Methodology of selection, acquisition and evaluation of publications in the Project DaNa

Assessment criteria – mandatory:

1. *Physico-chemical NM properties (powders or suspensions as prepared or delivered):*

- Name of substance (or CAS-No), form of delivery (powder, suspension)
- Chemical composition: Purity, contaminations (e.g. elements, element concentrations, endotoxins)
- Particle size, size distribution in suspensions (incl. dispersion medium)
- Specific surface area of powders (e.g. BET surface)
- Surface chemistry (functionalisation, hydrophobic, hydrophilic, ...) /coatings /modifications
- Morphology (shape)

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)

3. *Testing Parameters:*

- Controls (positive and negative controls), check for interferences
- Concentration administered: in µg/ml, µg/cm^2 ; N (particle)/cell or pg/cell
- Dosage used classified clearly to be "non-overload" or "overload conditions"
- Method 1 for biological endpoints

4. *General aspects:*

- Data evaluation/ statistics

Assessment criteria – desirable:

1. *Physico-chemical NM properties (powders or suspensions as prepared or delivered):*

- Crystallography (crystalline or amorphous phase); phase analysis (pure or mixed
- Surface reactivity and/or surface charge (zeta potential, isoelectric point)
- Formation of radicals, (photo-)catalytic activity
- Porosity, defect density, magnetic properties

2. *Sample preparation (dispersion of as prepared or delivered NM in media used for biological experiments)*

- Extent of agglomeration / aggregation resp. particle size distribution under experimental conditions (e.g. culture medium, nutrient solutions w/o proteins)
- Water solubility (discriminate between soluble, metastable and persistent particles; metastable: soluble within days or weeks)

3. *Testing Parameters*

- Additional 2nd method for biological endpoints
- Use of reference material

4. *General aspects:*

- Criteria of standardisation (e.g. SOPs used, OECD guidelines)

This compilation was generated within the framework of the project DaNa and updated within DaNa$^{2.0}$ – funded by the German Ministry of Education and Research. It should be used with regard to the project.
Version 2015