

ties. The aim of these standards is to be applied in combination with the procedural standards to enable the fill the information needed for the reporting standards. The third category is the procedural standards category, which include aspects of the OECD essential test method components. These are practically experimental procedures and their application aims to characterise a method and to derive information on basic performance (reliability and relevance) and application-specific performance. The development of this emerging standards is based on the results of (1) a literature survey, (2) a test submission e-survey tool and (3) an expert workshop. The emerging standards will be presented, together with the workflow used to generate them, and with the first experimental results produced from the application of the selected representative clearance method in the EURL ECVAM facility.

<http://dx.doi.org/10.1016/j.toxlet.2015.08.373>

### P03-088

#### Effect of charge and surface ligand properties of silver nanoparticles on toxicity in mammalian cells *in vitro*



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The toxicity of silver nanoparticles (AgNPs) to organisms in the environment has been gaining attention due to their exponentially growing applications in consumer products. Available research data suggest that nanomaterials will present hazards based on their structure and chemistry. The chemical properties imparted by the ligands attached to NP surfaces affect charge, surface area, particle size, and aggregation potential, playing an important role in toxicity. Thus, this study aimed to explore the toxicity mechanisms of different AgNP on human hepatoblastoma (HepG2) and pig kidney (Pk15) cells. We have selected 5 types of AgNPs which differ according to the coating agent (cetyltrimethylammonium (CTA), polyvinylpyrrolidone (PVP), bis(2-ethylhexyl) sulfosuccinate (AOT), poly-L-lysine (PLL), and bovine serum albumin (BSA)) applied for surface modifications. In order to draw valid conclusions from the evaluation of the cellular influences of NPs, we performed comprehensive evaluation on characteristics and stability of AgNPs. For all types of AgNPs tested, the aggregation behaviour was demonstrated upon suspension in cell culture medium. The results showed particles organized in nanometric, but also in micrometric agglomerates. It was also found that biocompatible bulky capping agents, such as bovine serum albumin, provided steric colloidal stabilization. The results showed that all AgNPs reduced cell viability in a dose-dependent manner. The IC50 values of CTA, PVP, AOT, PLL and BSA-AgNPs were 50, 75, 50, 30 and 20 mg/L, respectively, in HepG2 cells. The AgNPs effects were significantly more toxic to Pk15 cell with IC50 values of 15, 8, 4, 7 and 7 mg/L for CTA, PVP, AOT, PLL and BSA-AgNPs, respectively. Finally, our study provides evidence that the type of surface group of AgNPs has a substantial influence over toxicity in mammalian cells *in vitro*.

<http://dx.doi.org/10.1016/j.toxlet.2015.08.374>

### P03-089

#### Bioaccessibility assessment of patulin and ochratoxin A in cereal and fruit based baby foods using a harmonized *in vitro* digestion model: Contribution for the risk assessment of chemical mixtures



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People, animals and the environment can be exposed to multiple chemicals at once from a variety of sources, but current risk assessment is usually carried out on one chemical substance at a time. Mycotoxins are fungal natural contaminants commonly found in a variety of foods including baby foods and have been found in cereal and fruit based baby foods. In human health risk assessment, ingestion of food is considered a major route of exposure to many contaminants including mycotoxins, although the total amount of an ingested contaminant (external dose) does not always reflect the amount that is available to the body (internal dose). The amount of mycotoxin resisting to the digestion process and potentially absorbable by the systemic circulation is only a smaller part of that ingested. *In vitro* digestion models become useful for evaluating mycotoxins bioaccessibility during the intestinal transit and can be intended as a valuable tool for the assessment of mycotoxin bioavailability in food. Trichothecenes, Ochratoxin A (OTA) and Patulin (PAT) are the best known enteropathogenic mycotoxins able to alter functions of the intestine. OTA and PAT were previously detected in cereal and fruit based baby food. This study aimed to evaluate the bioaccessibility of the mycotoxins OTA and PAT in cereal and fruit based baby food and the possible interactions that could happen when these mycotoxins co-occur. A standardized static *in vitro* digestion method was used to assess the bioaccessibility of OTA and PAT in three different cereal and fruit based baby foods, previously checked not to be contaminated with these mycotoxins and artificially contaminated to 1 µg/kg of OTA and 20 µg/kg of PAT. Mycotoxins quantification was performed by HPLC-FLD for OTA and HPLC-UV for PAT. Preliminary results showed that PAT presented bioaccessibility values ranging from 42% to 65%. Bioaccessibility assays for OTA and the mixture of OTA and PAT are under process. This study will provide new information related with the bioaccessibility of mycotoxins in baby foods and the results will offer a more comprehensive picture of what occurs during the digestion of food contaminants in the gastrointestinal tract and subsequently contributes to provide a more accurate risk assessment of single and multiple food contaminants.

**Acknowledgments:** This research was performed under the MycoMix project “Exploring the toxic effects of mixtures of mycotoxins in infant food and potential health impact” (PTDC/DTP-FTO/0417/2012) funded by the Fundação para a Ciência e Tecnologia (FCT), Portugal.

<http://dx.doi.org/10.1016/j.toxlet.2015.08.375>