

## Supporting Information

### **Colloidal characterization of CuO nanoparticles in biological and environmental media**

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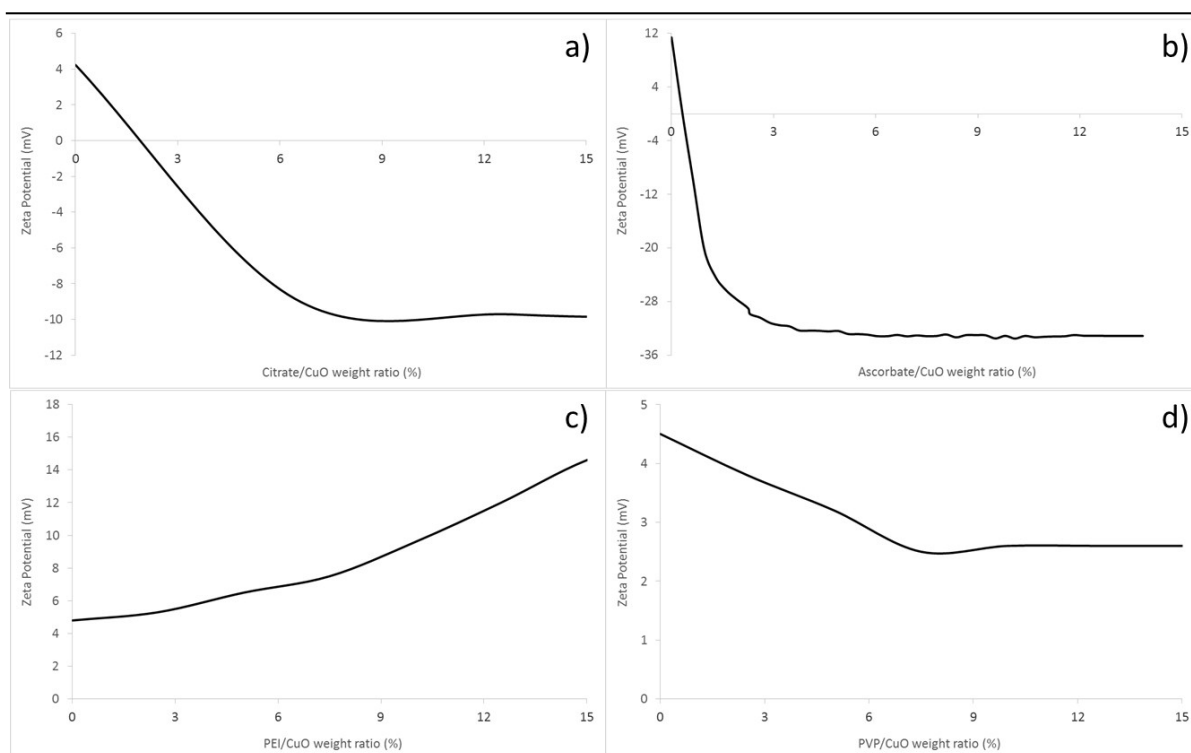
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## Titration via electroacoustic technique

The zeta potential titration results obtained by electroacoustic technique (Acoustosizer, Colloidal Dynamics, Australia) as a function of the capping agent added [i.e. sodium citrate (CIT), sodium ascorbate (ASC), polyethylenimine (PEI) and polyvinylpyrrolidone (PVP)] are shown in Figure S1. This method allowed to calculate the best amount of dispersant that saturates the CuO NPs' surface, which was 10% as referred to powder weight.



**Figure S1.** Zeta-potential curves of CuO NPs as a function of modifying agent added/CuO weight ratio (%). Modifying agent: a) sodium citrate, b) sodium ascorbate, c) PEI and d) PVP.

**Table S1.** Concentration of inorganic salts (g/L) in Dulbecco's Phosphate Buffered Saline (PBS), biological (MEM and DMEM) and environmental (AFW and AMW) media.

	<b>PBS</b>	<b>MEM</b>	<b>DMEM</b>	<b>AFW</b>	<b>AMW</b>
<b>Inorganic salts</b>	(g/L)	(g/L)	(g/L)	(g/L)	(g/L)
CaCl <sub>2</sub> ·2H <sub>2</sub> O	0.133	0.265	0.264	0.294	1.47
Fe(NO <sub>3</sub> ) <sub>3</sub> ·9H <sub>2</sub> O	-	-	0.0001	-	-
MgSO <sub>4</sub> (anhydrous)	-	0.098	-	-	-
MgSO <sub>4</sub> 7H <sub>2</sub> O	-	-	0.2	0.123	-
MgCl <sub>2</sub> ·6H <sub>2</sub> O	0.1	-	-	-	10.8
KCl	0.2	0.4	0.4	0.006	0.7
KH <sub>2</sub> PO <sub>4</sub>	0.2	-	-	-	-
NaHCO <sub>3</sub>	-	2.2	3.7	0.064	0.2
NaCl	8	6.8	6.4	-	23.5
Na <sub>2</sub> HPO <sub>4</sub> (anhydrous)	1.15	-	-	-	-
NaH <sub>2</sub> PO <sub>4</sub> (anhydrous)	-	0.122	-	-	-
NaH <sub>2</sub> PO <sub>4</sub> · 2H <sub>2</sub> O	-	-	0.141	-	-
Na <sub>2</sub> SO <sub>4</sub>	-	-	-	-	4.0
SrCl <sub>2</sub> 6H <sub>2</sub> O	-	-	-	-	0.02
H <sub>3</sub> BO <sub>3</sub>	-	-	-	-	0.03
KBr	-	-	-	-	0.10
Na <sub>2</sub> O <sub>3</sub> Si 9H <sub>2</sub> O	-	-	-	-	0.02

**Table S2.** Concentration (g/L) of amino acids in biological media: MEM and DMEM.

	<b>MEM</b>	<b>DMEM</b>
<b>Amino acids</b>	(g/L)	(g/L)
Glycine	-	0.03
L-Arginine · HCl	0.126	0.084
L-Cystine · 2HCl	0.0313	0.063
L-Glutamine	0.292	0.58
L-Histidine · HCl · H <sub>2</sub> O	0.042	0.042
L-Isoleucine	0.052	0.105
L-Leucine	0.052	0.105
L-Lysine · HCl	0.0725	0.146
L-Methionine	0.015	0.03
L-Phenylalanine	0.032	0.066
L-Serine	-	0.042
L-Threonine	0.048	0.095
L-Tryptophan	0.01	0.016
L-Tyrosine · 2Na · 2H <sub>2</sub> O	0.0519	0.072
L-Valine	0.046	0.094
<b>Other</b>	(g/L)	(g/L)
Glucose	1	4.5
Phenol red · Na	0.011	0.015
Sodium Pyruvate	-	0.11