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**ERGO**  
Endocrine Guideline Optimisation

# E-newsletter

## Issue 3 | December 2021



**BREAKING DOWN THE WALL BETWEEN  
HUMAN HEALTH AND ENVIRONMENTAL  
TESTING OF ENDOCRINE DISRUPTERS:  
ENDOCRINE GUIDELINE OPTIMISATION**

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## Coordinator's Welcome



Season's Greetings and a warm welcome to the third issue of the **ERGO** E-Newsletter!

2021 has continued to be a challenge for us all, living and working with the ongoing Covid-19 pandemic. Despite the pandemic, overall, we have still made great progress and are now over halfway through our five-year project! In case you missed our previous issues, you can find them [here](#). As a result

of the various restrictions imposed around Europe, some of our research has unfortunately suffered delays. We also had to have our Annual Partner Meeting remotely to plan and discuss project activities for the next year. Hopefully, 2022 will be the year we finally get to welcome the **ERGO** consortium to the [University of Southern Denmark](#) in Odense, Denmark!

**ERGO** is proud to be part of **EURION**, a cluster of eight research projects dedicating their efforts to "New

Testing and Screening Methods to Identify Endocrine Disrupting Chemicals". **EURION** were again involved in the European Commission's Third Annual Forum on Endocrine Disruptors held from 21-22 September 2021. The Forum is a platform to discuss the follow-up actions on endocrine disruptors in the EU's Chemicals Strategy for Sustainability (adopted on 14 October 2020). Each year it brings together scientists, policymakers, public and private stakeholders with expertise on endocrine disruptors to exchange information and best practices, identify challenges and build synergies, in order to inform the Commission's reflections. This year the work of **EURION**, including its visions on knowledge gaps and future research needs on endocrine disruptors was presented by current **EURION** co-Coordinator, Lorenzo Moroni (SCREENED Coordinator, Maastricht University, the Netherlands). To find out more about **EURION** activities, please visit the [EURION website](#).

Follow **ERGO** on its ground-breaking journey. Keep up to date with the project [website](#), watch the [video](#), [subscribe to news](#) and follow **ERGO** on [Twitter](#).

**Assoc. Prof. Henrik Holbech, ERGO Coordinator, Associate Professor of Ecotoxicology, University of Southern Denmark (SDU)**



## About



**ERGO** aims to improve identification and hazard assessment of endocrine disrupting chemicals (EDCs) for the protection of human health and the environment. EDCs are chemicals that interfere with natural hormone balances, adversely affecting the endocrine system which regulates important biological functions in humans and animals. Impacts of EDCs can include breast and testicular cancers, reproductive abnormalities and even neurodevelopmental delay or disruption in children.

EDCs are often man-made (with endocrine disrupting properties as unwanted side effects) and can be found in plastics, clothes, cosmetics, toys, flame retardants and many other household products. Total avoidance is not practical in modern life, but actions should be taken to reduce their availability and better protect people, animals and the environment. In 2019, the European Union-funded research project **ERGO** was launched to respond to these challenges.

**ERGO's** research will break down the wall that currently exists between the different research fields that investigate EDC effects. So far, there has been a segregation between EDC research for human health and the environment. However, **ERGO** believes that research in one field will be applicable to the other and aim to demonstrate that harmful EDC effects observed in a fish or amphibian will also raise concern for harmful effects in humans. **ERGO** will do this by determining key events of thyroid disruption and

identifying adverse outcomes in different species while also investigating the bioavailability and biotransformation of chemicals in different species. **ERGO's** research will enhance existing OECD guidelines for endocrine disruption testing by adding thyroid-related endpoints and biomarkers for different species.

[Click here to find out more](#)




## Project News & Highlights



An update from  
**ERGO partner**  
**John W. Green**



**Workshop:**  
**Threats and Tools for**  
**Endocrine Disrupting**  
**Pollutants in Marine**  
**Organisms**



**Participation in**  
**SETAC North**  
**America's 42nd**  
**Annual Meeting**



**Success of summer**  
**school for PhD & early**  
**career researchers –**  
**Introduction to**  
**Environmental**  
**Metabolomics**



## ERGO Researcher Profile

**Name:** Rikke Poulsen

**Based in:** Risø, Denmark

**Member of ERGO partner:** Aarhus University (AU)



**Research areas:** Rikke is specialised in aquatic toxicology and endocrine disrupting compounds with a particular interest in applying untargeted omics approaches. Working interdisciplinary with molecular biology and analytical chemistry, she has experience with in vivo and in vitro toxicity assays, as well as different omics tools including metabolomics and transcriptomics. With a special focus on applying liquid-, gas- and ion exchange chromatography coupled to high resolution mass spectrometry (HRMS) for targeted and non-targeted analysis of environmental chemicals and their effects, she seeks to obtain a toxicological and biochemical understanding of organismal biology and how they are affected by man-made chemicals.

