toxSeek
POLLUTANT SCREENING

TOXICOLOGICAL ANALYSIS REPORT

TOXSEEK ORGANIC

(PESTICIDES, PARABENS, PHTHALATES, BISPHENOLS, PFOA, ALKYLPHENOLS ...)

File SPECIMEN1

Date 17/03/2019

TOXSEEK
5, RUE FERRIÉ - 95300 ENNERY - FRANCE
Tel. +33. (0) 1.30.37.11.11
RCS 852 954 072

More than 85% of today's illnesses among which are cancers, cardio-vascular, auto-immune and neuro-degenerative diseases, but also reproductive problems can be attributed to 3 environmental factors: substance addiction such as tobacco and alcohol, to stress, and to pollution.

Environmental health is the challenge of our century

For the pollution factor, numerous studies have established the link between pollutants and endocrine disruption in the context of chronic intoxication. One solution: identify the pollutants interacting with our bodies and remove their sources from our environment. Chronic intoxication and its long-term devastating effects will be reduced.

Active prevention is the key

ToxSeek allows you to identify the pollutants you have been exposed to over the last 3 months thanks to cutting-edge technologies used to run tests in a toxicological analysis laboratory. The interpretation of the results is led by our expert medical biologist - pharmaco-toxicologicological doctor.

toxSeek, a healthcare revolution

SUMMARY

UNDERSTANDING TOXSEEK ANALYSES

Important

ToxSeek toxicological analyses deal with **chronic toxicity** . Health risks exist mainly **in the case of repeated and long-term exposure** .

Eliminating sources of detected pollutants with 'at-risk' or 'to be monitored' levels of exposure can reduce risks to your health.

Chronic toxicity assumes:

1- An administration of the pollutant at rates deemed to be non-toxic (not causing the clinical effects associated with acute toxicity)

2- Repeated administration of (exposure to) the pollutant. (Our tests allow for an evaluation over a 3-month period of exposure).

Endocrine disruption

The clinical effects observed during acute intoxication can be life-threatening. On the other hand, the effects of chronic intoxication are different. The most commonly observed effect is endocrine disruption.

The central and peripheral endocrine system is responsible for the functioning, evolution, development and protection of our bodies. Organic and inorganic pollutants are interposed in the millions of enzymatic systems governed by hormones. The problem of repeated endocrine disruption is that the body sees its defence mechanisms weaken or even change, depending on the mechanisms involved. This endocrine disruption can begin to be clinically tested from a few months to several years after repeated exposure. The clinical effects are four-fold: mutagen to carcinogenic, immunological (autoimmune diseases), reproductive (reproduction problems), teratogenic (embryo malformations), neurotoxic (neurocognitive disorders, neurological degeneration).

UNDERSTANDING TOXSEEK ANALYSES (CONTINUED)

Information on thresholds of toxSeek exposure levels

Organic Pollutants

Non-targeted research (screening) in hair can not be quantified because capillary levels are not correlated with blood levels. In addition, black hair, more robust, retains pollutants at higher levels than thin blonde hair. But the trend remains the same: the higher the dose administered, the stronger the signal obtained on our analyzers.

We do not indicate pollutants whose signal is weak or very weak to be sure of the repetition of the exposure.

If the pollutant is at the 'at risk' exposure level, we consider that exposure is high and that it is necessary to look for its sources in order to to eliminate this pollutant from your surroundings.

Metals

The metal elements have been separated into two groups:

Essential elements may be prescribed or taken during oligotherapy. This factor has been taken into account during the definition of thresholds. Thus, even if these elements are useful to our body, it is important not to overdo them and not to underestimate 'at risk' exposure levels.

The **toxic and potentially toxic** elements found at 'at risk' and 'to be monitored' levels contribute to endocrine disruption.

toxSeek
POLLUTANT SCREENING

RESULTS SUMMARY

File SPECIMEN1

IMPORTANT - LEVELS OF EXPOSURE ARE EXPRESSED IN A CONTEXT OF CHRONIC TOXICITY -

ORGANIC POLLUTANT SCREENING

(PESTICIDES, PARABENS, PHTHALATES, BISPHENOLS, PFOA, ALKYLPHENOLS...)

Exposure level AT RISK:

Exposure to these molecules has been very high over the last 3 months. It is necessary to identify the sources and remove them from your surroundings.

