

Determination of Two Differently Manufactured Silicon Dioxide Nanoparticles by Cloud Point Extraction Approach in Intestinal Cells, Intestinal Barriers, and Tissues

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Supplementary Materials

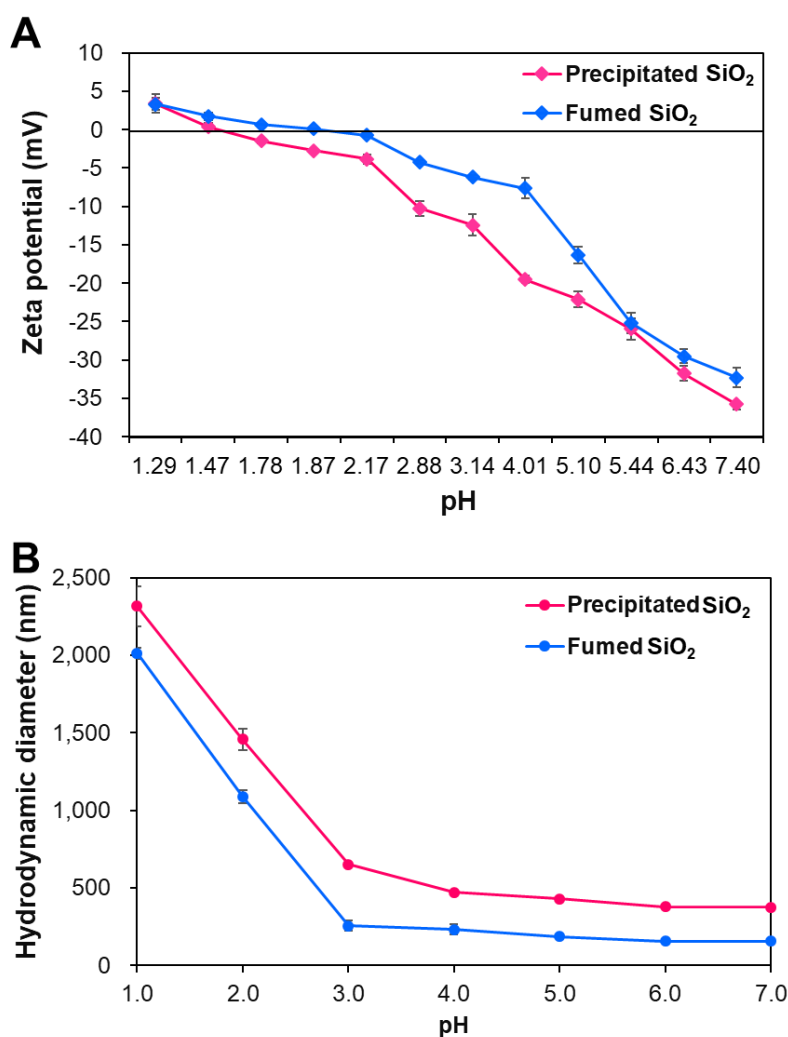


Figure S1. (A) Zeta potentials and (B) hydrodynamic diameters of precipitated SiO₂ and fumed SiO₂ suspension as a function of pH.

Table S1. Recoveries and transport amounts (%) of precipitated SiO₂ and fumed SiO₂ by Caco-2 monolayer and follicle-associated epithelium (FAE) models

		Precipitated SiO ₂		Fumed SiO ₂	
	Incubation time (h)	2	6	2	6
Recovery (%)	Caco-2 monolayer	101.55 ± 2.40	98.80 ± 1.49	98.78 ± 0.88	98.66 ± 1.48
	FAE model	99.22 ± 3.60	100.34 ± 1.20	98.99 ± 0.55	99.25 ± 2.12
Transport (%)	Caco-2 monolayer	0.03 ± 0.95	0.95 ± 0.01	0.04 ± 0.07	0.67 ± 0.01
	FAE model	1.07 ± 0.17	2.08 ± 0.01	0.54 ± 0.06	1.54 ± 0.01
	Total	1.10 ± 1.12	3.03 ± 0.02	0.58 ± 0.13	2.21 ± 0.02

Table S2. Composition of artificial lysosomal fluid (ALF).

pH	Composition (amounts/L)
4.5	sodium chloride (3.2 g), sodium hydroxide (6.0 g), calcium chloride dihydrate (128 mg), sodium phosphate (71 mg), sodium sulfate (39 mg), magnesium chloride hexahydrate (106 mg), formaldehyde (1 mL), citric acid (20.8 g), glycerin (59 mg), sodium citrate dihydrate (77 mg), sodium tartrate dihydrate (90 mg), 60% sodium lactate (65 µL), sodium pyruvate (86 mg), glycine (30.3 g)

Table S3. Compositions of simulated digestion fluids

Digestion fluids	pH	Compositions (amounts/L)
Saliva	6.8±0.1	potassium chloride (896 mg), potassium thiocyanate (200 mg), sodium phosphate monobasic dihydrate (1.1 g), sodium sulfate (570 mg), sodium chloride (298 mg), sodium bicarbonate (1.7 g), urea (200 mg), α -amylase (290 mg), uric acid (15 mg), mucin (25 mg)
Gastric fluid	1.3±0.1	sodium chloride (2.8 g), potassium chloride (824 mg), sodium dihydrogen phosphate dihydrate (332.8 mg), calcium chloride dihydrate (400 mg), urea (85 mg), D-(+)-glucose (650 mg), glucuronic acid (20 mg), glucosaminhydrochloride (330 mg), bovine serum albumin (1.0 g), pepsin (2.5 g), mucin (3.0 g)
Duodenal fluid	8.1±0.1	sodium chloride (7.0 g), sodium bicarbonate (3.4 g), potassium chloride (564 mg), magnesium chloride (22.7 mg), potassium dihydrogen phosphate (80 mg), 37% hydrochloride (180 μ L), urea (100 mg), bovine serum albumin (1 g), pancreatin (9.0 g), lipase (1.5 g), calcium chloride dihydrate (200 mg)
Bile fluid	8.2±0.1	sodium chloride (5.3 g), sodium bicarbonate (5.8 g), potassium chloride (376 mg), 37% hydrochloride (150 μ L), urea (250 mg), bovine serum albumin (1.8 g), bile (30.0 g), calcium chloride dihydrate (222 mg)