**Academic background:** PhD in Environmental Chemistry and Toxicology.

**Current research role and work within ERGO:** Rikke joined the Environmental Endocrine Disruptors Laboratory at AU as a visiting PhD student in 2018 and has, since November 2019, been employed as a postdoctoral researcher in ERGO. Using HRMS, Rikke has expanded on previous work in the laboratory by developing a sensitive quantification method of thyroid hormones using LC-MS2 that quantifies not only the main thyroid hormones thyroxine and triiodothyronine but also 10 other thyroid hormone metabolites. Using this method, she performs targeted analyses of thyroid hormones as well as untargeted metabolomics analyses in WP4, WP5, WP6 and WP7.



## EDCs in the News

Pharmaceuticals and  
endocrine disruptors:  
transfer from water to  
land ecosystems

Targeted consultation:  
information  
requirements for  
endocrine disruption





## ERGO Publications

- Audouze, K., Zgheib, E., Abass, K., Baig, A., Forner-Piquer, I., Holbech, H., Knapen, D., Leonards, P., Lupu, D., Palaniswamy, S., Rautio, A., Sapounidou, M. and Martin, O. (2021). Evidenced-based approaches to support the development of endocrine-mediated Adverse Outcome Pathways: Challenges and Opportunities. *Frontiers in Toxicology*. [Read publication here](#)
- Rousseau, K., Dufour, S. and Sachs, L. M. (2021). Interdependence of Thyroid and Corticosteroid Signaling in Vertebrate Developmental Transitions. *Frontiers in Ecology and Evolution*, 9. DOI: [HTTPS://DOI.ORG/10.3389/FEVO.2021.735487](https://doi.org/10.3389/FEVO.2021.735487)
- Zekri, Y., Agnol, L.D, Flamant, F. and Guyot, R. (2021). *In vitro* assessment of pesticides capacity to act as agonists/antagonists of the thyroid hormone nuclear receptors. *iScience*, 102957. DOI: [HTTPS://DOI.ORG/10.1016/J.ISCI.2021.102957](https://doi.org/10.1016/j.isci.2021.102957)
- Steinbach, A.M. (2021). Mechanistic evaluation of rodent studies for selected thyroid disrupting chemicals (TDCs). From key events to adverse outcome pathway. (Unpublished Master's thesis). University of Milan and BASF SE. [MASTER THESIS STEINBACH \(2021\)](#)
- Kubickova, B., Ramwell, C., Hilscherova, K. and Jacobs, M.N. (2021). Highlighting the gaps in hazard and risk assessment of unregulated Endocrine Active Substances in surface waters: retinoids as a European case study. *Environmental Sciences Europe* 33, 20. DOI: [HTTPS://DOI.ORG/10.1186/S12302-020-00428-0](https://doi.org/10.1186/S12302-020-00428-0)



**EURION Cluster Annual  
Meeting 2022 –  
Registration is now  
open!**

**EURION at the Third  
Annual Forum on  
Endocrine Disruptors**

**Latest research  
highlights from the  
eight EURION  
projects**

**EURION E-Newsletter  
Issue 1 – OUT NOW!**



## Dates for your Diary

- **EURION Cluster Annual Meeting 2022**

20-21 January 2022

[More information](#)

- **11th Annual Young Environmental Scientists (YES) Meeting**

7-9 March 2022

[More information](#)

- **ERGO Annual Partner Meeting 2022**

21-22 April 2022

[More information](#)

- **SETAC Europe 32nd Annual Meeting**

15-19 May 2022

[More information](#)



## EDCs Under the Spotlight

### Per- and polyfluoroalkyl substances (PFAS)



*Image by Philipp Berg Unsplash*

PFAS are **manmade chemicals** used as oil and water repellents and coatings for common products such as non-stick cookware, fire retardment textiles, stain resistant fabrics and water repellent clothing and other textiles.

When released into the environment **these EDCs do not break down** and will continue to accumulate over time. They are often referred to as “forever chemicals” due to their persistence in the environment. There are thousands of types of PFAS chemicals; two of the most common are PFOA (perfluorooctanoic acid) and PFOS (perfluorooctane sulfonic acid).

[Read the full article](#)



## How to make your own EDC free...

### Honey Hand Soap

#### Ingredients:

- 1 tablespoon castile soap



- 1 tablespoon honey
- 1 tablespoon almond oil
- Hot water

**Materials:** 250ml pump bottle

**Method:**

1. Add soap, honey and oil to your hand soap bottle.
2. Fill the rest of the bottle with hot water.
3. Replace top and swirl rather than shake the ingredients to mix and combine, otherwise you could end up with a lot of bubbles!
4. Tip: Choose a glass bottle rather than plastic to avoid chemicals potentially leaching into your soap.

Source:

[Hello Glow Blog by Stephanie Gerber](#)



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## Contact Us:

**Project Coordinator:**  
Henrik Holbech  
Syddansk Universitet  
hol@biology.sdu.dk

**Project Administration:**  
Helle Lyngborg  
Syddansk Universitet  
hely@sdu.dk

**Communication & Press:**  
Avril Hanbidge  
AquaTT  
avril@aquatt.ie

Designed and developed by



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