- glyphosate
- Tri-iso-butyl phosphate
- fipronil
- DEET / Diethyltoluamide

Exposure level TO BE MONITORED:

Exposure to these molecules has been high over the last 3 months. It is advisable to identify their sources and to monitor or remove them.

- Butyl 4-hydroxybenzoate (Butylparaben)
- Metam sodium
- BPA / Bisphenol A
- DMP / Dimethyl phthalate (DMF)
- Quinacetol
- thiacloprid

toxSeek
POLLUTANT SCREENING

RESULTS OF ANALYSES

ORGANIC POLLUTANT SCREENING

(PESTICIDES, PARABENS, PHTHALATES, BISPHENOLS, PFOA, ALKYLPHENOLS ...)

LC-QTOF ANALYZER

FILE N ° SPECIMEN1 DATE 17/03/2019

Name	Formula	CAS N°	Reference mass	Observed Mass	Score	Area
glyphosate	C3H8NO5P	1071-83-6	169.0140	169.0140	99.00	10 000 000
Tri-iso-butyl phosphate	C12H27O4P	126-71-6	266.1647	266.1650	99.00	7 500 000
fipronil	C12H4Cl2F6N4OS	120068-37-3	435.9387	435.9390	99.00	6 000 000
DEET / Diethyltoluamide	C12H17NO	134-62-3	191.1310	191.1310	99.00	5 500 000
Butyl 4-hydroxybenzoate (Butylparaben)	C11H14O3	94-26-8	194.0943	194.0940	95.00	2 000 000
Metam sodium	C2H4NNaS2	137-42-8	128.9683	128.9680	95.00	1 500 000
BPA / Bisphenol A	C15H16O2	80-05-7	228.1150	228.1150	95.00	1 200 000
DMP / Dimethyl phthalate (DMF)	C10H10O4	131-11-3	194.0579	194.0580	95.00	1 000 000
Quinacetol	C11H9NO2	2598-31-4	187.0633	187.0630	95.00	700 000
thiacloprid	C10H9ClN4S	111988-49-9	252.0236	252.0240	95.00	500 000

toxSeek
POLLUTANT SCREENING

LABORATORY METHODOLOGY

MATRIX

The hair (shaft) is the matrix used to analyze chronic exposure to target pollutants. A length of 3 cm from the root of the hair corresponds to your exposure to pollutants during the 3 months preceding the date of sampling.
The hair samples are completely destroyed during the analysis.

TECHNOLOGIES USED

The samples are analyzed by two very advanced technologies:
For the toxSeek Organic analysis: LC-QTOF: Liquid chromatography analyzer coupled with quadrupole time-of-flight tandem mass spectrometry.
For the toxSeek Metal analysis: ICP-MS: Inductively coupled plasma mass spectrometry.

INTERPRETATION

The interpretation and validation of the results are carried out by our medical biologist - doctor in pharmaco-toxicology.

ACCREDITATION, SCIENTIFIC VALIDATION, CERTIFICATION, CONFIDENTIALITY

ACCREDITATION AND EXTERNAL QUALITY CONTROL

Our laboratory is accredited Cofrac n°8-4182 - ISO 15189 standard (for its activity as a medical biology laboratory). Our laboratory participates in the QMEQAS program (External Quality Assurance of the Institut National de Santé Publique du Québec).

ACCREDITATION

The processes are scientifically validated by a scientific publication (peer-reviewed journal)
Assesment of exposure to Organic and Inorganic Pollutants in Children's Hair - International Journal of Public Health Research-2019; 7(1); 18-22.

CERTIFICATION

All our equipment is certified according to IEC / EN 61010, EN61326, EN55011.

PRIVACY POLICY

The security and the confidentiality of the data are ensured by the implementation of organizational (individual commitment, collective guidelines) and material (premises, computerized systems, instruments) means, compliant with GDPR.

IDENTIFICATION OF EXPOSURE LEVELS

ORGANIC POLLUTANTS - LC-QTOF

Semi-quantitative research
Results classified according to 2 levels of exposure (AT RISK, TO BE MONITORED) defined by the criteria of our pharmaco-toxicological doctor.

