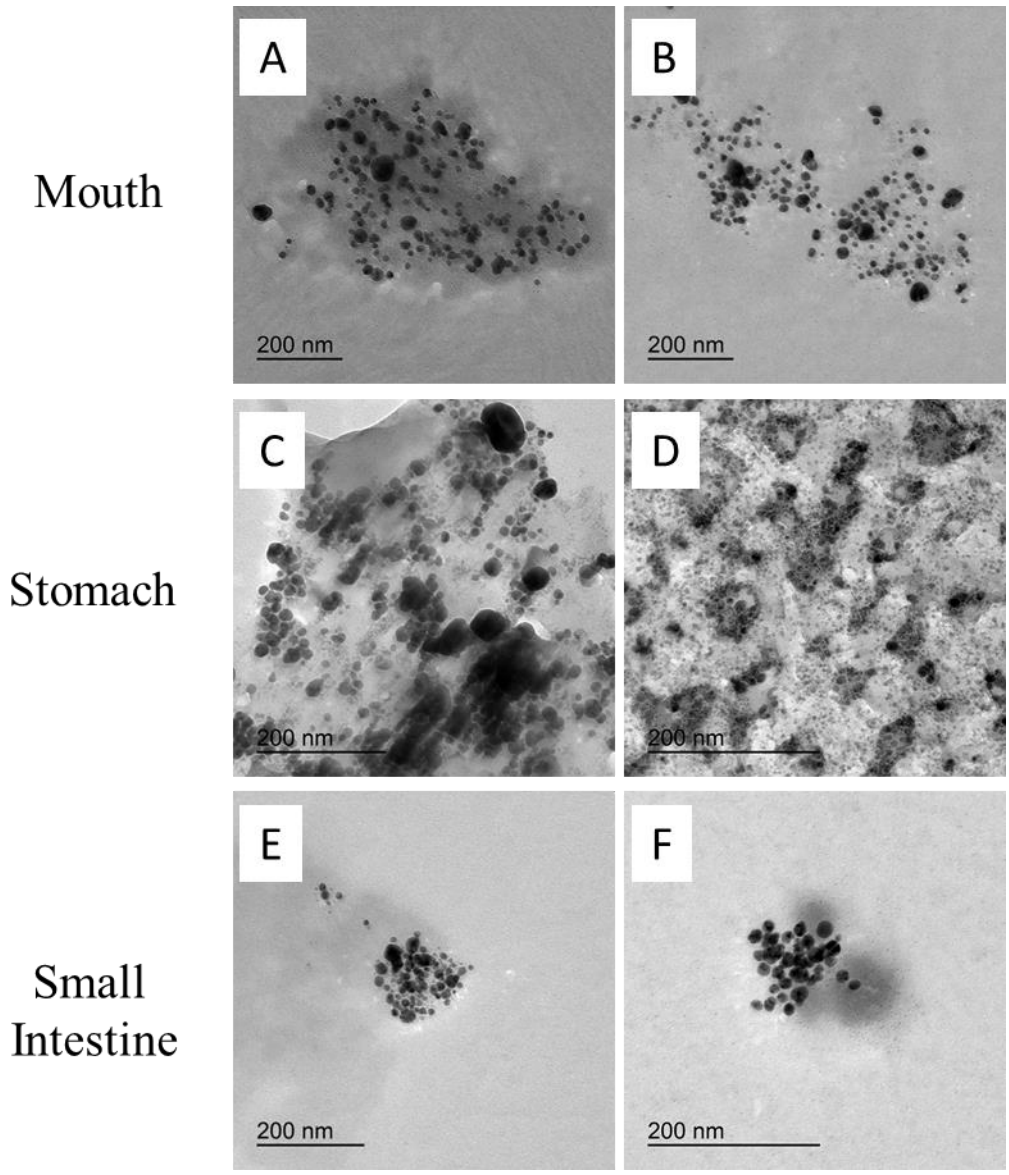
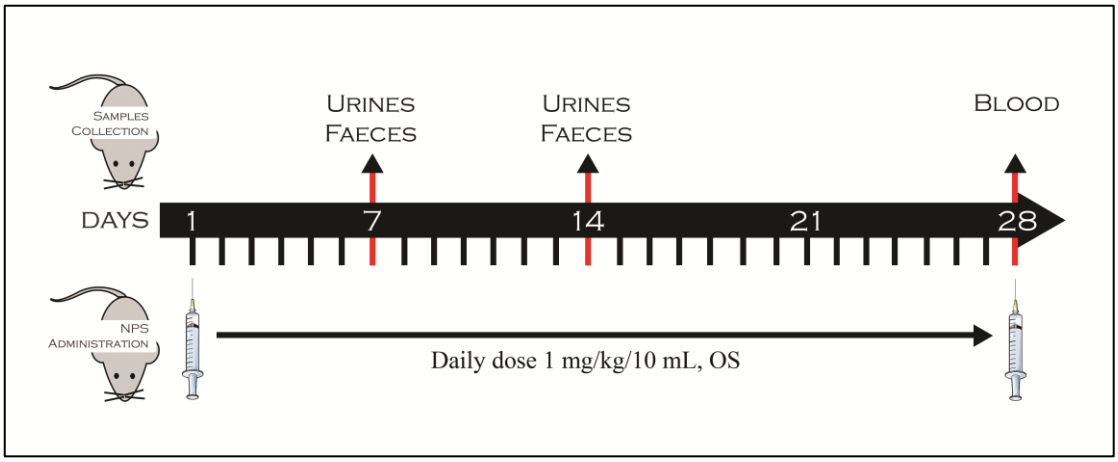


