

NEWS PEPPER

The newsletter of PEPPER, the public-private platform for the pre-validation of endocrine disruptor characterisation methods



PEPPER: LAUNCH OF THREE NEW TEST METHODS

The method, which studies the sexual development of the embryo in hen eggs, developed by **Uppsala University**, had its training sessions at Uppsala on June 27, 28 and 29. **INRAE** and **Bionos** laboratory are the partners.

INSERM has developed the *in vitro* **RAR TA** (Retinoid Acid Receptor TransActivation) method. The retinoid system is involved in many functions such as reproduction, development, sight... The first inter-laboratory meeting took place on April 25, 2022. **TOXEM**, **Charles River Laboratory** and the **German Federal Institute for Risk Assessment (BfR)** are the laboratories participating to this pre-validation.

The first inter-laboratory meeting for the pre-validation of the *in vitro* human Neural Progenitor Cell (**hNPC**) proliferation arrest method took place on May 6. This method uses cells cultured in the form of three-dimensional floating spheres. It targets neurodevelopmental toxicity. Developed by the **IUF - Leibniz Research Institute for Environmental Medicine**, it is pre-validated with the help of the **Oroxcell laboratory** and the **University of Uppsala**. The training sessions took place on June 8 and 9 in Düsseldorf.

IN THIS NEWSPEPPER :

Conferences, guidelines and self-assessment of your method maturity

ONE SOCIETY, ONE ENVIRONMENT, ONE HEALTH: ONE 2022 CONFERENCE

The ONE 2022 conference focused on the concept of one health, one environment and one society. Of notice is the number of European bodies involved. Indeed, the European Food Safety Authority (EFSA) co-organised the event with its sister agencies - the European Centre for Disease Prevention and Control (ECDC), the European Chemicals Agency (ECHA), the European Environment Agency (EEA), the European Medicines Agency (EMA) - and the Joint Research Centre (JRC) of the European Commission.

This conference on human and animal food safety marks a step forward in the integration of health and environmental concerns.

Among the critical topics discussed at the meeting that took place from June 21 to 24, Endocrine Disruptors (EDs), the link between research and EU policies, and the search for New Approach Methodologies (NAMs) are relevant to the validation of methods for assessing endocrine disruptors.

➔ <https://www.one2022.eu/>



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We must prepare ourselves to deal with new crises at the interface between animal and human health.

- FRENCH MINISTRY OF AGRICULTURE AT THE CONFERENCE CLOSING EVENT

ENVIRONMENTAL TOXICOLOGY: CONFERENCE SETAC EUROPE, 2022

From May 15 to 19, the annual meeting of the European branch of **SETAC** (Society of Environmental Toxicology and Chemistry) took place in Copenhagen. This year's theme was "Towards a reduced pollution society". About 2500 people registered for the conference.

The session on endocrine disruptors occupied a large part of SETAC (1 full day), displaying the topic as a major issue in environmental toxicology. Another session was also important this year: alternative methods to animal testing, illustrating the growing interest of this subject for environmental toxicology.

➔ <https://europe2022.setac.org/>

VALIDATION OF ANIMAL-FREE METHODS: SWEDISH 3R'S WEBINAR

Many laboratories are not sufficiently aware of the need of validating animal-free methods and do not know how to approach the issue. On June 3, 2022, the Swedish 3R's Center organised a webinar to inform laboratories about the validation process.

Pepper was invited to present its approach. Such a participation to an international effort to raise awareness and train the scientific community on methods validation is part of Pepper's mission.

ADOPTION OF A NEW SET OF TEST GUIDELINES BY THE OECD

On June 30 2022, 7 new Test Guidelines (TG) were adopted by the **OECD** and 10 were updated or revised. The **OECD** TGs are a unique tool for assessing the potential effects of chemicals on human health and the environment. Two of these new TGs target endocrine disruption.



The new TG 251, developed in France on the Rapid Androgen Disruption Activity Reporter (**RADAR**) test, uses transgenic Medaka fish embryos to detect chemicals that interfere with the androgen axis.

➔ https://www.oecd-ilibrary.org/environment/test-no-251-rapid-androgen-disruption-activity-reporter-radar-assay_da264d82-en

TG 456, initially adopted on July 2011, describes an *in vitro* analysis of the effects of chemicals on steroidogenesis, measuring the production of 17 β -estradiol (E2) and testosterone (T). It has been revised to reduce problems of interpretation of results.

➔ https://www.oecd-ilibrary.org/environment/test-no-456-h295r-steroidogenesis-assay_9789264122642-en

ROAD MAP ON NEW APPROACH METHODOLOGIES IN RISK ASSESSMENT

Early June 2022, the European Food Safety Authority (**EFSA**) published a roadmap on New Approach Methodologies (NAMs) in risk assessment. The project focused on improving risk assessment of food and feed components using more modern approaches.

Seven areas were prioritised as requiring further scientific development:

- Development of additional AOPs (Adverse Outcome Pathway)/ AOP networks,
- Advanced cell culture models, including Organ on a Chip (OoC),
- Toxicokinetic assessment and associated models,
- Exposome (defined as the sum of an individual's lifetime exposure to toxicants)
- Human susceptibility,
- Integration of data not used in conventional risk assessment approaches,
- New concepts in risk assessment (using data from NAMs).

➔ <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/sp.efsa.2022.EN-7341>



4TH EUROPEAN FORUM ON ENDOCRINE DISRUPTORS

On May 12 in Paris, the ministerial conference "Chemicals: better protecting health and the environment" organised by France in the framework of the European Presidency, hosted the first part of the 4th annual forum on EDs. On September 21 and 22, the second part of the forum will take place in Brussels. A session will be devoted to validation of test methods, with the participation of Pepper, the OECD and the European Commission's Joint Research Centre (EURL-ECVAM).



https://environment.ec.europa.eu/events/fourth-annual-forum-endocrine-disruptors-2022-09-21_en



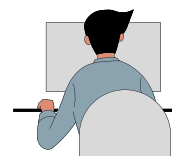
During the first part of the forum, the "1000 premiers jours" website was presented by Santé Publique France, highlighting a section on Endocrine Disruptors. During the first "1000 days" of a child's life, its direct environment (lifestyle, food, physical and chemical risks, etc.) is a determining factor for its development and future health. Several countries have set up similar websites to inform parents and future parents.



<https://www.1000-premiers-jours.fr/>



ReadEDTest: SELF-EVALUATION OF THE MATURITY OF YOUR TEST METHOD



Moving from an "experimental assay" developed in a research context to a "test method" that can be used in a regulatory context requires the availability of strict protocols, data on reproducibility and repeatability...

It is only when the method is "mature" enough that it can enter the validation process making it a tool that can be used in a regulatory context (e.g. OECD Test Guidelines).

Pepper, along with the **Université Paris Cité**, **INSERM**, **OBERON** and **SysTox**, have put online a self-administered WEB questionnaire, which enables the developer to measure the maturity of its method and to identify where further development is needed.

This practical and didactic tool addresses research teams in order to help them developing methods that can be more easily validated (more mature methods, better targeting regulatory gaps). It contributes to meeting an expectation mentioned in the European Commission's Fitness Check on EDs (Pepper Newsletter January/February 2021) and again recently in the ONE2022 conference: "linking research to EU policies".



https://readedtest.u-paris-sciences.fr/page/test_form.php