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Press release

Three new methods on endocrine disruption included in the OECD's test guidelines programme

On 28 April, the OECD's working group of national coordinators of the test guidelines[1] has included in their programme three new methods for the identification of potential endocrine disruptors (EDs) which are being pre-validated by the Pepper association, thanks to its founding and supporting members.

The three methods were selected by Pepper in 2021 to enter the pre-validation phase. They aim at assessing the effect of substances respectively on:

- placental function in pregnant women, using human cells. Participating laboratories: CNRS, Anses, Eurofins and RI.SE;
- hormone synthesis, using effects observed on human adrenal cells. Participating laboratories: RI.SE, Anses, BASF and Vrije Universiteit Amsterdam;
- activation of the glucocorticoid receptor, using human cancer cells (cervical adenocarcinoma). Participating laboratories: Inserm, Ineris, Toxem and Tame Water.

These methods will be the subject of an in-depth review by a group of international experts from the OECD. If approved, they could become a "guideline" on chemical substances, supplementing the list of recognized and enforceable methods in the chemical regulations to allow EDs identification.

CONTEXT

An ED is "an exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub)populations" (WHO, 2012). A group of experts has estimated in 2015 the cost of damages linked to EDs in the European union at €157 billion per year, not including environmental costs.

Numerous studies have confirmed that EDs can have a wide range of sustainable harmful effects on health and environment: reduced reproductive capacity, sexual malformations,

[1] Working Group of National Co-ordinators of the Test Guidelines Programme (*WNT*).

early puberty, certain cancers, delayed cognitive development, altered response to stress, obesity, diabetes etc. However, our knowledge is very limited on many substances.

The Pepper association offers an innovative framework for the funding of pre-validation of test methods of potential EDs, i.e. the essential step consisting in making laboratory methods reliable so that international authorities can incorporate them into a regulatory framework. The work consists in identifying new methods and having them verified by "naive" laboratories, that are then testing their robustness and reliability on anonymous substances.

Actually, the aim is to complete the toolbox critical to EDs identification. At the end of 2021, 15 substances and families of substances were identified as EDs by the European Chemicals Agency. However, international organisations have identified a high number of substances to be investigated. In France, ANSES has identified 906 "substances of interest" with regard to ED characterisation. However, we are sorely lacking a comprehensive, efficient, accredited framework, involving minimal animal testing and including methods which are validated to be universally recognised.

Launched on 2 December 2019, Pepper pools public and private resources in order to optimise the connection between research and the needs expressed by the society, the industry and the regulatory authorities. Pepper selected three first methods at the end of 2020 and launched the work in 2021.

More information on the Pepper association: https://ed-pepper.eu

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