Fig. S1. Representative TEM images of NM300k after transit in mouth (A,B), stomach (C,D) and small intestine (E,F) simulating conditions.

	Theorical concentration (mg/L)	Batch Ag Concentration (mg/L)	NP conc. in the stomach (Cf) mg/L	Ag concentration after UF (mg/L)	% dissolution	NP conc. In the intestine (Cf) mg/L	Ag concentration after UF (mg/L)	% dissolution
NM300k	47,5	41,5	2,18	0,60	27,47	1,06	0,00	0,21
	47,5	39	2,05	0,35	17,05	1,00	0,04	3,90
	47,5	46,3	2,44	0,22	9,03	1,19	0,04	3,71
	47,5	50	2,63	0,40	15,20	1,28	0,01	1,09
	47,5	39	2,05	0,40	19,49	1,00	0,01	1,40
	47,5	26	1,37	0,36	26,31	0,67	0,01	1,08
	47,5	31	1,63	0,35	21,45	0,79	0,01	0,79
			av	0,38	**19,43**	av	0,02	**1,74**
			sd	0,14	6,43	sd	0,02	1,46
Ag ions	47,5	37	1,95	0,31	15,92	0,95	0,02	1,58
	47,5	48	2,53	0,66	26,13	1,23	0,01	0,81
	47,5	34	1,79	0,20	11,18	0,87	0,03	3,44
			av	0,39	**17,74**	av	0,02	**1,94**
			sd	0,24	7,64	sd	0,01	1,35

Fig. S2. Absolute measured silver ion (or soluble complexes) concentration is given for NM300k and ionic standard solutions after digestion by *in vitro* dissolution test.



