



PROGRAMME
NATIONAL
DE RECHERCHE
SUR LES
PERTURBATEURS
ENDOCRINIENS

International Workshop

21 & 22 January 2016

Institut Pasteur, Paris



ENDOCRINE DISRUPTORS EFFECTS ON WILDLIFE AND HUMAN HEALTH

PROGRAMME



Thursday 21 January 2016

8h30 *Welcome*

9h00 ***Introduction to the PNRPE International workshop.***

Segolène ROYAL. Minister of Ecology, sustainable Development and Energy

Didier HOUSSIN. Chairman of ANSES's Board of Administrators

Session 1 – Effect of endocrine disruptors on wildlife

9h30 ***Plenary conference. Endocrine disrupting chemical effects on avian migration: exploring links to global migratory species declines***

MORRISSEY, C. University of Saskatchewan. Canada.

10h05 ***Oral communications***

Integrated modeling of endocrine disruption in zebrafish at different biological levels (MOZAIC).

BEAUDOUIN, R., et al. Ineris. Verneuil en Halatte. France

Thyroid active pesticides identified using the Xenopus Embryonic Thyroid Signaling Assay.

SEBILLOT, A., et al. Watchfrog. Paris. France

Identification of Embryonic Periods Sensitive to Disruption of Sex Determination in a Model Fish.

SPIRHZANOVA, P., et al. Watchfrog. Paris, France

11h05 ***Posters session and Coffee break***

Session 2 – Metabolic Disorders, Diabetes related to Endocrine Disruptors.

11h30 ***Plenary conference. Environmental endocrine disruptors: new diabetogens ?***

FENICHEL, P. Inserm C3M. Service d'endocrinologie, Diabétologie et Reproduction. CHU de Nice. France

12h05 ***Oral communications***

Association between urinary bisphenol A-glucuronide and the incidence of type 2 diabetes in the French prospective cohort study D.E.S.I.R.

RANCIERE, F., et al. Inserm. Paris. France

Dysregulations of mucosal and systemic immune responses at adulthood after perinatal exposure to bisphenol A (BPA): possible involvement in food adverse reactions and inflammatory diseases.

GUZYLACK-PIRIU, L., et al. Toxalim. Toulouse. France

Seasonal Variation in Urinary UV filters in Danish Children Aged 3-5 Years.

KRAUSE, M., et al. Rigshospitalet, University of Copenhagen. Denmark

13h05 *Posters session and Lunch*

Sessions 3 – Epigenetics and gene expression

14h30 **Plenary conference.** A mechanistic insight into neurodevelopmental endocrine disruption effects

BOURGUIGNON, JP. Department of Endocrinology, University-Hospital of Liège, Belgium

15h05 **Oral communications**

Estrogen receptor β regulates locus-specific DNA methylation – a possible mechanism for Epigenetic effects of endocrine disrupters.

DUONG, W., et al. Science Research Center. Sweden.

Exposure to phthalates and male infertility: role of the genetic background in the epigenetic response.

PAOLONI GIACOBINO, A., et al. University of Genève/ Medical School. Switzerland.

Pregnancy Exposure to Select Phenols and Phthalates and Pulmonary Function in Five Year-Old Male Offspring.

VERNET, C et al., Université de Grenoble. France

16h05 *Posters session and Coffee break*

Sessions 4 - Effects of Endocrine Disruptors on the Reproductive Systems


16h30 **Plenary conference.** Endocrine disruptors and couple fecundity.

BUCK-LOUIS, G. NICHD, USA

17h05 **Oral communications**

Steroid production and gonad formation are regulated by the most used anti-diabetic drug, metformin.

FAURE, M., et al. INRA-Nouzilly, France



A new front of endocrine disruption: analgesics from pharmaceutical and non-pharmaceutical sources and reproductive health.

MAZAUD-GUITTOT, S., et al. Inserm-IRSET, Université de Rennes 1, Rennes, France

Vulnerability of the neural circuitry involved in the expression of male sexual behavior to adult exposure to low doses of endocrine disruptors

DOMBRET C., et al. Inserm-CNRS. UPMC. Paris, France.

Monitoring TDS indicators in France: updated results.

LE MOAL, J., et al. InVS. Saint Maurice, France

18h25 **End of session**

18h30 **COCKTAIL**

Friday 22 January 2016

8h30 *Welcome*

Session 5 – Mixtures

9h00 *Oral communications*

Effect of mixtures of endocrine disruptors in zebrafish: the MIXEZ project.
HINFRAY, N., et al. Ineris. Verneuil en Halatte, France

A chronic exposure to EAS mixtures including bisphenol A, vinclozolin and genistein affects the reproductive axis and testicular transcriptome of the unexposed progeny of exposed fathers.

