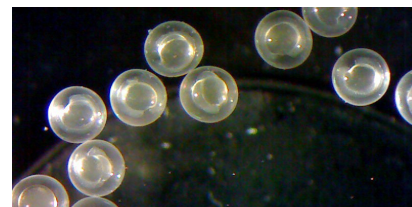
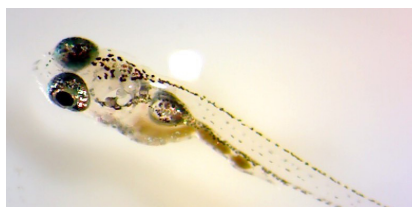


Fish Early-life Stage Toxicity Test (OECD 210, OCSP 850.1400)

Species

Fathead Minnow (*Pimephales promelas*)
Zebrafish (*Danio rerio*)
Medaka (*Oryzias latipes*)



Equipment

Biology:

several flow-through systems,
full glass aquaria,
syringe pumps, membrane pumps,
climate control including an alert system,
in house breeding.

Analytical Instrumentation:

several LC-MS/MS:	GC/MS and 1 GC-MS/MS
API 5500 + 2 API 4000	GF-AAS
HPLC / 2 UPLC equipped with UV	IC
/ DAD	TOC
GC-FID/ECD	

Study Design Biological Part

- Flow-through test design
- Solubility and stability pre-test of the test item under test conditions (non GLP) NOEC and/or EC10, EC20 determination (30 days)

Three Alternative Study Designs within the Analytical Dose Verification (depending on Test Item Properties)

1. Study Design with 42 samples

(basic offer strictly according to OECD requirements)

- Flow-through test design (max. 5 concentrations)
- Including validation of an appropriate analytical method provided by sponsor
- Measurement of one active substance in one replicate per week including equilibration phase

2. Study Design with 84 samples

(recommended for difficult test substances for more distinct results)

- Flow-through test design (max. 5 concentrations)
- Including validation of an appropriate analytical method provided by sponsor
- Measurement of one active substance in 2 replicates at equilibration phase, test start, test end and per test week

3. Study Design with 168 samples

(recommended for difficult test substances for concentration verification of all aquaria)

- Flow-through test design for main test (max. 5 concentrations)
- Including validation of an appropriate analytical method provided by sponsor
- Measurement of one active substance in 4 replicates at equilibration phase, test start, test end and per test week

Please feel free to ask for a scientific discussion with our study directors to choose the most suitable test design for your substance.

Our experience

We have been performing Early-life Stage Toxicity Tests since 2006.

Test Item Categories

Industrial Chemicals:

- Long-chain glyceryl esters
- Organic acids

Agrochemicals and Biocides:

- Herbicides
- Insecticides
- Fungicides

Expert Statements:

- Test substance specific statements to describe why the conduction of a test is not feasible or appropriate, e.g. due to substance instability or chemical analytical issues.

Pharmaceuticals:

- Macrocyclic lactones from Avermectine group
- Retinoids
- Serotonin-norepinephrine reuptake inhibitors
- Central Nervous System stimulants
- Tyrosine-kinase inhibitor

Handling approaches for difficult substances

Low test concentration:

- Sample enrichment methods (liquid-liquid extraction, solid phase extraction)

Low solubility:

- Application via solvent
- Slow stirring flask approach

Instable substances:

- Stand-by analytics
- Daily renewal of stock solutions
- Adjustment of pH



Study Directors

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Please feel free to contact our Business Development Team.
 We will be happy to assist you with your request and any organisational matter.



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