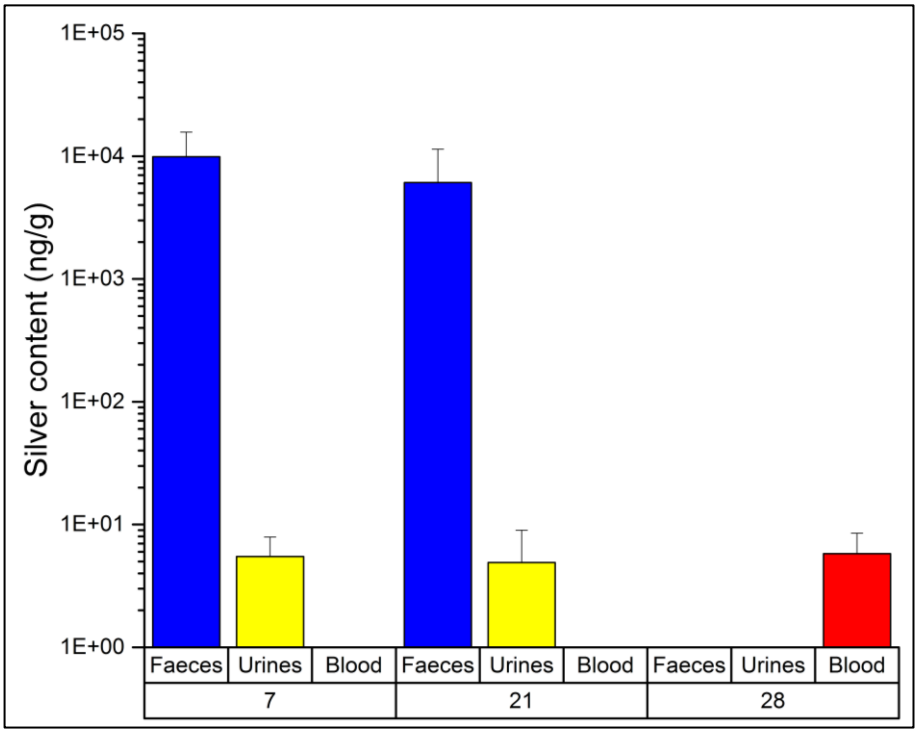


Fig. S3 (Top) Scheme reporting the time of administration and of sample collection; (Bottom) Absolute measured silver ion concentration in faeces, urines and blood.

MOUTH		
Ions	**stock concentration (g/L)**	**mL per 1 L total**
KCl	89.6	10
KSCN	20	10
$NaH_2PO_4 \cdot H_2O$	102.1	10
Na_2SO_4	57	10
NaCl	175.3	1.7
$NaHCO_3$	84.7	20
Organic compounds	**stock concentration (g/L)**	**mL per 1 L total**
Urea	25	8
	mg per 1 L total	
Uric acid	15	
Proteins	**mg per 1 L total**	
Amylase	290	
Mucin	25	

Table S1: Stock solutions of artificial mouth juice

STOMACH		
Ions	**stock concentration (g/L)**	**mL per 1 L total**
NaCl	175.3	15.7
$NaH_2PO4 \cdot H_2O$	102	3
KCl	89.6	9.2
$CaCl_2$	30.2	10
NH_4Cl	30.6	10
Organic compounds	**stock concentration (g/L)**	**mL per 1 L total**
Glucose	65	10
Glucuronic acid	2	10
Glucosaminehydrochloride	33	10
Urea	25	3.4
Proteins	**mg per 1 L total**	
BSA	1000	
Pepsin	2500	
Mucin	3000	

Table S2: Stock solutions of artificial stomach juice

SMALL INTESTINE					
DUODENUM			**BILE**		
Chemicals	**stock concentration**	**mL per 1 L total**	**Chemicals**	**stock concentration**	**mL per 1 L total**
NaCl	175.3	40	NaCl	175.3	30
$NaHCO_3$	84.7	40	$NaHCO_3$	84.7	68.3
KH_2PO_4	8	10	KCl	89.6	4.2
KCl	89.6	6.3	$CaCl_2$	30.2	5.5
$MgCl_2 \cdot 6\ H_2O$	5	10			
$CaCl_2$	30.2	5			
Organic compounds	**stock concentration**	**mL per 1 L total**	**Organic compounds**	**stock concentration**	**mL per 1 L total**
Urea	25	4	Urea	25	10
Proteins	**mg per 1 L total**		**Proteins**	**mg per 1 L total**	
BSA	1000		BSA	1800	
Pancreatin	9000		Bile	30000	
Lipase	1500				

Table S3: Stock solutions of artificial intestine juice