

環境化学物質3学会合同大会
株式会社イナリサーチ 共催
ランチオンセミナー

第30回環境化学討論会
第24回環境ホルモン学会研究発表会
第26回日本環境毒性学会研究発表会

2022年6月14日(火)

12:40~14:00

会場：富山国際会議場 D会場 特別会議室





Stefan Höger, Ph.D.

Chief Executive Officer

Innovative Environmental Services (IES) Ltd



Dr. Stefan Höger has 14 years of experience in the CRO industry. His field of expertise covers mainly aquatic ecotoxicology, but also terrestrial ecotoxicology, toxicology, biodegradation, analytical chemistry and regulatory know-how (agrochemicals, biocides, chemicals and pharmaceuticals). He previously worked as a study director, team coordinator, team leader, department head and GLP test facility manager in academia and industry.

Comparison of Internal Historical Data From Endocrine Disruptor (ED) Screening Assays (following OECD TG 229, 230, 231) With Data From the EPA ED Screening Programme

Testing for endocrine disruption is an essential part of the regulation of chemical substances in the EU and USA. Key screening assays are the Fish Short Term Reproduction Assay (FSTRA), OECD 229 (OCSP 890.1350), the 21-day Fish Assay (FA), OECD 230, and the Amphibian Metamorphosis Assay (AMA), OECD 231 (OCSP 890.1100). In particular for the registration of plant protection products (PPPs) in Europe these assays are critical, since the indication of an effect triggers higher tier tests resulting in additional costs and additional use of animals and, in case of a confirmed endocrine disrupting effect, a ban of the substance on the European market. Since 2019 IES Ltd has been conducting FSTRA, FA and AMA on a regular basis using fathead minnow (*Pimephales promelas*) and the African clawed frog (*Xenopus laevis*). During implementation and performance of these assays we identified gaps in the description of the applied test performance in both the OECD and the OPPTS (OCSP) guidelines, which may affect the reproducibility and comparability of the outcomes. Given the high importance of these tests for the registration and re-registration of PPPs especially in Europe, existing gaps should be discussed and closed soon. To identify weaknesses of the current procedures, we compared our results for all relevant endpoints (fecundity, nuptial tubercle score, and vitellogenin for the fish tests and determination of the Nieuwkoop-Faber stage, measurement of the hind-limb and snout-vent length for the *Xenopus* test) with data from the Endocrine Disruptor Screening Program, published by the EPA. The results of this comparison will be presented and critically discussed. Moreover, recommendations to improve the testing procedure will be provided, such as the choice of suitable test concentrations.

Keywords: endocrine disruptor, OECD 229, OECD 230, OECD 231, EPA EDS Screening



Ana G. Duran, Ph.D.

Sales and Account Manager ZeClinics



Ana G. Duran, Sales and Account Manager at ZeClinics, is actively involved in developing business relationships with clients all over the world. Ana has a strong scientific background owing to her PhD in Regenerative Medicine (Charité University, Berlin), and vast communication experience which allows her to understand the needs of the different players in the industry and provide solutions.

EndocrineTox: a Zebrafish screening platform to evaluate endocrine disrupting compounds

Acute and long-term exposure to environmental chemicals is a risk not only for the environment but also for human health. Growing evidence suggests that these adverse health outcomes may be due to alterations of the endocrine system. As a consequence, international health and research organizations are focusing on identifying so-called endocrine-disrupting compounds (EDC) and the effects associated with the exposure of these substances.

Small fish like zebrafish have proven excellent experimental systems and suitable alternative models to animal testing because of the large degree of conservation with higher vertebrates. Additionally, zebrafish have several experimental advantages, namely ex utero development, embryo transparency, and large progenies. All these make zebrafish a competitive model for high-throughput screening of potential EDCs in a fast and cost-effective manner.

In this context, ZeClinics – an early-phase biopharma born to use zebrafish for the discovery of novel drugs – has developed EndocrineTox, a robust high-throughput assay to detect potential EDCs. Changes at the transcriptomic level (messenger RNA content, mRNA) have been identified as biomarkers of EDC exposure. In this study, we exposed embryonic zebrafish to the natural ligands 17 β -estradiol, testosterone, and 3,3',5-triiodo-L-thyronine (T3), and identified eight genes representing the three major endocrine axes – estrogenic, androgenic and thyroid. The identified genes were subsequently validated using six previously reported EDCs. In summary, EndocrineTox represents a 3R-aligned, robust and informative high-throughput strategy to screen for potential estrogen, androgen and thyroid-disrupting compounds in a single assay.

Keywords: endocrine disruption, safety, screening.

イナリサーチのグローバルアライアンス



環境・代謝・残留・分析・医薬品環境リスクアセスメントは…

IES -Innovative Environmental Services Ltd. (スイス, バーゼル)

環境試験に特化したCROです。水産動植物/水産動植物以外の両方のEcotoxicology試験、環境運命試験、各種代謝試験、化学分析（5バッチなど）に対応しております。

また、医薬品環境リスクアセスメントに関して、コンサルテーション、試験実施、Expert report作成までトータルにサービスを提供します。

ゼブラフィッシュスクリーニングは…

ZeClinics SL (スペイン, バルセロナ)

ゼブラフィッシュ専門のCROで、低コストで速やかに結果を提示します。毒性のみならず、遺伝子改変技術により各種疾患モデルのゼブラフィッシュを用いた有効性試験も行っています。

Endocrine disruptor (ED) のスクリーニング試験も実施しております。

会期中、現地会場にてブース出展します。
最新の資料を揃え、皆様のご来場をお待ちしております。

お問合せ先

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