METALS - ICP-MS

Quantitative research
Results classified according to 3 levels of exposure (AT RISK, TO BE MONITORED, ACCEPTABLE) defined by the criteria of our pharmaco-toxicological doctor and based on the scientific reference literature.

toxSeek

POLLUTANT SCREENING

BACKGROUND INFORMATION

POLLUTANTS DETECTED

(ORGANIC POLLUTANTS)

- Summary table of potential sources
- Data by pollutant detected

File SPECIMEN1

Date 17/03/2019

TOXSEEK
5, RUE FERRIÉ - 95300 ENNERY - FRANCE
Tel. +33. (0) 1.30.37.11.11
RCS 852 954 072

toxSeek
POLLUTANT SCREENING

IMPORTANT

Organic pollutants and metal pollutants (toxic and potentially toxic) detected by toxSeek toxicological analyses are all potential endocrine disruptors. In the case of joint exposure, an additional or potentiating effect may exist.

To protect you from the risks related to the chronic toxicity of pollutants detected, the referenced potential sources will enable you to remove the offending products from your diet or your surroundings.

Information is extracted, to a great extent, from the following sources:
Pesticide Action Network North America, Chemistry Data Base, Pesticide Properties DataBase, NCBI, Scientific Articles, Mechanism of Action Organophosphorus and Carbamate insecticides, US National Library of Medicine, IARC, European Food Safety Authority, Vidal, National Agency for Food Safety, Environment and Labor, National Institute of Industrial Environment and Risks, CNRS , INRS occupational health body...

We are not responsible for the information quoted. It is provided for informational purposes only and may be updated according to progress in scientific research or the release of information into the public domain.

toxSeek
POLLUTANT SCREENING

DETECTED POLLUTANT DATA

File SPECIMEN1

Organic pollutants detected

BPA / Bisphenol A

CASE NUMBER 80-05-7

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
bisphenol	Synthesis intermediate	Bisphenol A

MAIN USE

An antioxidant for the chemical industry (production of plastic) used in sixty sectors (wide range).

SOURCES

plastic food (water canisters, cans, cans). non-food plastic (PVC, toys, DVDs, eyeglass lenses and lights, sockets and electrical switches, thermal papers). Paints, coatings, resins, elastomers, sealants, cables, adhesives. In industry: brake fluids, heat transfer fluids, electrical installation equipment.

TOXICITY

Possible infertility and impaired fetal development. Possible hyperactivity for exposed embryos. Possible obesity and diabetes, childhood obesity. Possible effects on the intestine and cardiovascular. Likely to be carcinogenic (breast, prostate).

STATUS

Inscribed on the EU list of endocrine disruptors (category 1). Prohibited for certain uses.

Butyl 4-hydroxybenzoate (Butylparaben)

CASE NUMBER 94-26-8

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
paraben	-	paraben

MAIN USE

Food industry, cosmetics, pharmaceuticals as a preservative, flavouring. Microbiocide, action against parasitic fungi.

SOURCES

Creams, lotions, ointments and other cosmetic products. Food (salad dressings, mayonnaise, spicy sauces, mustard - frozen dairy products, ready-made products). Pharmaceutical preparations and toothpastes.

TOXICITY

Estrogenic endocrine disruptor (EU list of potential endocrine disruptors).

STATUS

Authorized

DEET / Diethyltoluamide

CASE NUMBER 134-62-3

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
Pesticide	Insecticide	Benzamide derivative

MAIN USE

Protection against insect bites (local application on the skin or clothing).

SOURCES

Anti-insect creams, lotions, sprays.

TOXICITY

Neurotoxic, suspected reprotoxic. Acetylcholinesterase inhibitor. Enhanced toxicity in combination with other insecticides.

STATUS

Authorized

DMP / Dimethyl phthalate (DMF)

CASE NUMBER 131-11-3

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
Pesticide	Insecticide	Phthalate

MAIN USE

Plasticizer. Solvent. Insecticide. Antiparasitic drug.

SOURCES

Cow, pig, horse. Cosmetics (eye shadow, nail polish and remover, aftershave lotions, skin care). Food packaging. Toys. Tool handles, car parts.

TOXICITY

Reprotoxic. Toxic to the kidneys.

