Methods: REACH guidelines on data submission and data dissemination were reviewed and a number of registration dossiers were selected for data extraction. For each study entry on repeated dose toxicity, information on references was extracted and compiled into a Microsoft Access database. The database format facilitates a quantitative analysis of the information. *Results*: A majority of the toxicity studies in the reviewed dossiers are neither possible to identify nor publicly accessible. More than half of the study references are owned by industry and when disseminated on the web page they are referred to in a way that prevents unique identification. One third of the toxicity studies are published in the publically available literature. As a result, evaluation and interpretation of this data can only be made on the summaries of the toxicity studies provided in the dossier by the registrant which limits transparency in the risk assessment process under REACH.

http://dx.doi.org/10.1016/j.toxlet.2015.08.378

P03-093
Genotoxic action of a metallic-insecticide using Tradescantia pallida as test organism

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Currently, several organisms are used as bioindicators. Among them, the *Tradescantia pallida* stands out for being a plant that easily adapts to any environment and develops throughout the whole year. Furthermore, its use has excelled due to ethical aspects. Due to environmental awareness by governments and society, new chemicals have been developed in order to replace known toxic compounds. In this sense, this study aimed to evaluate the genotoxic effects of the metallic-insecticide Mg4[Mg(5-Cl-phen)(hesperitin)$(H_2O)_2$](CH_3COO). This natural compound bonded to a metal was developed as an alternative use against leaf-cutting ants, once sulfluramid has been banned in several countries. Ten young inflorescences of *T. pallida* were exposed to three different concentrations (0.5 mg/L, 1.0 mg/L, and 2.0 mg/L) of the metallic-insecticide for 8 hours, followed by recovery for 24 hours, under constant aeration. The same protocol was followed for the negative control (exposure in distilled water) and positive control (exposure at 10 ppm of methyl methane sulfonate). After recovery, the inflorescences were collected and fixed in Carnoy. Slides were prepared and those containing cells in tetrad phase were immediately analyzed in order to evaluate the presence of micronucleus. According to statistical test of Kruskal-Wallis none of the analyzed concentrations showed significant genotoxicity index when compared to the negative control. Since the metallic-insecticide showed no toxicity to the test organism, it could be a safe alternative for the control of leaf-cutting ants.

Financial Support: FAPESP (2012/12019-5)

http://dx.doi.org/10.1016/j.toxlet.2015.08.379

P03-094
Daily variability of urinary hydroxylated polycyclic aromatic hydrocarbon metabolites in pre-schoolchildren

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Children represent a susceptible group of population. Child exposures occur mostly via air, food, dust, water and soil. Polycyclic aromatic hydrocarbons (PAHs) are ubiquitous environmental pollutants that are formed during incomplete combustion of organic materials such as crude oil, coal, and natural gas. PAHs have been reported to possess reproductive, developmental, hemato-, cardio-, neuro-, and immuno-toxicities. In human body, PAHs are readily dissolved and transported by cell membrane lipoproteins. These compounds are naturally biotransformed and conjugated with macromolecules to form glucuronides and sulphate esters which are then easily eliminated through urine as hydroxyl metabolites (OH-PAH). The present work aims to assess total exposure to PAHs by schoolchildren (3–6 years old attending a preschool in urban area of Chaves, north of Portugal) via levels of OH-PAH, namely 2-hydroxyfluorene (2OHFlu), 1-hydroxyphenanthrene (1OHPhe), 1-hydroxypyrene (1OHPy) and 3-hydroxybenzo[a]pyrene (3OHB[a]P). Samples of the first morning and the last night urine for each children were collected during consecutive days and analysed by high-performance liquid chromatography with fluorescence detection. Urinary creatinine levels were determined by Jaffe colorimetric method. Schoolchildren first morning urine (ranged between 0.12 and 12.0 μmol/mol creatinine for 2OHFlu, 0.08–0.59 μmol/mol creatinine for 1OHPhe and from 0.08 to 0.91 μmol/mol creatinine for 1OHPy) were higher than the respective night samples (0.01 to 0.61 μmol/mol creatinine for 2OHFlu, 0.03 to 0.27 μmol/mol creatinine for 1OHPhe and between 0.01 to 0.35 μmol/mol creatinine for 1OHPy). 3OHB[a]P, the OH-PAH biomarker of carcinogenicity, was not detected in urinary samples of studied population of children. The findings of the present study indicate that apart from 1-hydroxypyrene (considered the biomarker of exposure to PAHs), other OH-PAH should be also considered in order to better estimate children total exposure to PAHs.

Acknowledgements: This work was supported by Fundação para a Ciência e a Tecnologia through the projects Pest-C/EQB/LA0006/2013 and Pest-C/EQB/UI0511/2013. M. Oliveira and K. Slezakova are also grateful for their fellowships SFRH/BD/80113/2011 and SFRH/BPD/65722/2009, respectively.

http://dx.doi.org/10.1016/j.toxlet.2015.08.380