EUSTACHE, F., et al. Hôpitaux Universitaires Paris et Seine-Saint-Denis, France

Mixture of chemicals found in amniotic fluid disrupt thyroid signaling and brain development.

FINI, JB., et al. CNRS/MNHN. Paris, France

Low-dose effects: experimental challenges for endocrine disruption.

PIERSMA, A., et al. RIVM, Bilthoven, Netherlands.

Synergistic Activation of Human Xenobiotic Receptor by Binary Cocktails of Pharmaceutical and Environmental Compounds.

DELFOSSÉ, V., et al. Centre de Biochimie Structurale, Montpellier, France

An assessment of the effects of chemical mixtures found in meat on human PXR activation: application of the concentration addition model.

DE SOUSA, G., et al. Toxalim, INRA, Toulouse, France.

11h00 *Posters session and Coffee break*

Session 6 – Effects of BPA and BPA Substitutes

11h30 *Plenary conference. Are Bisphenol A substitutes safe?*

HABERT, R. CEA. Paris, France


12h05 *Oral communications*

Bisphenol S promotes obesity in male mice fed to high fat diet.

Del MORAL-IVRY, L., et al. Inserm, AgroSup, Dijon, France

Bisphenol A affects enamel quality and exacerbates dental fluorosis by modulating the expression of a restricted number of genes.

JEDEON, K., et al. Inserm-Universities Paris 5, 6 et 7. Paris, France



Developmental exposure to related substitutes of bisphenol A alters murine and human female germ cells.

GUERQUIN, MJ., et al. CEA/Inserm. Paris, France

13h05 *Posters session and Lunch*

Session 7 – Expertise, Risk Assessment and Economic Cost

14h00 *Plenary conference. Health and Economic Cost exposure to EDs in Europe.*

TRASANDE, L. New York University, School of Medicine, New York, USA.

14h35 *Oral communications*

Benefits for public health from exposure reduction to the endocrine disruptor pesticide chlordecone in Guadeloupe, the BAREPE project.
NEDELLEC, V., et al. VNC, Poissy/CNAM-Paris, France

Toolkit for uncertainty and knowledge quality analysis of endocrine disrupters' risk assessments: the case study of Bisphenol A (Dico-Risk).
BLANCHEMANCHE, S., et al. CNRS, University of Lille. Lille, France

Endocrine disruptors: Challenges for Anses.
ROUSSELLE, C. Anses. Maisons Alfort, France

15h35 **Final Conference.** *Endocrine disrupter regulation in the EU: the current situation and the tasks ahead*


KORTENKAMP, A. Institute for the Environment, Brunel University. Uxbridge, UK


16h30 **Conclusions**


French Ministry of Ecology, Sustainable Development and Energy.


POSTERS SESSION

- P1 Development of exposure assessment and preventive intervention of blood PCB level using Japanese birth cohort data.
MORI, C. et al., Graduate School of Medicine, Chiba University, Japan
- P2 Carbohydrate metabolism is disrupted by a combination of persistent organic pollutants in the human hepatic cell line HepaRG.
LEBLANC, A., et al. Inserm, Université Paris Descartes, ComUE Sorbonne, Paris, France
- P3 Evaluation of $\Sigma 6$ NDL-PCB-induced neurotoxicity in mice offspring: a multigenerational epigenetic study.
KARKABA, A., et al. Afpa/Inra-Université de Lorraine, Metz, France
- P4 Perinatal exposure to NDL- PCBs at environmental level induced changes in inflammatory status in brain mice.
SOUALEH, N., et al. Afpa/Inra. Lorraine, France
- P5 The Endocrine-Disrupter, p,p'DDT behaves as an Allosteric Modulator of the human Follitropin Receptor.
MUNIER, M., et al. CNRS-Inserm, Angers, France
- P6 The effects of DEHP on the Egyptian cotton leafworm, *Spodoptera littoralis*
AVILES, A., et al. UMPC, Paris, France
- P7 Evidence of cross-talk between AhR and ER signaling pathways in fish and human reporter cell lines used for estrogenicity screening.
SERRA, H., et al. Ineris, Verneuil en Halatte, France
- P8 BPA exposure interferes with follicular stage progression in zebrafish.
MIGLIACCIO, M., et al. Università di Napoli, Italia
- P9 Effects of Biphenol A (BPA) on post-embryonic development and sexual behavior of the cotton pest, *Spodoptera littoralis*.
BLAIS, C., et al. UPMC. Paris, France
- P10 Perinatal BPA exposure contributes to obese phenotype in male mice at adulthood: an immunological point of view.
MALAISÉ, Y., et al. Inra, Toxalim. Toulouse, France
- P11 Prenatal Bisphenol A exposure induces sex-specific modifications in lipid profile of mouse liver.
EL HAMRANI, D., et al. CNRS. Orléans, France
- P12 Impaired expression of epigenetic machinery and possible epigenetic modulation of kiss-1 in the testis of rats chronically exposed to low BPA dose.
CHIANESE, R., et al. Università di Napoli Parthenope. Napoli, Italia