STATUS

Authorized

fipronil

CASE NUMBER 120068-37-3

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
Pesticide	Insecticide / miticide / miticide	pyrazole

MAIN USE

Action against insects (agriculture). Pest (fleas, ticks, termites, cockroaches ...) for pets. Horticulture.

SOURCES

Sprays insecticides. Veterinary products. Grass. Ornamentals.

TOXICITY

Risks of side effects on the liver and thyroid. Registered in category C (carcinogenic Possible for human) carcinogen on the list of EPA. endocrine disruptor possible.

STATUS

Under surveillance

glyphosate

CASE NUMBER 1071-83-6

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
Pesticide	Herbicide	phosphonoglycine

MAIN USE

Against weeds (crop). Chelator. Antibiotic (2010).

SOURCES

Grains, soybeans. Horticulture, home gardens, lawn. descaler boilers and pipes.

TOXICITY

Joined 2015-2017 on the carcinogen list of IARC Group 2A (probably carcinogenic (EPA USA). In 2015, the European Food Safety Authority (EFSA) considered that unlikely that glyphosate presents a carcinogenic hazard to man. Possible endocrine problems: disruption of aromatase activity. Its toxicity also depends on other compounds in different formulations marketed Notes: "There is no data on exposure to glyphosate alone, but only in commercial preparation Acute exposure to these preparations is irritating usually Voircaustique, skin and mucous membranes Allergic reactions are reported The voluntary intake or accidental causes severe disease can be fatal the presence of surfactant in the preparation. was blamed pulmonary complications commonly seen repeated exposure causes contact dermatitis An increased risk of developing certain blood diseases. A was reported, but no conclusions can be made at present there are no data on the genotoxic effects or toxic for reproduction "(INRS-February 2018). "The results (low toxicity of glyphosate) are increasingly controversial due to several publications from the animal model that ascribe nephrotoxic properties neurotoxique.s, teratogenic and effects as endocrine disruptors" (CNRS June 2016). "The current assessment concluded that the weight of evidence indicates that glyphosate does not have endocrine disrupting properties through an extensive database available in the field of toxicology, by estrogen, androgen, thyroid or steroidogenesis "(EFSA August 2017).

STATUS

Under supervision (EPA USA)

Metam sodium

CASE NUMBER 137-42-8

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
Pesticide	Insecticide / fungicide	carbamate

MAIN USE

Disinfectant for mold and fungus. Insect Elimination. protection of multiple-acting cultures agent for sterilizing soil before planting.

SOURCES

Vegetables, fruit. Ornamentals.

TOXICITY

Reprotoxic. Listed as "endocrine disruptor or disruptive potential endocrine system" in the EU regulations and not included in the List of Prohibited Pesticides. Carcinogenic. Toxic to the liver and urinary system. sensitizing agent.

STATUS

Under supervision WFD (EU)

Quinacetol

CASE NUMBER 2598-31-4

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
Pesticide	Fungicide	Quinoline

MAIN USE

Elimination of parasitic fungi.

SOURCES

Potatoes.

TOXICITY

Quinolines can harm the developing foetus, can be neurotoxic, can cause liver damage and have a possible carcinogenic and mutagenic effect.

STATUS

Authorized

thiacloprid

CASE NUMBER 111988-49-9

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
Pesticide	Insecticide / molluscicide	neonicotinoid

MAIN USE

Action against sucking and chewing insects (agricultural crops).

SOURCES

Apples, pears, citrus fruits. Cabbage, carrots, peas, potatoes, oilseed rape.

TOXICITY

Joined in the "Likely to be carcinogenic to humans" on the list carcinogen by the US EPA. Toxic to the liver and thyroid.

STATUS

Under supervision (EPA USA)

Tri-iso-butyl phosphate

CASE NUMBER 126-71-6

FAMILY	SUBFAMILY	CHEMICAL FUNCTION
Other	Intermediate synthesis	Organophosphate

MAIN USE

Textile and adhesive industry. Aeronautical industry. Plasticizer and antifoam agent in aqueous systems.

SOURCES

Mainly flame retardant in household cleaning products and furniture fabrics. But also in plastics, textiles and adhesives. Dyes. Paint additives. In the professional environment: hydraulic fluid components, building materials.

TOXICITY

Reprotoxic (birth defects). Mutagenic (malformations). Developmental delay.

STATUS

Authorized