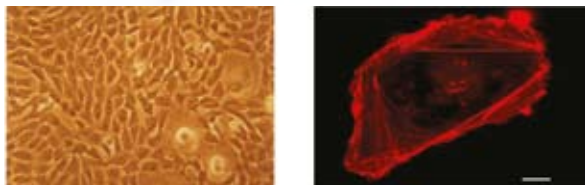


Laboratory for Toxicological Analyses

at the ZWU – Zentrum für Wasser- und Umweltforschung

Based on long time experiences in toxicological research, modern laboratory equipment and well trained staff we are able to provide a variety of cell toxicological analyses for agencies, industry and external research facilities.

Our facility is organized into two areas:



- Toxicology
- Analytics

In addition to contract research and analytical methods we offer toxicological counselling and are interested in method development.

A summary of the working areas and the provided methods can be found at the following pages. We are pleased to give additional information or answers to your questions in person via email or by phone.

We are looking forward to your requests and will give you a noncommittal offer, do not hesitate to contact us.

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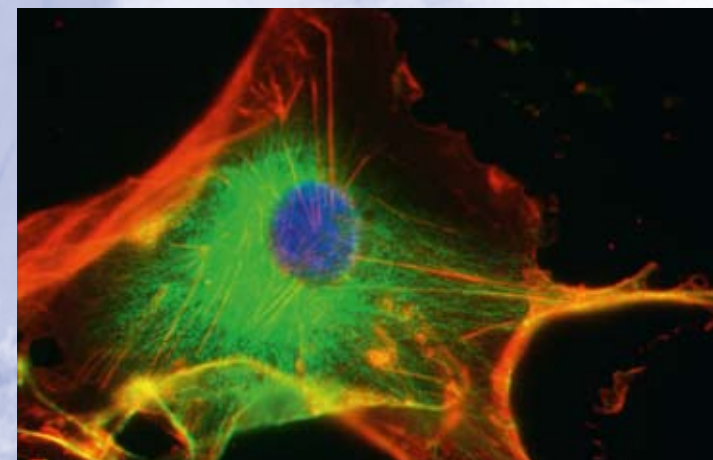
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 TOXLAB.de

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Working areas

Our laboratory offers three areas of toxicological testing:

■ Detection of water contaminants

The initial point during a toxicity evaluation of so far unknown water contaminants is the determination of their general cell toxicity which reflects an overall toxic mode of action. The next step is the determination of genotoxicity as an indication if the substance can cause DNA damage. In case of a genotoxic potential the mutagenicity of a substance is analysed.

As further parameters the production of cytokines offers insights into a possible immunotoxic potential and additionally, the estrogenic activity of the compounds in question can be analysed.

The selection of suitable tests can be adapted individually.

■ Substance testing REACH

The implementation of REACH requires a large-scale study of chemicals especially with respect to their cell-damaging, mutagenic and estrogenic properties.

In order to meet these requirements, our laboratory offers a variety of toxicological tests on the cell culture level.

■ Toxicity of particles and nanomaterial

It is known that inhalable dust can induce inflammation, fibrosis and mutations in lung cells. The induced effects depend upon the chemical composition of the particles, size, biopersistence, surface reactivity and other parameters.

We offer to investigate toxicological properties of different types of particles in vitro as well as the surface reactivity of the particles regarding formation of reactive oxygen species.

Toxicology

In-vitro cultivation of mammalian cells provides a suitable testing system for the analyses of the toxicity of substances and compounds, since it is relatively low in effort, time and cost.

As a testing system it is to be placed between complex, yet time-intensive, costly and controversial animal experiments and strongly simplifying systems that merely work with components of biological systems such as enzyme extracts.

In order to include a maximum of parameters, we offer various test systems.

■ Cytotoxicity

MTT- (Mitochondrial integrity) assay

■ Genotoxicity

Micronucleus-assay

Comet-assay

■ Mutagenicity

DNA-Adducts (8-OHdG)

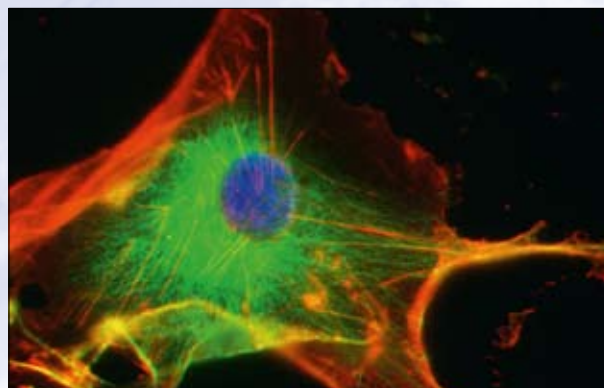
AMES-test

■ Test for estrogenic activity of a substance

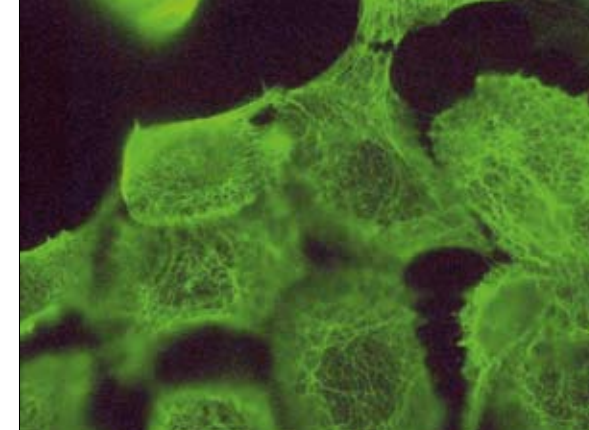
Calux-ER

■ Immunotoxicity

Cytokine detection



Actin Tubulin DNA



Keratin

Analytics – method development – species determination – validation – consulting

Analytics plays a major role especially today with a growing environmental consciousness.

As an analytical laboratory we offer affiliated as well as external customers various analyses- and testing methods with up to date equipment and well trained staff. Because of long-time experience in the field of environmental analytics and as a approved research laboratory for species analysis of heavy metals and metalloids our laboratory offers a broad spectrum of analytical methods for diverse and challenging samples.

Our range of services includes:

- Fast mercury determination in biological samples as well as from solid and liquid matrices (e.g. soil, water, food)
- Heavy metal species analysis with a focus on metalloid organic compounds
- Arsenic and mercury analyses in e.g. water, urine or blood
- Gas- and liquid chromatography analyses via simultaneous element and structure detection

You need counselling related to analytical questions?

Our team awaits your requests with interest, do not hesitate to contact us via email or phone.