SUPPLEMENTAL MATERIAL

Title: Informing Selection of Nanomaterial Concentrations for ToxCast *In Vitro* Testing based on Occupational Exposure Potential

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Supplemental Material, Table S1. Examples of silver (Ag) nanoparticle *in vitro* testing concentrations.

Cells	Reported testing concentrations	Exposure duration	NM size and coating information	References
Mouse primary fibroblasts and primary liver cells	1.56, 3.12, 6.25, 12.5, 25, 50, 100, 200, 300, 400, 500 μg/mL	24 h	16.6 nm average, with > 90% in 7–20 nm range. No coating info	(Arora et al. 2009)
Mouse peritoneal macrophage cell line (RAW264.7)	0.2, 0.4, 0.8, 1.6 ppm (or μg/mL)	24, 48, 72, 96 h	68.9 nm average in culture media; No coating info	(Park et al. 2010)
Mouse embryonic stem (mES) cells and mouse embryonic fibroblasts (MEF)	50 μg/mL	4, 24, 48, 72 h	25 nm for both uncoated and Polysaccharide-coated Ag	(Ahamed et al. 2008)
Rat liver derived cell line (BRL 3A)	2.5, 5, 10, 25, 50 μg/mL	2, 24 h	15, 100 nm; No coating info	(Hussain et al. 2005)
Human lung fibroblast cell line (IMR-90) and human glioblastoma cells line (U251)	25, 100, 200, 400 μg/mL	2, 6, 24, 48 h	6-20 nm; Soluble potato starch stabilized	(AshaRani et al. 2009)
Rat neuronal cell line derived from adrenal medulla (PC12)	0.108, 0.324, 1.08, 3.24, 10.8 μg/mL (equates to 1, 3, 10, 30, 100 μM nominal Ag—concentration if all Ag were freely dissolved)	1, 24, 96, 144 h	6 nm average (with 85% < 10 nm) for Citrate-coated Ag; 21 nm (with 88% < 25 nm) and 75 nm (with 57% < 81 nm) for Polyvinylpyrrolidone (PVP)-coated Ag	(Powers et al. 2011)

Supplemental Material, Table S2. Examples of titanium dioxide (TiO_2) nanoparticle *in vitro* testing concentrations.

Cells	Reported testing concentrations	Exposure duration	NM size and form information	References
Human Bronchial Epithelial cell line, (16HBE14o-)	5, 10, 20 μg/cm^2	4, 24 hr	12 nm average by TEM, 86 and 356 nm average hydrodynamic diameter of resolved particle in culture medium (99.9% anatase); 48 nm average by TEM, 243 nm average hydrodynamic diameter of resolved particle in culture medium (65% anatase, 35% rutile)	(Hussain et al. 2009)
Rat liver cell line (BRL 3A)	10, 50, 100, 250 μg/mL	24 h	40 nm; No form info	(Hussain et al. 2005)
Human alveolar epithelial cell line (A5459)	5, 10, 50, 100, 200 μg/mL	1, 24 h	30 nm mean diameter; No form info	(Park et al. 2007)
Primary human neutrophils	0.002, 0.02, 0.2, 2 10, 20, 50, 100 μg/mL	5 min , 15 min, 1 h, 24 h	No size info; Anatase	(Goncalves et al. 2010)
Primary fibroblasts from *gpt* delta transgenic mouse embryo	0.1, 1, 10, 30, 60, 100 μg/mL	24, 72 h	5 nm or 40 nm average primary particle diameter; Both are anatase	(Xu et al. 2009)
Mouse macrophage cell line (RAW264.7)	0.0052, 0.052, 0.52, 5.2, 52, 520 μg/cm^2	24 h	30 nm; Rutile form	(Kim et al. 2009)
Mouse testis Leydig cell line (TM3)	1, 10, 30, 100, 1000 μg/mL	24, 48, 72, 96, 120 h	25–70 nm; No form info	(Komatsu et al. 2008)

Supplemental Material, Table S3. Examples of carbon nanotube *in vitro* testing concentrations.

Cells	Reported testing concentrations	Exposure duration	NM size and functional group information	References
Primary neonatal rat ventricular cardiomyocytes	0.25, 2.5, 25, 50 μg/mL	24 h	SWCNT; No size or functional group info	(Helfenstein et al. 2008)
Primary human epidermal keratinocytes, cryopreserved	0.1, 0.2, 0.4 mg/mL	1, 2, 4, 8, 12, 24, 48 h	MWCNT, 100 nm average diameter, 3.6-50 μm length; No functional group info	(Monteiro-Riviere et al. 2005)
Human astrocyte (from astocytoma) (D384) and human lung alveolar type II cells (from adenocaricnoma) (A549)	1, 10, 100, 200, 400, 800 μg/mL	24, 48 h	All MWCNTs with 20-30 nm outer diameter, 1-2 nm wall thickness; MWCNT, 500–2000 nm length; MWCNT-COOH, 100–300 nm length; MWCNT-NH_2, 100–300 nm length; hf-MW-NH_2, 50–100 nm length	(Coccini et al. 2010)
Mouse macrophages (RAW 264.7) and murine bone marrow-derived dendritic cells (bmDC)	3, 10, 30, 300 μg/mL	2, 6, 24, 48 h	SWCNT, < 2 nm diameter, 1–5 μm length, No functional group info; MWCNT, 10–30 nm diameter, 1–2 μm length, No functional group info	(Palomäki et al. 2010)
3T3 fibroblasts , macrophages (RAW 264.7), telomerase-immortalized human bronchiolar epithelial cells (hT)	10, 100, 1000 μg/mL	2, 3, 4, 6, 10, 12, 18, 20, 24 h	All MWCNT with 0.5-2 μm length, Three different diameter ranges: 1) inner diameter 2-5 nm, outer diameter < 8 nm, 2) inner diameter 5-10 nm, outer diameter 20-30 nm, 3) inner diameter 5-15 nm, outer diameter > 50 nm; No functional group info	(Sohaebuddin et al. 2010)

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