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- P13 Effect of continuous exposure to BPA alone or in combination with genistein and/or vinclozoline on taste preferences and submandibular of the offspring.
BOUDALIA, S., et al. Inra, Dijon, France
- P14 Temporal variability of urinary concentrations of phthalate metabolites, parabens and bezophenone-3 in a Belgian adult population.
CHARLIER, C., et al. Toxicology Dept. University of Liège. Liège, Belgium
- P15 BPA or BPS perinatal exposure alter gene expression involved in lipid intestinal metabolism in mice.
LE CORRE, L., et al. Inserm, Agrosup. Dijon, France
- P16 New method for analysis of Bisphenols in various matrix based on molecularly imprinted polymer.
NARAGHI K. et al. Affinisep. Paris, France
- P17 Urinary bisphenol S-glucuronide (BPS-G) and metabolic health in the French prospective cohort study D.E.S.I.R.
RANCIERE, F., et al. Inserm, Sorbonne Paris Cité Research Centre. Villejuif, France
- P18 Bisphenol-A and other bisphenol-A congeners promote adipogenic differentiation of human adipose stromal/stem cells.
MUSTIELES, V., et al. University of Granada, Spain
- P19 Emerging endocrine disruptors: The fate of bisphenol S (BPS) in male and female Wistar Rats.
CABATON, N., et al., Inra,Toxalim. Toulouse, France
- P20 Post-weaning exposure to xeno-hormones affects plasmatic epidermal growth factor through submandibular salivary glands disruption in male but not in female Wistar rats.
KOUIDHI, W., et al. Inra. Dijon, France
- P21 Do Artificial sweeteners act as endocrine-disruptor like. Sex specific effect of prenatal exposure to artificial sweeteners on female submandibular development.
DROUIN, G., et al. Inra. Dijon, France
- P22 Use of transgenic zebrafish models to study the endocrine effects of natural and synthetic progestins
GAROCHE, C., et al. Ineris. Verneuil en Halatte. France
- P23 Ligand affinity of the *Lymnaea stagnalis* estrogen and retinoid-X receptors (LsER and LsRXR): implications for detecting endocrine disruptors.
BOULAHTOUF, A., et al. INRA/Agrocampus-Ouest, Rennes, France

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- P24 An Integrated Approach for the Characterization of the Interaction Between Nuclear Receptors and Endocrine Disruptors.
GRIMALDI, M., et al. Institut de Recherche en Cancérologie. Montpellier, France
- P25 Chemical disruptors modify LXR transcriptional activity.
FOUACHE, A., et al. CNRS-INSERM -CRNH, Université de Clermont. Clermont Ferrand, France
- P26 Is 4-Nonylphenol capable to disrupt osmoregulation in the teleost euryhaline fish *D. labrax*?
FARCY, E., et al. Université de Montpellier, France
- P27 Exposure to a mixture of low-dose endocrine disruptors triggers insulin resistance in young adult male mice fed a diet-inducing obesity.
LABARONNE, E., et al. Inserm, Université Lyon 1. Lyon, France
- P28 Untargeted metabolomics approach to characterize environmental exposure of pregnant women to pesticides by UHPLC-HRMS.
JAMIN, E., et al. EHESP, Rennes, France
- P29 Benzo(a)pyrene exposure during pregnancy: accumulation and adverse effects on human trophoblasts.
GIL, S., et al. Inserm. Paris, France
- P30 Endocrine disruptors and psychiatric disorders in children exposed in utero: evidence from a French cohort of 1002 prenatally exposed children and the example of diethylstilbestrol (DES) as a model for PE study.
SOYER-GOBILLARD, MO., et al. CNRS, Université Paris 6 and Association HHORAGES. Paris, France
- P31 Prenatal exposure to organic solvents and child behavior at age 6: results from the PELAGIE mother-child cohort.
BERANGER, R., et al. Inserm-Irset. Rennes 1, France
- P32 Air to skin: An important exposure pathway for some Semi Volatile endocrine disruptors.
PELLETIER, M., et al. Irset. Rennes, France
- P33 Caractérisation de l'exposition des agriculteurs aux produits chimiques cancérigènes au niveau de la région d'El Hajeb (Maroc).
BERNI, I., et al. Faculté des Sciences, Université Moulay Ismaïl. Meknès, Maroc
- P34 Incidence and spatial trends of idiopathic central precocious puberty in France: a nationwide epidemiologic study
RIGOU, A., et al. InVS. Saint Maurice, France
- P35 Toward a multi-country monitoring system of reproductive health in the context of Endocrine Disrupting Chemical exposure
LE MOAL, J., et al. InVS. Saint Maurice, France

