Methodology of selection, acquisition and evaluation of toxicological publications in the Project DaNa$^{2.0}$

Paper:			
Assessment Criteria	**must**	**might**	**fulfilled?**
1. Physico-chemical NM properties (powders or suspensions as prepared or delivered):			
Name of substance (or CAS-No), form of delivery (powder, suspension)	X		
Chemical composition: Purity, contaminations (e.g. elements, element concentrations, endotoxins)	X		
Particle size, size distribution in suspensions (incl. dispersion medium)	X		
Specific surface area of powders (e.g. BET surface)	X		
Surface chemistry (functionalisation, hydrophobic, hydrophilic, ...) / coatings / modifications	X		
Morphology (shape)	X		
Crystallography (crystalline or amorphous phase); phase analysis (pure or mixed)		X	
Surface reactivity and / or surface charge (zeta potential, isoelectric point)		X	
Formation of radicals, (photo-)catalytic activity		X	
Porosity, defect density, magnetic properties		X	
2. Sample preparation (dispersion of as prepared or delivered NM in media used for biological experiments)			
Dispersion procedure described in detail? (Type of medium used, preparation of stock solution or direct dosing, way of dispersal, energy input, nominal concentration)	X		
Extent of agglomeration / aggregation resp. particle size distribution under experimental conditions (e.g. culture medium, nutrient solutions w/o proteins)		X	
Water solubility (discriminate between soluble, metastable and persistent particles; metastable: soluble within days or weeks)		X	
3. Testing parameters:			
Controls (positive and negative controls), check for interferences	X		
Concentration administered: in µg/ml, µg/cm^2; N (particle)/cell or pg/cell	X		
Dosage used classified clearly to be "non-overload" or "overload conditions"	X		
Method 1 for biological endpoints	X		
Additional 2nd method for biological endpoints		X	
Use of reference material		X	
4. General aspects:			
Data evaluation / statistics	X		
Criteria of standardisation (e.g. SOPs used, OECD guidelines)		X	
Final evaluation:			
Evaluated by:	Date		

Legend: fulfilled = x; not fulfilled = n; not assessable = - or 0

Issues to be considered / decided based on expert knowledge:

Clear description of any additive used in combination with the nanomaterial during all steps of testing: (1) during NM production/synthesis, (2) during suspension preparation, (3) during biological testing. (E.g. (1) PVP is added to nAg to stabilize particles during synthesis; (2) Cysteine is added to the nAg suspension to complex free silver ions, (3) during biological testing, the silver particles interact with serum)

Consideration of aging, do NM powders / suspension change over time (oxidation / reduction)?

Information on agglomeration and sedimentation behavior during the test (either descriptive or quantitative)

Specific for ecotoxicological studies
Real exposure concentrations during the test determined (Nominal vs. real concentration)

Legend: fulfilled = x; not fulfilled = n; not assessable = - or 0