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- P36 Facilitating exposure assessment and improving health surveillance for gathering evidence of endocrine disrupting chemicals health impact.
ZASTENSKAYA, I., et al., WHO European Center for Environment and Health. Bonn, Germany
- P37 EDC-MixRisk: Integrating Epidemiology and Experimental Biology to Improve Risk Assessment of Exposure to Mixtures of Endocrine Disruptive Compounds.
RÜEGG, J. et al., Swedish toxicology science research center (Swetox). Sweden
- P38 Early life exposure to estradiol in neonate rats impairs mucosal and systemic immune response by modulating Th17/Treg cell balance.
GUZYLACK-PIRIOU, L., et al. Inra, Toxalim. Toulouse, France
- P39 Neo-Natal, Pre, Post-Pubertal and Adult Modifications of the Male Reproductive Axis and Testicular Gene Expression after a Continuous Dietary Exposure to Environmental Levels of Endocrine Active Substances Mixtures
EUSTACHE, F., et al. Hôpitaux Universitaires Paris Seine-Saint-Denis, Paris, France
- P40 Transcriptomic analysis and comparative effects of two estrogenic dietary compounds in a cell model of breast cancer.
LECOMTE, S., et al. Irest, Rennes, France
- P41 Contribution of the environmental factors to the progression of the prostate cancer: involvement of ion channel.
DEROUICHE, S., et al. Inserm, Université Lille I, Villeneuve d'Ascq, France
- P42 Effets de mélanges de Perturbateurs endocriniens sur la plasticité mammaire et le cancer du sein.
APPLANAT, M., INSERM - Hôpital Lariboisière. Paris, France
- P43 Long chain alkylphenol mixture promotes breast cancer initiation and progression through an ER α 36-mediated mechanism.
CHAMARD-JOVENIN, C., et al., CNRS-Université de Lorraine, France
- P44 Addressing the capacity of pesticides to act as thyroid hormone receptor antagonists.
GUYOT, R., et al. Institut de Génomique Fonctionnelle. Lyon, France
- P45 Facial dysplasia in wild chimpanzees: a preliminary study on the thyroid disruption axis hypothesis.
NARAT, V., et al. MNHN, Paris. France
- P46 Characterization of thyroid hormone transporter in *Xenopus* and their susceptibility to TDCs.
MUGHAL, B., et al. Sorbonne Universities, MNHN. Paris, France

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- P47 Mixtures of endocrine disrupting chemicals in the mouse embryonic stem cell test.
HESSEL, E., et al. Center for Health Protection, RIVM. Bilthoven, Netherlands
- P48 Analysis of Estrogens compounds, a class of Endocrine Disrupting Chemicals Using Solid Phase Extraction based on Molecularly Imprinted Polymer.
NARAGHI, K., et al. Affinisep. Paris, France.
- P49 A rapid, quantifiable test to assess GPER-specific estrogen-like signaling.
CARNESECCHI, J., et al. Institut de Génomique Fonctionnelle. Lyon, France
- P50 Development of a method for the use of toxicological data in the socio-economic analysis of chemical risks: the case of triclosan.
PRICHYSTALOVA, R., et al. Institut des Sciences de la Communication, France



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Scientific Committee of the workshop

DEMENEIX, Barbara (National Museum of Natural History, Paris, France); LASFARGUES, Gérard (Anses); SKAKKEBAEK, Niels-Erik (University of Copenhagen, Denmark); SLAMA, Rémy (University of Grenoble-Alpes, France).

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COUDERC-OBERT, Céline (MEDDE-CGDD-DRI); GUST, Marion (MEDDE-CGDD-DRI); MOULIN Lionel (MEDDE-CGDD-DRI); SLAMA, Rémy (Head of the Scientific Council of PNRPE); CERVANTES, Paulina (Anses)

Local Organization

COUTUREAU, Fabrice ; PUISEUX, Sabine ; LAURENT, Louis (Anses)

National Endocrine Disruptor Research Program (PNRPE)

The aim of the national endocrine disruptor research program (PNRPE) is to support fundamental and applied research for those involved in public action on endocrine disruption issues. The program is conducted and funded by the french Ministry of sustainable Development and Energy (General sustainable development commission, Research and innovation division); the scientific coordination of the program is insured by the french Agency for food, environmental and occupational health and safety (Anses).

Further information: <http://www.pnrpe.fr>

